



Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221

MAR 18 2016

Mr. John E. Kieling, Bureau Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87508-6303

Subject: Information Required by Paragraph 31 of the Settlement Agreement and
Stipulated Final Order, Dated January 22, 2016, HWB 14-21 (CO)

Dear Mr. Kieling:

The purpose of this correspondence is to transmit the documentation required by Paragraph 31 of the Settlement Agreement and Stipulated Final Order, HWB 14-21 (CO) dated January 22, 2016 (Order). Included is the Evidence of Completion required by Attachment A of the Order. Eleven items in Attachment A require the submittal of a work plan to complete items that cannot be completed within 60 days of the effective date of the Order. At the time of this submittal, only four items have yet to be completed. These are associated with implementing changes to the training program to incorporate live fire training (response Attachments 25 and 26), modification to the Permit to include the Supplemental Ventilation System (response Attachment 36b), and modifications to the RCRA Contingency Plan (response Attachment 41). These work plans propose alternate dates and schedules for completion of the corrective actions. Consistent with Paragraph 53 of the Order, the Respondents are requesting NMED approval of these work plans and the revised completion schedules. Also consistent with Paragraph 53 of the Order, the Respondents anticipate a decision by the NMED regarding these Work Plans by April 22, 2016.

We certify under penalty of law that this document and all attachments were prepared under our direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on our inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of our knowledge and belief, true, accurate, and complete. We are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please contact Mr. George T. Basabilvazo at (575) 234-7488.

Sincerely,

Original Signatures on File

Todd Shrader, Manager
Carlsbad Field Office

Philip J. Breidenbach, Project Manager
Nuclear Waste Partnership LLC

Enclosure

cc: (w/enclosure)

R. Maestas, NMED * ED

C. Smith, NMED ED

J. Sales, EPA ED

CBFO M&RC

*ED denotes electronic distribution

**INFORMATION REQUIRED BY PARAGRAPH 31 OF THE SETTLEMENT
AGREEMENT AND STIPULATED FINAL ORDER, DATED JANUARY 22,
2016**

NO. HWB-14-21 (CO)

SUBMITTED BY

UNITED STATES DEPARTMENT OF ENERGY

AND

NUCLEAR WASTE PARTNERSHIP LLC

MARCH 2016

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INFORMATION REQUIRED BY PARAGRAPH 31 OF THE SETTLEMENT AGREEMENT AND STIPULATED FINAL ORDER

Part II. *COMPROMISE AND SETTLEMENT*, Section A. *COMPLIANCE SCHEDULE FOR CORRECTIVE ACTIONS*, **Paragraph 31** of the Settlement Agreement and Stipulated Final Order (Settlement Agreement) states:

31. The WIPP corrective actions and corrective action schedules are included as Attachment A. The Respondents shall keep NMED apprised of progress made on corrective actions found in Attachment A on a monthly basis. The Respondents shall complete all the corrective actions contained in Attachment A and submit the required Evidence of Completion to NMED for approval within sixty (60) calendar days of the effective date of this Settlement Agreement, unless an alternate date is approved by NMED in accordance with paragraph 53.

In order to provide documentation of the corrective actions and corrective actions schedules prescribed in Attachment A, the Permittees are providing the following. Attachments 1 to 48 include the required information and are provided at the end of this narrative. Waste Isolation Pilot Plant (WIPP) facility standard operating procedures provided in the Attachments are the revisions in effect at the time of submittal.

1. VIOLATION 1

Violation 1 is stated in Paragraph 106 of ACO HWB-14-21 (CO) as follows:

106. The Respondents' failure to maintain and operate WIPP to minimize the possibility of a fire which could threaten human health or the environment is a violation of Permit Condition 2.1, *Design and Operation of the Facility*, referencing 20.4.1.500 NMAC, incorporating 40 C.F.R. § 264.31.

1.1 Violation 1 Overall Progress and Plans

The violation addresses the WIPP facility Maintenance Program. The Respondents evaluated the Justifications of Needs (JONs) identified by the Accident Investigation Boards (AIBs). Based on this evaluation it was determined that comprehensive improvements to the Maintenance and Work Control Program were necessary to correct deficiencies and ensure WIPP facilities are maintained and operated within the approved safety basis. In response to the JONs, the Respondents developed a comprehensive Maintenance Program that meets applicable regulatory requirements for the maintenance and reliable performance of structures, systems and components that are part of the safety basis required by 10 CFR 830.202 at hazard category 1, 2 and 3 Department of Energy (DOE) nuclear facilities.

1.2 Specific Actions Required by Attachment A to Address the Counts in Violation 1

1.2.1 Violation 1, Count 1

1.2.1.1 Overview

Count 1 is related to the combustible buildup on the salt haul truck that caught fire in the underground. Since the incident, underground equipment has been

evaluated for cleanliness and for gaps between the manufacturers' operations and maintenance (O&M) manual recommendations and the preventive maintenance procedures that were in-place during the event. An engineering evaluation has been completed that addressed the gaps. Updates to associated preventive maintenance procedures incorporate the engineering technical recommendations.

Liquid fueled vehicles have been cleaned and inspected by maintenance, inspected and signed off by the WIPP Fire Protection Engineer prior to being placed back into service and routinely thereafter in accordance with preventive maintenance procedures. Cleaning equipment has been procured and is available, as needed as an aid, to maintain the cleanliness of the underground equipment.

1.2.1.2 Violation 1, Count 1 Documentation to Provide as Evidence of Completion

Attachment A of the Settlement Agreement requires the Respondents to "Provide a list of preventive maintenance procedures for liquid fueled vehicles in the underground." The respondents have attached a list of procedures for liquid fueled vehicles in the underground as **ATTACHMENT 1**. In this list, procedures that begin with the letters "PM" are preventive maintenance procedures that are exercised at a frequency specified in the procedure based on manufacturers' recommendations or operating experience. Procedures that begin with the letters "WP" are operating procedures which may also include pre-operational inspections to assure that equipment is in sound operating condition prior to its use and that working conditions are acceptable (e.g., nearby communications systems operating). Procedures in bold are listed in the WIPP Hazardous Waste Facility Permit (Permit) in Table E-1 as part of the inspection schedule for underground diesel waste handling equipment.

Attachment A of the Settlement Agreement requires the Respondents to "Provide a work plan to complete and submit the modifications to the Permit to add WP 12-FP0060 *Semi-Annual Inspection of Equipment: Automatic Fire Suppression and Fire Detection Systems* to procedures in Table E-1". These actions have been completed with submission of a Class 1 Permit Modification Notification (PMN) to the NMED on September 30, 2015. Because the action is completed, the PMN constitutes the work plan for this item. A copy of the PMN is included in **ATTACHMENT 2**.

Attachment A of the Settlement Agreement requires the Respondents to "Update the inspection criteria for waste handling equipment". These actions have been completed with submission of a Class 1 Permit Modification Notification to the NMED on September 30, 2015. A copy of the PMN is included in **ATTACHMENT 2**.

1.2.2 Violation 1, Count 2

1.2.2.1 Overview

Count 2 is related to the conversion of the fire suppression system to manual use. The NWP Engineering Department has completed a statement of work and a

request for quote to change underground liquid fueled vehicles from manual to automatic fire suppression.

1.2.2.2 Violation 1, Count 2 Documentation to Provide as Evidence of Completion

Attachment A of the Settlement Agreement requires the Respondents to “Provide copy of technical specifications for the automatic system and the Corrective Action Plan (CAP)-related schedule.” These items are included as **ATTACHMENTS 3 and 4.**

Attachment A of the Settlement Agreement requires the Respondents to “Provide a work plan to complete and submit the modifications to the Permit to revise required equipment and inspection criteria in Permit Attachment D and E.” These actions have been completed with submission of a Class 1 PMN to the NMED on September 30, 2015. Because the action is completed, the PMN constitutes the work plan for this item. A copy of the PMN is included in **ATTACHMENT 2.**

1.2.3 Violation 1, Count 3

1.2.3.1 Overview

Count 3 is related to the removal of the automatic fire detection capability. Engineering has completed a statement of work and a request for quote to change underground liquid fueled vehicles from manual to automatic fire suppression. A Purchase Order has been issued to remove the old automatic/manual fire suppression systems on 13 underground vehicles and replace them with new automatic fire suppression systems.

1.2.3.2 Violation 1, Count 3 Documentation to Provide as Evidence of Completion

See the documentation for Violation 1, Count 2.

1.2.4 Violation 1, Count 4

1.2.4.1 Overview

Count 4 is related to not using fire resistant hydraulic fluid in the truck. An engineering evaluation on the technical attributes of fire resistant verses the high temperature hydraulic fluids used in the underground liquid fueled vehicles was completed. The analysis indicates that fire resistant hydraulic fluid may actually pose higher risk of vehicular fires where the fluid may exceed 180 degrees Fahrenheit in operating temperature. At this elevated temperature glycol as well as synthetic flame resistant fluids may degrade and their components separate. Specifications for new equipment include the request to consider the use of flame resistant hydraulic fluids where they will not represent an increased risk associated with their degradation at normal operating temperatures.

1.2.4.2 Violation 1, Count 4 Documentation to Provide as Evidence of Completion

Attachment A of the Settlement Agreement requires the Respondents to “Provide a copy of ETO-U-022 (the engineering evaluation)”. This is included as **ATTACHMENT 5**.

1.2.5 Violation 1, Count 5

1.2.5.1 Overview

Count 5 is related to the emergency preparedness and response program. The following program improvements have been completed:

- Completed an independent comprehensive emergency management assessment (15 Program Elements) and have developed comprehensive corrective actions to address program gaps.
- Developed an Emergency Response Organization (ERO) Training and Qualification Program to address training and qualifying personnel that serve in the WIPP Emergency Operations Center (EOC). Have formally trained and qualified more than 56 personnel in 16 core EOC positions.
- Completed a streamlined the Emergency Notification Process to ensure the WIPP Central Monitoring Room can make the regulatory emergency notifications in a consistent and timely manner.
- Developed an EOC Activation and Operations Procedure and Position Checklists to support the WIPP EOC during activation and operations.
- The WIPP EOC has been enhanced through configuration changes, equipment and system upgrades to improve the EOC operational capabilities and capabilities and processes have been tested during a Full Scale Exercise.
- Developed a comprehensive Drill and Exercise Program (no-notice, scheduled, Full Scale, etc.) and have institutionalized this program into WIPP processes to include drills and exercises with offsite agency partners. A Full Scale Exercise was conducted on September 16, 2015, which included local, State, and federal participation.

The Respondents are planning the following activities in order to complete the improvements to the Emergency Preparedness Program:

- Continue to plan and conduct drills based on a strategic 3-year drill and exercise schedule with a focus on the core capabilities.
- Continue to enhance the Offsite Interface Program (i.e. Private Sector, Eddy, Lea, NM State) through membership with the Eddy and Lea County Local Emergency Planning Committees. In addition, continue to work with emergency management officials at the local and State level for program improvements, planning, and integration.

- Develop a comprehensive Readiness Assurance Program by conducting annual management assessments focused on the emergency management core activities of planning, preparedness, response, and readiness assurance. The evaluations are based on a review and assessment of the planning bases for the program, content of preparedness and response plans and procedures, response tools, resource planning and allocation, training, and exercise programs. These assessments include management assessments in conjunction with exercise evaluations. The 15 DOE Program Elements (DOE Order 151.1C) and associated criteria are assessed over a 3-year period.

1.2.5.2 Violation 1, Count 5 Documentation to Provide as Evidence of Completion

Attachment A of the Settlement Agreement requires the Respondents to assure “Records of these activities will be kept on file at the facility. Drill and exercise program will be evaluated as part of Operational Readiness Review.” In addition, the Respondents are to “Provide the following documents:

- WP 12-9 *WIPP Emergency Management Plan*.
- WP 12-ER4920, *RCRA Contingency Plan Implementation*.
- Description of the Resource Conservation and Recovery Act (RCRA) Contingency Plan training and provide number of sessions and number of personnel trained.
- WP 12-ER4911 *Underground Fire Response*.
- WIPP Three Year Drill and Exercise Program FY 2015 - 2017.

There are no submittals associated with the records of these activities which are being kept on file at the facility and the drill and exercise program evaluation as part of Operational Readiness Review.

The Respondents have attached the following documents:

- WP 12-9 *WIPP Emergency Management Plan*. (**ATTACHMENT 6**)
- WP 12-ER4920, *RCRA Contingency Plan Implementation*. (**ATTACHMENT 7**)
- Description of the Resource Conservation and Recovery Act (RCRA) Contingency Plan training and provided number of sessions and number of personnel trained. (**ATTACHMENT 8**)
- WP 12-ER4911 *Underground Fire Response*. (**ATTACHMENT 9**)
- WIPP Three Year Drill and Exercise Program FY 2015 - 2017. (**ATTACHMENT 10**)

1.2.6 Violation 1, Count 6

1.2.6.1 Overview

Count 6 is related to out-of-service regulators and fans. Work on these items is scheduled as access is available and in order of importance to the safe operation of the facility in filtration mode. Priority is given to those bulkheads and regulators associated with Supplemental Ventilation System (SVS). The following details the status of each of the items identified in the AIB Fire Report:

- Exhaust Fan 413, 41-B-700-A was removed from service due to a deteriorating fan bearing race. Status: At this point in time there are no immediate plans to perform corrective maintenance on 700A fan since it is not needed in filtration mode. (Note that the 700A fan is no longer useable for normal ventilation because it has been blocked in order to attach the intake for the Interim Ventilation System (IVS).)
- Exhaust Fan 413, 41-B-700-B was removed from service to replace deteriorating isolation damper actuators. The actuators and mounting brackets had significant rust associated with them. Status: At this point in time there are no immediate plans to perform corrective maintenance on 700B fan since it is not needed in filtration mode.
- 707 bulkhead which divides the construction split from the disposal split requires manual operation and cannot be remotely shut. The bulkhead was manually shut the afternoon of February 14, 2014 prior to the release event. It is preferred from a ventilation management standpoint that the bulkhead be closed when in filtration mode. Status: The Respondents have prepared an Action Request to reconfigure the 707 bulkhead by blocking off the louvers so the bulkhead is permanently closed while in filtration mode.
- 401 bulkhead door has been chained open for a long period of time. It cannot be operated remotely from the Central Monitoring Room (CMR) in the chained condition. The door was chained open as a safety precaution because Operations was concerned that the door could “slam” shut on personnel inadvertently causing injury. The plan is to add closure dampers to the bulkhead to slow the closing of the doors. Prior to installing the dampers, a ground movement condition that impedes closure will be addressed by redesigning and installing a new bulkhead. Status: The new bulkhead was completed on June 16, 2015.
- EXO regulator was not working. The garage door was opened about two feet, and allowed smoke in the EXO space. The regulator did not have a handle bar with which to open it manually in a safe fashion. Status: A replacement handle will be mounted on the louver shaft to make it easier to open and close.
- 504 bulkhead is the bulkhead door to the Salt Handling Shaft. The doors were chained open because Operations was concerned that the doors could “slam” shut on personnel inadvertently. Status: The plan is to add closure dampers to the bulkhead to slow the closing of the doors. Work will not be started until the 401 bulkhead work is completed.

- 308 bulkhead is located between the Waste Shaft and the exhaust shaft. The 308 regulator was not out of service or impaired at the time of the fire or release. Status: The 308 bulkhead is operational.

1.2.6.2 Violation 1, Count 6 Documentation to Provide as Evidence of Completion

With regard to deliverable items for Count 6, Attachment A of the Settlement Agreement states “None identified. Improvements will be obvious by inspection.”

1.2.7 Violation 1, Count 7

1.2.7.1 Overview

Count 7 is with regard to inoperable mine phones which have been repaired/replaced to better ensure viable communications. Mine phone locations as of March 2015 have been depicted on a map for use by the NMED. As phones become accessible during recovery they are checked and batteries changed on the spot if needed. The phones in essential locations are working as required. The Respondents will continue to perform Permit required inspections of mine phones at essential locations. Inspections of phones at other locations are conducted by underground personnel when they are used. In addition, Model Work Order MWO00534 Step 2.2.17 states that a portable mine phone shall be provided for personnel working in areas of the mine where a fixed phone is not readily available.

1.2.7.2 Violation 1, Count 7 Documentation to Provide as Evidence of Completion

Attachment A of the Settlement Agreement requires “Inspection records and results are kept on file at the facility per the Permit” and the Respondents are to “Provide example procedure (WP 05-WH1810, *Underground Transuranic Mixed Waste Disposal Area Inspections*) implementing daily inspection of mine pager phones in areas where they are being used; Provide a work plan to complete and submit the modifications to the Permit; Provide a work plan to complete and submit WP 04-PC3018, *Quarterly Essential Plant Communication Testing*.”

There are no submittals associated with the records and results which are being kept on file at the facility. The Respondents have attached the following:

- Example procedure (WP 05-WH1810, *Underground Transuranic Mixed Waste Disposal Area Inspections*) implementing daily inspection of mine pager phones in areas where they are being used is provided as **ATTACHMENT 11.**
- A Class 1 Permit Modification Notification incorporating the inspection of mine-pager phones into the Permit was submitted to the NMED on September 30, 2015. Because the action is completed, the PMN constitutes the work plan for this item. A copy of the PMN is included in **ATTACHMENT 2.**

- Procedure WP 04-PC3018 *Quarterly Essential Plant Communication Testing* is completed and attached as **ATTACHMENT 12**. Because the action is completed, the procedure constitutes the work plan for this item. (Note: Some of the electronic attachments are still under development.)

1.2.8 Violation 1, Count 8

1.2.8.1 Overview

Count 8 is with regard to the AIB finding of insufficiently rigorous equipment inspections. To mitigate this, Procedure WP 09-12, Technical Operability Evaluation, was created. Engineering Technical Operability (ETO) evaluations have been performed against O&M Manual identified maintenance recommendations for Underground (underground) liquid fueled vehicles. WIPP facility maintenance procedures have been revised to address the gaps identified. Cleaning, required PM activities, and Fire Protection Engineering inspections are being performed on underground liquid fueled equipment PRIOR to operation. Evaluations are being completed for surface liquid fueled vehicles and associated procedures have been or will be revised based on the gaps identified.

1.2.8.2 Violation 1, Count 8 Documentation to Provide as Evidence of Completion

Attachment A of the Settlement Agreement requires the Respondents to “Provide a list of preventive maintenance procedures for liquid fueled vehicles on the surface.” The Respondents have attached a list of procedures for liquid fueled vehicles on the surface as **ATTACHMENT 13**. In this list, procedures that begin with the letters “PM” are preventive maintenance procedures that are exercised at a frequency specified in the procedure based on manufacturers’ recommendations or operating experience. Procedures that begin with the letters “WP” are operating procedures which may also include pre-operational inspections to assure that equipment is in sound operating condition prior to its use and that working conditions are acceptable (e.g., nearby communications systems operating). Procedures in bold are listed in the WIPP Hazardous Waste Facility Permit (Permit) in Table E-1 as part of the inspection schedule for underground diesel waste handling equipment.

Attachment A of the Settlement Agreement requires the Respondents to “Provide a work plan to complete and submit the modifications to the Permit” to add WP 12-FP0060 *Semi-Annual Inspection of Equipment: Automatic Fire Suppression and Fire Detection Systems* to procedures in Table E-1. These actions have been completed with submission of a Class 1 Permit Modification Notification to the NMED on September 30, 2015. Because the action is completed, the PMN constitutes the work plan for this item. A copy of the PMN is included in **ATTACHMENT 2**.

1.2.9 Violation 1, Count 9

1.2.9.1 Overview

Count 9 is with regard to large quantities of material staged throughout the mine negatively impacting worker egress. The Respondents have improved

housekeeping since the underground events. A large forklift that was abandoned in place during the events and was blocking a drift has been repaired and moved to ensure safe access/egress in drift. The Safety organization has been instrumental in removal of unnecessary combustible materials stored throughout the underground. Combustible loadings are managed through a procedure. The plan is to assure good housekeeping as a continuous process so that egress is maintained.

Under the current Model Work Order, personnel entering the underground are required to have a pre-job briefing that includes housekeeping and egress. Currently pre-job briefings are provided twice per week. This work order is being converted into a procedure which will specify the frequency and content for briefings. Personnel are made aware of the controls placed on combustible loading in the underground by posting areas with signs on boundaries and inside the combustible loading control zones.

1.2.9.2 Violation 1, Count 9 Documentation to Provide as Evidence of Completion

Attachment A of the Settlement Agreement requires the Respondents to “Describe the training related to managing combustible loading in the underground.” This description is provided as **ATTACHMENT 14**.

Attachment A of the Settlement Agreement requires the Respondents to “and provide” the following documents:

- WP 12-FP3003 *Combustible Loading Controls for the Waste Handling Building and Underground*. (**ATTACHMENT 15**)
- MWO00534 *Underground Entry/Exit*. (**ATTACHMENT 16**)

1.2.10 Violation 1, Count 10

1.2.10.1 Overview

Count 10 regards AIB findings that numerous components of the mine ventilation system being out-of-service or impaired for an extended period of time. These components were identified in Count 6 above.

1.2.10.2 Violation 1, Count 10 Documentation to Provide as Evidence of Completion

With regard to deliverable items for Count 10, Attachment A of the Settlement Agreement states “None identified. Improvements will be obvious by inspection.”

1.2.11 Violation 1, Count 11

1.2.11.1 Overview

Count 11 regards AIB findings concerning impaired alarm systems including the following:

- Area 451 CMR Fire Alarm Panel. (The Fire Panel was repaired on July 2, 2013 and the impairment was cleared by the Central Monitoring Room Operator (CMRO) June 19, 2014.)
- Fire Panel 452-FP-031. (This Fire Panel was re-programmed by Engineering and the work was completed on June 27, 2014.)
- Gate House fire panel light. (This Fire Panel was operational and tested satisfactory on July 29, 2014, as recorded by the CMRO.)

Fire Impairments and associated actions to resolve active impairments are now statused during the Plan of the Day with a goal to resolve within a 30-day period. Actions outside of the 30-day window have visibility to ensure resolution in an expedited manner and as a priority.

1.2.11.2 Violation 1, Count 11 Documentation to Provide as Evidence of Completion

Attachment A of the Settlement Agreement requires the Respondents to “Provide Action Request (AR) closure documentation.” The Respondents have attached corrective action documentation for this item as **ATTACHMENTS 17, 18, AND 19.**

1.2.12 Violation 1, Count 12

1.2.12.1 Overview

Count 12 concerns out of service water hydrants. The status of these hydrants is as follows:

- Hydrant #23 broken valve stem was replaced and the work was completed on October 28, 2014 system restored.
- Hydrant #3 completed flow test on May 24, 2014 as satisfactory and the impairment removed on May 29, 2014 by the CMRO.
- Fire Water PIV #FW-Y-PIV-27 and Hydrant #5 were bench tested and were determined to be satisfactory. This work was completed on August 11, 2014.
- Fire Water PIV #FW-Y-PIV-21 was repaired on August 5, 2014.

Fire Impairments and associated actions to resolve active impairments are now statused during the Plan of the Day with a goal to resolve within a 30-day period. Actions outside of the 30-day window have visibility to ensure resolution in an expedited manner and as a priority.

1.2.12.2 Violation 1, Count 11 Documentation to Provide as Evidence of Completion

Attachment A of the Settlement Agreement requires the Respondents to “Provide AR closure documentation.” The Respondents have attached corrective action documentation for these items as **ATTACHMENT 20, 21, 22, and 23.**

2. VIOLATION 2

Violation 2 is stated in Paragraph 107 of ACO HWB-14-21 (CO) as follows:

107. The Respondents' failure to submit a written notice concerning the fire within five (5) calendar days of the time the Respondents became aware of the circumstances is a violation of Permit Conditions: 1.7.13.3, *Written Notice*, referencing 20.4.1.900 NMAC, incorporating 40 CFR § 270.30(1)(6)(iii); and 1.7.13.2, *Description of Occurrence*, referencing 20.4.1.900 NMAC, incorporating 40 C.F.R. § 270.30(1)(6)(ii).

2.1 Violation 2 Overall Progress and Plans

The violation addresses the need to timely notify the NMED of any event that may involve a fire, spill, explosion, or release, or the potential of such events that may threaten human health even if such events do not represent non compliances or involve the implementation of the RCRA Contingency Plan (or represent events that are otherwise reportable to the NMED in accordance with the Permit).

The Respondents will prepare a procedure that assures that notifications are made to NMED regarding events and incidents that otherwise do not trigger Permit reporting and will provide the 5-day written notice if requested by the NMED at the time the notification is made

2.2 Specific Actions Required by Attachment A to Address the Counts in Violation 2

Attachment A of the Settlement Agreement refers to Violations 8 and 9 for documentation of completion for this violation.

3. VIOLATION 3

Violation 3 is stated in Paragraph 108 of ACO HWB-14-21 (CO) as follows:

108. The Respondents' failure to conduct adequate personnel training is a violation of Permit Conditions: 2.8, *Personnel Training*; 2.8.2, *Personnel Training Requirements*, referencing 20.4.1.500 NMAC, incorporating 40 C.F.R. § 264.16; and F-1e, *Training for Emergency Response*.

3.1 Overall Progress and Plans:

Training and Qualification of workers is addressed in Section 14 of the CAP. The strategy for correcting training deficiencies identified by the AIB involves the development of a comprehensive Training and Qualifications Program for the WIPP facility to ensure workers are adequately prepared and qualified to perform work, in accordance with DOE Order 426.2, Personnel Selection, Training, Qualification, and Certification Requirements for DOE Nuclear Facilities.

3.2 Specific Actions Required By Attachment A To Address The Counts In Violation 3

This Violation had a single count with 7 contributing causes. It has been divided up into separate causes for this response.

3.2.1 Violation 3, Count 1a

3.2.1.1 Overview

The AIB Fire Report specified that “The training and qualification of the operator was inadequate to ensure proper response to a vehicle fire.” To meet this need, a live fire extinguisher training module will be developed and implemented. Once approved, the contents will be incorporated into SAF-501, Inexperienced Miner Training as a replacement for FWT-101 Fire Watch Training. It is anticipated that the new course will be approved by May 31, 2016. In addition, the NWP Training Department concluded that they will offer the course to a broader population of employees as an open registration course. As the result, NWP Technical Training committed to prepare a Work Plan for developing the training, incorporating it into the training program and identifying the appropriate refresher frequency. Once the training program changes are identified, the Respondents will prepare a Permit modification to make the training an enforceable condition of the Permit. This will be captured in the permit modification work plan.

3.2.1.2 Violation 3, Count 1a Documentation to Provide as Evidence of Completion

Attachment A of the Settlement Agreement states that “An example of live fire training is included in FWT-101 *Fire Watch Training*. This training is required for underground access for personnel who have not received SAF-501 *Inexperienced Miner Training*.” Furthermore, the Respondents are to “Provide FWT-101 *Fire Watch Training*.” This training course outline is included as **ATTACHMENT 24**.

Attachment A of the Settlement Agreement requires the Respondents to “Provide a work plan to develop and submit live fire training that includes an appropriate refresher frequency.” This work plan is included as **ATTACHMENT 25**.

Attachment A of the Settlement Agreement requires the Respondents to “Provide a work plan to complete and submit the modifications to the Permit.” This work plan is included as **ATTACHMENT 26**.

3.2.2 Violation 3, Count 1b

3.2.2.1 Overview

The AIB Fire Report discussed examples of inadequate training for the proper response to a vehicle fire: “workers were unable to don personal protective equipment”. In order to prevent recurrence of this, demonstrating donning self-rescuers has been integrated into the drill and exercise program and includes specific objectives for underground workers to physically don self-rescuers based on a random selection by controllers.

3.2.2.2 Violation 3, Count 1b Documentation to Provide as Evidence of Completion

Attachment A of the Settlement Agreement states that the Respondents are to “Provide description of revised training and summarize number of times the training

has been provided and number of personnel trained in the last 12 months.” This information is included as **ATTACHMENT 27**.

3.2.3 Violation 3, Count 1c

3.2.3.1 Overview

The AIB noted in their Fire Report that fully integrated emergency exercises had not been conducted. The Respondents developed a comprehensive Drill and Exercise Program (no-notice, scheduled, Full Scale, etc.) and have institutionalized this program into WIPP facility processes to include drills and exercises with offsite agency partners. A Full Scale Exercise was conducted on December 10, 2014, which included local, State, and federal participation.

3.2.3.2 Violation 3, Count 1c Documentation to Provide as Evidence of Completion

Attachment A of the Settlement Agreement requires the Respondents to “Provide the following documents:”

- 12-9, *WIPP Emergency Management Plan*. (**ATTACHMENT 6**)
- 12-ER.12, *WIPP Abnormal Condition Drill Program (New)*. (**ATTACHMENT 28**)
- 12-ER.13, *WIPP Drills and Exercises (New)*. (**ATTACHMENT 29**)
- 12-ER3006, *Abnormal Condition Drills (New)*. (**ATTACHMENT 30**)
- WIPP Three-Year Drill and Exercise Program FY 2015 – 2017. (**ATTACHMENT 10**)

3.2.4 Violation 3, Count 1d

3.2.4.1 Overview

The AIB also noted that individuals identified as coordinating the WIPP facility response to fires had not received Incident Command System training. This has been addressed by conducting ICS-300/400 Courses and Workshops.

3.2.4.2 Violation 3, Count 1d Documentation to Provide as Evidence of Completion

Attachment A of the Settlement Agreement requires the Respondents are to “Provide the following documents:”

- 12-9, *WIPP Emergency Management Plan, Support Annex I - Incident Command System*. (**ATTACHMENT 6**)
- 12-ER4922, *Incident Command System (New)*. (**ATTACHMENT 31**)
- 12-ER4923, *Emergency Operations Center Personnel Selection and Qualification (New)*. (**ATTACHMENT 32**)

3.2.5 Violation 3, Count 1e

3.2.5.1 Overview

The AIB report noted that the individual operating the salt haul truck had not received hands-on training in the use of portable fire extinguishers. To meet this need, a live fire extinguisher training module will be developed and implemented. Once approved, the contents will be incorporated into SAF-501, Inexperienced Miner Training as a replacement for FWT-101 *Fire Watch Training*. It is anticipated that the new course will be approved by May 31, 2016. In addition, the NWP Training Department concluded that they will offer the course to a broader population of employees as an open registration course. As the result, NWP Training Department committed to prepare a Work Plan for developing the training, incorporating it into the training program and identifying the appropriate refresher frequency. Once the training program changes are identified, the Respondents will prepare a Permit modification to make the training an enforceable condition of the Permit. This will be captured in the permit modification work plan.

3.2.5.2 Violation 3, Count 1e Documentation to Provide as Evidence of Completion

Attachment A of the Settlement Agreement states that “An example of live fire training is included in FWT-101 *Fire Watch Training*. This training is required for underground access for personnel who have not received SAF-501 *Inexperienced Miner Training*.” Furthermore, the Respondents are to “Provide FWT-101 *Fire Watch Training*.” This training course outline is included as **ATTACHMENT 24**.

Attachment A of the Settlement Agreement requires the Respondents to “Provide a work plan to develop and submit live fire training that includes an appropriate refresher frequency.” This work plan is included as **ATTACHMENT 25**.

Attachment A of the Settlement Agreement requires the Respondents to “Provide a work plan to complete and submit the modifications to the Permit.” This work plan is included as **ATTACHMENT 26**.

3.2.6 Violation 3, Count 1f

3.2.6.1 Overview

The AIB Fire Report concluded that Facility personnel did not fully follow the procedures for response to a fire in the underground due in part to “the lack of effective drills and training.” The Respondents have developed a comprehensive Drill and Exercise Program (no-notice, scheduled, Full Scale, etc.) and have institutionalized this program into WIPP facility processes to include drills and exercises with offsite agency partners. A Full Scale Exercise was conducted on September 16, 2015, which included local, State, and federal participation.

3.2.6.2 Violation 3, Count 1f Documentation to Provide as Evidence of Completion

Attachment A of the Settlement Agreement requires the Respondents are to “Provide the following documents:”

- 12-ER.12, *WIPP Abnormal Condition Drill Program* (New). (**ATTACHMENT 28**)
- 12-ER.13, *WIPP Drills and Exercises* (New). (**ATTACHMENT 29**)
- 12-ER3006, *Abnormal Condition Drills* (New). (**ATTACHMENT 30**)
- WIPP Three-Year Drill and Exercise Program FY 2015 - 2017. (**ATTACHMENT 10**)

3.2.7 Violation 3, Count 1g

3.2.7.1 Overview

Based on the AIB observations, the NMED alleged that facility personnel involved in the management of TRU mixed and hazardous waste were not trained in procedures relevant to the position in which they were employed and in a manner to perform their duties in a way that ensured the Facility’s compliance. No specific TRU mixed and hazardous waste management training has been identified by the AIB, however personnel who are trained for hazardous waste management will benefit from enhanced training and drills described above.

3.2.7.2 Violation 3, Count 1g Documentation to Provide as Evidence of Completion

Attachment A of the Settlement Agreement notes “Training records and results are kept on file at the facility per the Permit” and “Refer to 3-year drill schedule (see Violation 3, Count 1c)”. The referenced three-year drill schedule is **ATTACHMENT 10**.

4. VIOLATION 4

Violation 4 is stated in Paragraph 109 of ACO HWB-14-21 (CO) as follows:

109. The Respondents’ failure to have an internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to Facility personnel is a violation of Permit Conditions: 2.10.1, *Required Equipment*; and 2.10.1.1, *Internal Communications*, referencing 20.4.1.500 NMAC, incorporating 40 C.F.R. § 264.32(a).

4.1 Violation 4 Overall Progress And Plans

The NMED alleged violations address the condition of the alarm and communication system based on observations made by the AIB. To mitigate the findings of the AIB, the corrective action strategy is to develop a comprehensive Maintenance Program that meets applicable regulatory requirements for the maintenance and reliable performance of structures,

systems and components that are part of the safety basis required by 10 CFR 830.202 and the Permit.

4.2 Specific Actions Required By Attachment A To Address The Counts In Violation 4

4.2.1 Violation 4, Count 1

4.2.1.1 Overview

Count 1 is with regard to the underground public address (PA) system. The Respondents have completed an evaluation of the PA system against the applicable requirements. The conclusion is that the system met the minimum satisfactory conditions. Two Action Requests were written to improve the communication in the underground. Timely Order has been issued to make PA announcements also over the Mine Phones.

Future plans include improving the Preventive Maintenance Procedure by using a dB meter to assess effectiveness; reevaluating the inspection procedure to record additional information; and develop work packages to address the action requests.

Inspection and repair of underground notification equipment occurs with entry into each work zone in the underground.

4.2.1.2 Violation 4, Count 1 Documentation to Provide as Evidence of Completion

Attachment A of the Settlement Agreement requires the Respondents to "Provide March 4, 2015 map of the location of Permit required equipment." This map is included as **ATTACHMENT 33**.

4.2.2 Violation 4, Count 2

4.2.2.1 Overview

Count 2 is with regard to evacuation alarms. The Respondents have completed an evaluation of the PA system against the applicable requirements. The conclusion is that the system met the minimum satisfactory conditions. Two Action Requests were written to improve the communication in the underground. The Respondents now make PA announcements also over the Mine Phones.

Future plans include improving the Preventive Maintenance Procedure by using a dB meter to assess effectiveness; reevaluating the inspection procedure to record additional information; and develop work packages to address the action requests.

4.2.2.2 Violation 4, Count 2 Documentation to Provide as Evidence of Completion

Attachment A of the Settlement Agreement requires the Respondents to "Provide March 4, 2015 map of the location of Permit required equipment." This map is included as **ATTACHMENT 33**.

4.2.3 Violation 4, Counts 3 to 14

4.2.3.1 Overview

Counts 3 to 14 are with regard to inoperable mine phones which have been repaired/replaced to better ensure viable communications. Mine phone locations as of March 2015 have been depicted on a map for use by the NMED. As phones become accessible during recovery they are checked and batteries changed on the spot if needed. The phones in essential locations are working as required. The Respondents will continue to perform Permit required inspections of mine phones at essential locations. Inspections of phones at other locations are conducted by underground personnel when they are used. In addition, Model Work Order MWO00534 (**ATTACHMENT 16**) Step 2.2.17 states that a portable mine phone shall be provided for personnel working in areas of the mine where a fixed phone is not readily available.

4.2.3.2 Violation 4, Counts 3 to 14 Documentation to Provide as Evidence of Completion

Attachment A of the Settlement Agreement requires "Inspection records and results are kept on file at the facility per the Permit" and the Respondents are to "Provide example procedure (WP 05-WH1810, *Underground Transuranic Mixed Waste Disposal Area Inspections*) implementing daily inspection of mine pager phones in areas where they are being used; Provide a work plan to complete and submit the modifications to the Permit; Provide a work plan to complete and submit WP 04-PC3018, *Quarterly Essential Plant Communication Testing*."

There are no submittals associated with the records and results which are being kept on file at the facility. The Respondents have attached the following:

- Example procedure (WP 05-WH1810, *Underground Transuranic Mixed Waste Disposal Area Inspections*) implementing daily inspection of mine pager phones in areas where they are being used is provided as **ATTACHMENT 11**.
- A Class 1 Permit Modification Notification incorporating the inspection of mine-pager phones into the Permit was submitted to the NMED on September 30, 2015. Because the action is completed, the PMN constitutes the work plan for this item. A copy of the PMN is included in **ATTACHMENT 2**.
- Procedure WP 04-PC3018 *Quarterly Essential Plant Communication Testing* is completed and attached as **ATTACHMENT 12**. Because the action is completed, the procedure constitutes the work plan for this item.

5. VIOLATION 5

Violation 5 is stated in Paragraph 110 of ACO HWB-14-21 (CO) as follows:

110. The Respondents' failure to test and maintain the equipment specified in Permit Condition 2.10.1, as necessary, to assure its proper operation in time of emergency, as specified in Permit Attachment E, is a violation of Permit Conditions: 2.10.2, *Testing and Maintenance of*

Equipment; and E-1a, *General Inspection Requirements*, referencing 20.4.1.500 NMAC, incorporating 40 C.F.R. § 264.33.

5.1 Violation 5 Overall Progress and Plans:

The NMED alleged violations address the condition of the various items of equipment based on observations made by the AIB. The Respondents corrective action strategy is to develop a comprehensive Maintenance Program that meets applicable regulatory requirements for the maintenance and reliable performance of structures, systems and components that are part of the safety basis required by 10 CFR 830.202 and the Permit.

5.2 Specific Actions Required by Attachment A to Address the Counts in Violation 5

5.2.1 Violation 5, Count 1

5.2.1.1 Overview

Count 1 addresses the radiological monitoring device known as CAM-152 which has only been operational a total of 29 days in the last 22 months. Immediately following the fire, none of the CAMs were fully functional, due to soot on the optical sensors. During the time when the CAMs were not functional, portable CAMs were used while personnel were underground. During times when no one was underground, the ventilation was operated in filtration mode to mitigate any unobserved event. None of the four RADOS CAMs has been put back in service since the event. Portable CAMs are currently in use. The near-term plan is to continue to use portable CAMs with local alarms while in filtration mode. In addition, CAMs have been placed near the Panel 6 and Panel 7, Room 7 closures.

5.2.1.2 Violation 5, Count 1 Documentation to Provide as Evidence of Completion

With regard to deliverable items for Count 1, Attachment A of the Settlement Agreement states “None identified. Improvements will be obvious by inspection.”

5.2.2 Violation 5, Counts 2 to 4

5.2.2.1 Overview

Counts 2 to 4 identify three fire panels as being impaired. The status is as follows:

- Area 451 CMR Fire Alarm Panel. This impairment was cleared June 9, 2014.
- Fire Panel 452-FP-031. This Fire Panel was re-programmed by Engineering and the impairment was cleared on June 27, 2014.
- Gate House fire panel light. This impairment was cleared July 29, 2014.

Fire Impairments and associated actions to resolve active impairments are now statused during the Plan of the Day with a goal to resolve within a 30-day period. Actions outside of the 30-day window have visibility to ensure resolution in an expedited manner and as a priority.

These items were discussed with Violation 1, Count 11

5.2.2.2 Violation 5, Counts 2 to 4 Documentation to Provide as Evidence of Completion

With regard to deliverable items for Counts 2 to 4, Attachment A of the Settlement Agreement states “None identified. Improvements will be obvious by inspection.”

5.2.3 Violation 5, Counts 5 to 9

5.2.3.1 Overview

Counts 5 to 9 concerns out of service water hydrants. The status of these hydrants is as follows:

- Hydrant #23 broken valve stem was replaced and the work was completed on October 28, 2014 system restored.
- Hydrant #3 completed flow test on May 24, 2014 as satisfactory and the impairment removed on May 29, 2014 by the CMRO.
- Fire Water PIV #FW-Y-PIV-27 and Hydrant #5 were bench tested and were determined to be satisfactory. This work was completed on August 11, 2014.
- Fire Water PIV #FW-Y-PIV-21 was repaired on August 5, 2014.

Fire Impairments and associated actions to resolve active impairments are now statused during the Plan of the Day with a goal to resolve within a 30-day period. Actions outside of the 30-day window have visibility to ensure resolution in an expedited manner and as a priority.

These items were discussed with Violation 1, Count 12.

5.2.3.2 Violation 5, Counts 5 to 9 Documentation to Provide as Evidence of Completion

With regard to deliverable items for Counts 5 to 9, Attachment A of the Settlement Agreement states “None identified. Improvements will be obvious by inspection.” Attachment A does require the Respondents to “Provide AR closure documentation”. The Respondents have attached AR closure documentation for these items as **ATTACHMENTS 20, 21, 22, and 23.**

5.2.4 Violation 5, Count 10

5.2.4.1 Overview

Count 10 identifies a fire access panel (FAP) pull station that was impaired. The status of this item is as follows:

- Auxiliary Warehouse FAP Broken Pull Station Hand switch replaced on May 16, 2014.

In order to prevent recurrence of fire equipment being impaired for long periods of time, fire Impairments and associated actions to resolve active impairments are now statused during the Plan of the Day with a goal to resolve then within a 30-day Period. Actions outside of the 30-day window have greater visibility to ensure resolution in an expedited manner and as a priority.

5.2.4.2 Violation 5, Count 10 Documentation to Provide as Evidence of Completion

With regard to deliverable items, Attachment A of the Settlement Agreement states “None identified. Improvements will be obvious by inspection.” Attachment A does require the Respondents to “Provide AR closure documentation” which is included as **ATTACHMENT 34**.

5.2.5 Violation 5, Counts 11 to 43

5.2.5.1 Overview

Counts 11 to 43 identify 33 Emergency Lights that were not working. The status of these lights is as follows:

- Emergency lights were replaced by the end of 2014.

Emergency Lights now prioritized as a Priority 3A (life safety code related items) with high weighting for life safety issues. A Work Control Document was created for repetitive use. A dedicated work planner was assigned to watch over the action requests. Maintenance assigned a dedicated Field Work Supervisor to oversee the replacement effort. This process will ensure continued focus on field execution.

5.2.5.2 Violation 5, Counts 11 to 43 Documentation to Provide as Evidence of Completion

Attachment A of the Settlement Agreement requires “Records of these activities will be kept on file at the facility” and the Respondents are to “Provide AR closure documentation.” The Respondents have attached corrective action documentation for this item which results from a repetitive work order for inspecting and repairing emergency lighting as **ATTACHMENT 35**.

6. VIOLATION 6

Violation 6 is stated in Paragraph 111 of ACO HWB-14-21 (CO) as follows:

111. The Respondents' failure to immediately implement the Contingency Plan found in Permit Attachment D when there was a fire that threatened human health or the environment is a violation of Permit Conditions: 2.12.1, *Implementation of Contingency Plan*, referencing 20.4.1.500 NMAC, incorporating 40 C.F.R. § 264.5 I(b); D-3, *Implementation*, referencing 20.4.1.500 NMAC, incorporating 40 C.F.R. § 264.51(b); and D-4a(1), *Initial Emergency Response and Alerting the RCRA Emergency Coordinator*

6.1 Violation 6 Overall Progress and Plans:

There is confusion regarding whether or not the RCRA Contingency Plan needed to be implemented due to the haul truck fire. The criteria in the Permit for implementation were not met, however, it is recognized that an underground fire represents a significant event. The CAP for Emergency Management will result in the implementation of a comprehensive Emergency Management System that: (1) meets Federal, State, and local requirements; (2) protects the health and safety of workers, the public, property, and the environment; and (3) minimizes event consequences through timely and effective emergency response actions. This, along with actions discussed in conjunction with Violation 6 will minimize such confusion in the future.

This violation had a single count related to the Respondents failure to implement the Contingency Plan. The following actions have been taken to address this:

- Procedure WP 12-ER4920, *RCRA Contingency Plan Implementation* has been revised.
- Revised training SAF-645, *RCRA Emergency Coordinator* (WIPP Contingency Plan Procedure) has been developed.

Further revisions to the appropriate procedures to implement RCRA Contingency Plan are discussed with Violation 10.

6.2 Specific Actions Required by Attachment A to Address the Counts in Violation 6

Attachment A of the Settlement Agreement requires the Respondents to "Provide the following document: Procedure WP 12-4920 *RCRA Contingency Plan Implementation*." This document is included in **ATTACHMENT 7**.

7. VIOLATION 7

Violation 7 is stated in Paragraph 112 of ACO HWB-14-21 (CO) as follows:

112. The Respondents' failure to design, maintain, and operate the Facility in a manner to minimize the possibility of a release to the atmosphere of TRU mixed waste or mixed waste constituents and to prevent undue exposure of personnel to hazardous waste is a violation of Permit Conditions: 2.1, *Design and Operation of Facility*, referencing 20.4.1.500 NMAC, incorporating 40 CFR § 264.31; and 2.11, *Hazards Prevention*, referencing 20.4.1.900 NMAC, incorporating 40 CFR § 270.14(b)(8).

7.1 Violation 7 Overall Progress and Plans

The NMED alleged violations address the condition of the various items of equipment based on observations made by the AIB following the radiological release event. To mitigate the findings of the AIB, the Respondents' corrective action strategy is to develop a comprehensive Maintenance Program that meets applicable regulatory requirements for the maintenance and reliable performance of structures, systems and components that are part of the safety basis required by 10 CFR 830.202 and the Permit.

7.2 Specific Actions Required by Attachment A to Address the Counts in Violation 7

7.2.1 Violation 7, Count 1

7.2.1.1 Overview

Count 1 involves radiological detection equipment referred to continuous air monitors (CAMs). The status of the CAMs is as follows:

Immediately following the haul-truck fire, none of the CAMs were fully functional, due to soot on the optical sensors. During the time when the CAMs were not functional, portable CAMs were used while personnel were underground. During times when no one was underground, the ventilation was operated in filtration mode, to mitigate any unobserved event. Portable CAMs are currently in use. The near-term plan is to continue to use portable CAMs with local alarms while in filtration mode. In addition, CAMs have been placed near the Panel 6 and Panel 7, Room 7 closures.

7.2.1.2 Violation 7, Count 1 Documentation to Provide as Evidence of Completion

With regard to deliverable items, Attachment A of the Settlement Agreement states “None identified. Improvements will be obvious by inspection.”

7.2.2 Violation 7, Count 2

7.2.2.1 Overview

Count 2 is with regard to the Ventilation dampers on exhaust fans. Maintenance needs for these dampers were identified during routine testing of the dampers. Such testing is an integral part of maintenance and it ensures equipment and systems are going to operate as planned when needed. Finding maintenance needs during testing leads to their timely repair. It should be noted that on February 14, 2014 the system automatically shifted to filtration as designed.

Current procedures mandate remaining in filtration mode.

7.2.2.2 Violation 7, Count 2 Documentation to Provide as Evidence of Completion

With regard to completion documentation, Attachment A of the Settlement Agreement states: “None”, however, the Respondents are to “Provide a work plan to complete and submit the modifications to the Permit” to incorporate the Interim Ventilation System (IVS) and Supplemental Ventilation System (SVS) upgrades by updating the descriptive text regarding ventilation. This action has been partially completed with the submission of a Class 1 PMN to the NMED on February 17, 2016. This Class 1 PMN incorporates the description of the IVS into the Permit. Because this part of the action is completed, the PMN constitutes the work plan. A copy of the PMN is included in **ATTACHMENT 36a**. The work plan for the SVS is included as **ATTACHMENT 36b**.

7.2.3 Violation 7, Count 3a

7.2.3.1 Overview

Count 3a is related to the conditions of several ventilation fans. The status is as follows:

- Vibration testing and analysis has been performed by engineers from the Savannah River Site. Vibrations have been reduced.
- The referenced latch is still in place.
- Continue rotating 860 fans to facilitate PM schedule. Fan rotation is on a monthly schedule.

7.2.3.2 Violation 7, Count 3a Documentation to Provide as Evidence of Completion

With regard to completion documentation, Attachment A of the Settlement Agreement states: "None".

7.2.4 Violation 7, Count 3b

7.2.4.1 Overview

Count 3b is related to inspections. The status is as follows:

- Prior to the event, the inside of the exhaust ducting was remotely inspected on a periodicity of every 6 months, and the exhaust shaft was inspected every quarter. The Respondents are procuring new equipment for performing the shaft inspections.
- Respondents are re-establishing these inspections, taking into account the additional hazards from the radiological release event.
- It should be noted that the Exhaust Shaft no longer has any active utilities

When these inspections resume, they will be reported in the monthly report, required under Administrative Order 2, May 12, 2014.

According to the Interim Performance Measurement Baseline narrative, the third phase of planned ventilation upgrades consists of a new permanent ventilation system which includes; the construction of a supporting exhaust shaft and drifts; and the design and installation of above ground filtration infrastructure and upgrades to filtration and bulkhead capabilities in the underground.

7.2.4.2 Violation 7, Count 3b Documentation to Provide as Evidence of Completion

Attachment A of the Settlement Agreement states that "Permit required inspections will be reported in the report required by the May 12, 2014 NMED Administrative Order." The monthly report for November 2015 (submitted in December 2015) is included as **ATTACHMENT 37** showing the status of these inspections.

7.2.5 Violation 7, Count 4a

7.2.5.1 Overview

Count 4a regards an airflow sensor in the underground that the AIB identified as nonfunctional. These underground airflow sensors are not critical equipment. Instead they are used by the Engineering group for information only. The airflow sensors have no impact on the operation of the Ventilation system, and are therefore not a high priority when a discovery is made that indicates one is not functioning properly. This item has been addressed, there are no air flow sensors in the underground indicating a level of flow that is unexpected.

7.2.5.2 Violation 7, Count 4a Documentation to Provide as Evidence of Completion

With regard to completion documentation, Attachment A of the Settlement Agreement states “None. Improvements will be obvious by inspection.”

7.2.6 Violation 7, Count 4b

7.2.6.1 Overview

Count 4b regards an airflow sensor for one of the 700 fans. This item was corrected under the normal maintenance program. Currently the 700 fans are not being used in filtration mode.

7.2.6.2 Violation 7, Count 4b Documentation to Provide as Evidence of Completion

With regard to completion documentation, Attachment A of the Settlement Agreement states “None. Improvements will be obvious by inspection.”

7.2.7 Violation 7, Count 5a

7.2.7.1 Overview

Count 5a was with regard to the primary system status display on the Central Monitoring System (CMS). This display in the Central Monitoring Room (CMR) is an informational aid for the CMR operators. Physical rounds are made each shift as a verification of fan operation. CMS software is being modified and upgraded based on operational needs and priorities. This is an incorrect graphic issue.

7.2.7.2 Violation 7, Count 5a Documentation to Provide as Evidence of Completion

With regard to completion documentation, Attachment A of the Settlement Agreement states “None. Improvements will be obvious by inspection.”

7.2.8 Violation 7, Count 5b

7.2.8.1 Overview

Count 5b was with regard to the primary system status display on the CMS. The graphic depicting the extent of mining in the underground had not yet been updated on the display. This update in CMS is not a high priority as mining has been halted and the normal ventilation paths are being managed on a case by case basis to support recovery activities including operation of diesel fueled equipment. The CMS system itself is going through an upgrade to address operational needs related to the recovery.

7.2.8.2 Violation 7, Count 5b Documentation to Provide as Evidence of Completion

With regard to completion documentation, Attachment A of the Settlement Agreement states "None. Improvements will be obvious by inspection."

7.2.9 Violation 7, Count 5c

7.2.9.1 Overview

Count 5c was with regard to the electrical distribution system breakers found out of position. The reason the plant sub was in this configuration was because circuit breaker (CB) 13 could not be opened remotely from the CMR. The CMS is capable of operating the plant sub breakers remotely, but there is a problem with the CMS. The CMR is able to open CB 12 remotely and that is the reason for the current configuration. The tie feed configuration does not affect the ability to operate any plant equipment.

There is a work control document in works to test CB13 remote operation. When the test is completed satisfactorily CB 13 will be closed and the tie feed broken to restore split buss operation. The plan is to perform this work during an appropriate electrical outage.

7.2.9.2 Violation 7, Count 5c Documentation to Provide as Evidence of Completion

With regard to completion documentation, Attachment A of the Settlement Agreement states "None. Improvements will be obvious by inspection."

8. VIOLATION 8

Violation 8 is stated in Paragraph 113 of ACO HWB-14-21 (CO) as follows:

113. The Respondents' failure to provide oral notification to NMED within 24 hours of becoming aware of the Release is a violation of Permit Conditions: 1.7.13.1.ii, *Oral Reporting*, referencing 20.4.1.900 NMAC, incorporating 40 CFR § 270.30(1)(6)(i); and 1.7.13.2, *Description of Occurrence*, referencing 20.4.1.900 NMAC, incorporating 40 C.F.R. § 270.30(1)(6)(ii).

8.1 Violation 8 Overall Progress and Plans

The violation addresses the need to timely notify the NMED of any event that may involve a fire, spill, explosion, or release, or the potential of such events that may threaten human health even if such events do not represent non-compliances or involve the implementation of the RCRA Contingency Plan (or represent events that are otherwise reportable to the NMED in accordance with the Permit).

The Respondents have prepared a procedure that assures that timely notifications are made to NMED regarding events and incidents whether or not they trigger Permit reporting.

8.2 Specific Actions Required by Attachment A to Address the Counts in Violation 8

Attachment A of the Settlement Agreement requires the Respondents to "Provide the following document: WP 02-PC-3005 *Permit Reporting 24-Hour, 5-Day Follow-Up, Other Noncompliances*." This is included as **ATTACHMENT 38**.

9. VIOLATION 9

Violation 9 is stated in Paragraph 114 of ACO HWB-14-21 (CO) as follows:

114. The Respondents' failure to submit a written notice regarding the Release within five (5) calendar days of the time the Respondents became aware of the circumstances is a violation of Permit Conditions: 1.7.13.3, *Written Notice*, referencing 20.4.1.900 NMAC, incorporating 40 C.F.R. § 270.30(1)(6)(iii); and 1.7.13.2, *Description of Occurrence*, referencing 20.4.1.900 NMAC, incorporating 40 C.F.R. § 270.30(1)(6)(ii).

9.1 Violation 9 Overall Progress and Plans

The violation addresses the need to timely notify the NMED of any event that may involve a fire, spill, explosion, or release, or the potential of such events that may threaten human health even if such events do not represent non-compliances or involve the implementation of the RCRA Contingency Plan (or represent events that are otherwise reportable to the NMED in accordance with the Permit).

The Respondents have prepared a procedure that assures that timely notifications are made to NMED regarding events and incidents whether or not they trigger Permit reporting.

9.2 Specific Actions Required by Attachment A to Address the Counts in Violation 9

Attachment A of the Settlement Agreement requires the Respondents to "Provide of the following document: WP 02-PC-3005 *Permit Reporting 24-Hour, 5-Day Follow-Up, Other Noncompliances*." This is included as **ATTACHMENT 38**.

10. VIOLATION 10

Violation 10 is stated in Paragraph 115 of ACO HWB-14-21 (CO) as follows:

115. The Respondents' failure to immediately implement the Contingency Plan found in Permit Attachment D when there was a release of TRU mixed or hazardous waste or hazardous waste constituents which threatened human health or the environment, is a violation of Permit

Conditions: 2.12.1, *Implementation of Contingency Plan*, referencing 20.4.1.500 NMAC, incorporating 40 C.F.R. § 264.51 (b); D-3, *Implementation*, referencing 20.4.1.500 NMAC, incorporating 40 C.F.R. § 264.51(b); and D-4a(1), *Initial Emergency Response and Alerting the RCRA Emergency Coordinator*.

10.1 Violation 10 Overall Progress and Plans

There is confusion regarding whether or not the RCRA Contingency Plan needed to be implemented due to the release event. The RCRA Emergency coordinator could not determine if the criteria in the Permit for implementation were met since it was not possible to observe the event in the underground, however, it is recognized that a radiological release represents a significant event. The CAP for Emergency Management will result in the implementation of a comprehensive Emergency Management System that: (1) meets Federal, State, and local requirements; (2) protects the health and safety of workers, the public, property, and the environment; and (3) minimizes event consequences through timely and effective emergency response actions. This, along with actions discussed in conjunction with Violation 6 will minimize such confusion in the future.

The actions that have been taken with regard to eliminating the confusion regarding implementation of the RCRA Contingency Plan includes revising existing procedures, issuing new procedures and providing revised training.

Further revisions to the appropriate procedures to implement RCRA Contingency Plan immediately for a spill, fire, explosion, or release, then exit if the event does not pose a threat to human health or the environment outside the facility will be prepared as needed.

10.2 Specific Actions Required by Attachment A to Address the Counts in Violation 10

Attachment A of the Settlement Agreement requires the Respondents to "Provide the revised RCRA Contingency Plan implementing procedures:

- WP 12-ER4911 *Underground Fire Response*.
- WP 12-ER4925 *CMR Incident Recognition and Initial Response*.
- WP 12-ER4926 *CMR Expanded Staffing Operations*.
- WP 12-ER4920 *RCRA Contingency Plan Implementation*.

These are attached as follows:

- WP 12-ER4911 *Underground Fire Response*. (**ATTACHMENT 9**)
- WP 12-ER4925 *CMR Incident Recognition and Initial Response*. (**ATTACHMENT 39**)
- WP 12-ER4926 *CMR Expanded Staffing Operations*. (**ATTACHMENT 40**)
- WP 12-ER4920 *RCRA Contingency Plan Implementation*. (**ATTACHMENT 7**)

Attachment A of the Settlement Agreement also requires the Respondents to "Provide a work plan to complete and submit the modifications to the Permit." This work plan is **ATTACHMENT 41**.

11. VIOLATION 11

Violation 11 is stated in Paragraph 116 of ACO HWB-14-21 (CO) as follows:

116. The Respondents' acceptance, management, storage, and disposal of 508 containers of ignitable wastes is a violation of Permit Conditions: Attachment B, *(Part A Application)*; 2.9, *General Requirements for Handling Ignitable, Corrosive, Reactive, or Incompatible Wastes*, referencing 20.4.1.200 NMAC, incorporating 40 C.F.R. §§ 261.21 and 261.22, and referencing 20.4.1.500 NMAC, incorporating 40 C.F.R. Part 264, Appendix V; 2.3.1, *Waste Analysis Plan*, referencing 20.4.1.500 NMAC, incorporating 40 C.F.R. § 264.13; 2.3.3, *Treatment, Storage, and Disposal Facility Waste Acceptance Criteria (TSDF-WAC)*; 2.3.3.7, *Ignitable, Corrosive, and Reactive Wastes*; 2.3.4, *Permitted TRU Mixed Wastes*; 3.2.1.3, *Hazardous Waste Numbers*; C-1b, *Waste Summary Category Groups and Hazardous Waste Accepted at the WIPP Facility*; and C-1c, *Waste Prohibited at the WIPP Facility*.

11.1 Violation 11 Overall Progress and Plans

The Respondents are committed to prevent a recurrence of the release event involving a container of waste that was unknowingly shipped to the WIPP facility with an ignitable waste. To this end, the Respondents have identified areas in the waste generation, packaging, treatment and handling processes where greater scrutiny is necessary for those waste streams that have the potential to exhibit characteristics that are prohibited by the Permit. The Respondents are presently revising the necessary program documents and preparing new documents to provide greater investigation of waste management practices at the generator site.

The following actions have been taken to prevent the shipment of prohibited waste to the WIPP facility:

- The Respondents suspended shipments of S-3000 waste from the Los Alamos National Laboratory (LANL).
- The Respondents suspended the Waste Stream Profile Form (WSPF) for the LA-MIN.02-V.001 waste stream.
- The Respondents suspended certification of S-3000 waste at LANL and waste processed at LANL Waste Characterization, Reduction, and Repackaging Facility (WCRRF).
- The CBFO issued a corrective action report (CAR) and NWP prepared a WIPP Form pursuant to Permit Attachment C4, Section C4-3g.
- The Respondents conducted extent of condition review at other TRU waste generator sites (Idaho National Laboratory (INL), Oak Ridge National Laboratory (ORNL), Argonne National Laboratory (ANL), and Savannah River Site (SRS)).

In addition, and to prevent recurrence, the Respondents have performed or are performing the following:

- The Respondents revised Procedure CCP-TP-005 which governs the collection of acceptable knowledge (AK) for waste stream characterization in accordance with Permit Attachment C4, *TRU Mixed Waste Characterization Using Acceptable Knowledge*.

- The Respondents have revised the Site Interface Agreements that allow access to the generator sites for characterization purposes. The revisions provide greater access to generator site programs and processes for the purposes of verifying procedures that result in the generation of AK information.
- The Respondents are considering how to expand the audit program to include generator site processes involved in the generation of waste potentially bound for the WIPP facility.
- The Respondents are considering holding a quarterly briefing with the NMED to provide a forecast of “problematic waste.”

11.2 Specific Actions Required by Attachment A to Address the Counts in Violation 11

Attachment A of the Settlement Agreement requires the Respondents to provide the following documentation regarding violation 11:

- CCP-TP-005, Rev 27 *CCP Acceptable Knowledge Documentation*. (**ATTACHMENT 42**).
- Revision to CBFO-MP-10.3 Rev 7 *Audits* to include expanded scope for certification /recertification audits. The Respondents have provided this procedure as **ATTACHMENT 43**.
- CCP-PO-012, Rev 16, *CCP/Los Alamos National Laboratory (LANL) Interface Document*. Because the action is completed, the document constitutes the work plan for this item. The Respondents have provided the document as **ATTACHMENT 46**.
- MP 10.10, Rev. 0 *Technical Review of TRU Waste Generator Site Processes* (New Procedure). The Respondents have provided this procedure as **ATTACHMENT 44**.
- Carlsbad Field Office will provide a memorandum to the LANL Carlsbad Difficult Waste Team defining their role in support of CBFO activities. The Respondents have provided the required memorandum as **ATTACHMENT 45**.

In addition, the Respondents are to “Provide a work plan to complete and submit the procedures and Interface Agreements.” Because the action is completed, the procedures and Interface Agreements constitute the work plan for this item. The procedures are listed separately above; the Interface Agreements (referred to as Interface Documents) are provided as **ATTACHMENT 46**.

12. VIOLATION 12

Violation 12 is stated in Paragraph 117 of ACO HWB-14-21 (CO) as follows:

117. The Respondents’ acceptance, management, storage, and disposal of 503 containers of incompatible wastes is a violation of Permit Conditions: 2.9, *General Requirements for Handling Ignitable, Corrosive, Reactive, or Incompatible Wastes*, referencing 20.4.1.200 NMAC, incorporating 40 C.F.R. §§ 261.21 and 261.22, and referencing 20.4.1.500 NMAC, incorporating 40 C.F.R. Part 264, Appendix V; 2.3.1, *Waste Analysis Plan*, referencing 20.4.1.500 NMAC, incorporating 40 C.F.R. § 264.13; 2.3.3, *Treatment, Storage, and Disposal Facility Waste*

Acceptance Criteria (TSDF-WAC); 2.3.3.4, Chemical Incompatibility; and C-1c, Waste Prohibited at the WIPP Facility.

12.1 Violation 12 Overall Progress and Plans

The Respondents are committed to prevent a recurrence of the release event involving a container of waste that was unknowingly shipped to the WIPP facility with an incompatible waste. To this end, the Respondents have identified areas in the waste generations, packaging, treatment and handling process where greater scrutiny is necessary for those waste streams that have the potential to exhibit characteristics that are prohibited by the Permit. The respondents are presently revising the necessary program documents and preparing new documents to provide greater investigation of waste management practices at the generator site.

The following actions have been taken to prevent the shipment of prohibited waste to the WIPP facility:

- The Respondents suspended shipments of S-3000 waste from LANL.
- The Respondents suspended the WSPF for the LA-MIN.02-V.001 waste stream.
- The Respondents suspended certification of S-3000 waste at LANL and waste processed at LANL WCRRF.
- The CBFO issued a CAR and NWP prepared a WIPP Form pursuant to Permit Attachment C4, Section C4-3g.
- The Respondents conducted extent of condition review at other TRU waste generator sites (INL, ORNL, ANL, and SRS).

In addition, and to prevent recurrence, the Respondents have performed or are performing the following:

- The Respondents revised Procedure CCP-TP-005 which governs the collection of AK for waste stream characterization in accordance with Permit Attachment C4 *TRU Mixed Waste Characterization Using Acceptable Knowledge*.
- The Respondents have revised the Site Interface Agreements that allow access to the generator sites for characterization purposes. The revisions provide greater access to generator site programs and processes for the purposes of verifying procedures that result in the generation of AK information.
- The Respondents are considering how to expand the audit program to include generator site processes involved in the generation of waste potentially bound for the WIPP facility.
- The Respondents are considering holding a quarterly briefing with the NMED to provide a forecast of “problematic waste”.

12.2 Specific Actions Required by Attachment A to Address the Counts in Violation 12

Attachment A of the Settlement Agreement requires the Respondents to provide the following documentation regarding violation 12:

- CCP-TP-005, Rev 27 *CCP Acceptable Knowledge Documentation*. (**ATTACHMENT 42**).
- Revision to CBFO-MP-10.3 Rev 7 *Audits* to include expanded scope for certification /recertification audits. The Respondents have provided this procedure as **ATTACHMENT 43**.
- CCP-PO-012, Rev 16, *CCP/Los Alamos National Laboratory (LANL) Interface Document*. Because the action is completed, the document constitutes the work plan for this item. The Respondents have provided the document as **ATTACHMENT 46**.
- MP 10.10, Rev. 0 *Technical Review of TRU Waste Generator Site Processes* (New Procedure). The Respondents have provided this procedure as **ATTACHMENT 44**.
- Carlsbad Field Office will provide a memorandum to the LANL Carlsbad Difficult Waste Team defining their role in support of CBFO activities. The Respondents have provided the required memorandum as **ATTACHMENT 45**.

In addition, the Respondents are to “Provide a work plan to complete and submit the procedures and Interface Agreements.” Because the action is completed, the procedures and Interface Agreements constitute the work plan for this item. The procedures are listed separately above; the Interface Agreements (referred to as Interface Documents) are provided as **ATTACHMENT 46**.

13. VIOLATION 13

Violation 13 is stated in Paragraph 118 of ACO HWB-14-21 (CO) as follows:

118. The Respondents’ failure to verify the completeness and accuracy of the Waste Stream Profile Form is a violation of Permit Condition C-5a(2), *Examination of the Waste Stream Profile Form and Container Data Checks*.

13.1 Violation 13 Overall Progress and Plans

The Respondents are committed to prevent a recurrence of the release event involving a container of waste that was unknowingly shipped to the WIPP facility with an ignitable waste. To this end, the Respondents have identified areas in the review of the WSPF that will provide a more in depth examination of the record for waste that are potentially problematic. The respondents are presently revising the necessary program documents to implement this approach.

In order to prevent recurrence, the Respondents have performed the following:

The Respondents revised the WSPF review program to:

- Clearly define potentially ignitable, corrosive and reactive waste.
- Require more thorough reviews of this type of waste.
- Determine if treatment, remediation or immobilization processes/procedures have been reviewed/verified.
- Review relevant documentation.

- Document reviews on completeness checklist.

13.2 Specific Actions Required by Attachment A to Address the Counts in Violation 13

Attachment A of the Settlement Agreement requires the Respondents to provide the following documentation regarding violation 13:

- Issue WP 08-NT.03, Rev 16 *Waste Stream Profile Form Review and Approval Program*. (**ATTACHMENT 47**)
- Issue WP 08-NT.1005, Rev. 0 *RCRA Review Criteria for Waste Stream Profile Forms*. (**ATTACHMENT 48**)

In addition, the Respondents are to “Provide a work plan to complete and submit the procedures.” Because the procedures are completed and attached, they constitute the work plan for this item.

ATTACHMENTS

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ATTACHMENT 1
LIST OF UNDERGROUND LIQUID FUELED VEHICLE INSPECTION
PROCEDURES

1 PAGE

ATTACHMENT 1
LIST OF UNDERGROUND LIQUID FUELED VEHICLE INSPECTION PROCEDURES

Underground Forklift PMs

PM052003¹
PM074027
PM074051
PM074079
PM074084
WP 12-FP0060
WP 12-FP0033

Underground Lube Truck PMs

PM074027
PM074073

Underground Bolter PMs

PM074027
PM074123
WP04-AU1031

Underground LHD PMs

PM074027
PM074081
WP04-AU1033

Underground Manlift PMs

PM074027
PM074072
PM074076
PM074082
PM074099
WP04-AU1032

Underground Tractor PMs

PM074027
PM074108
WP04-AU1034
WP04-AU1036

Underground Waste Handling Equipment PMs

PM074027
PM052001
PM052002
PM074051

Underground Emergency Vehicle PMs

PM074027
PM074084
WP12-FP0033

Underground Scaler PMs

PM074027
PM074065
WP04-AU1037

Skid Steer Loader PMs

PM074027
WP04-AU1035
Underground Haul Truck PMs

PM074027
PM074071
WP04-AU1038

Soda Blaster PMs

PM074027
PM074091

Crane Truck PMs

PM074027
PM074073
PM074075
WP04-AU1039

¹ Bolded Procedures are listed in Permit Attachment E, Table E-1 or Table E-1a

ATTACHMENT 2
CLASS 1 PMN MAKING TABLE D-6 AND TABLE E-1 CHANGES
40 PAGES



Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221

SEP 30 2015

Mr. John E. Kieling, Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

Subject: Class 1 Permit Modification Notifications to the Waste Isolation Pilot Plant Hazardous
Waste Facility Permit Number: NM4890139088-TSDF

Dear Mr. Kieling:

Enclosed is a Notification of Class 1 Permit Modifications for the following items:

- Clarifications to Inspections of Liquid-Fueled Vehicles in Attachment E
- Addition of Automatic On-Board Fire Suppression Systems to Emergency Equipment in Attachment D and Attachment E
- Enhancement of Inspection Frequency of Mine Pager Phones in Attachment E
- Update Emergency Response Training in Attachment F1
- Update Chronology in Attachment A
- Update Figures in Attachment D
- Update Facsimile Number in Permit Part 1

We certify under penalty of law that this document and all attachments were prepared under our direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on our inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of our knowledge and belief, true, accurate, and complete. We are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please contact Mr. George T. Basabilvazo at (575) 234-7488.

Sincerely,

Original Signatures on File

Dana C. Bryson, Acting Manager
Carlsbad Field Office

Philip J. Breidenbach, Project Manager
Nuclear Waste Partnership LLC

Enclosure

cc: w/enclosure

K. Roberts, NMED	* ED
R. Maestas, NMED	ED
S. Holmes, NMED	ED
C. Smith, NMED	ED

CBFO M&RC

*ED denotes electronic distribution

Class 1 Permit Modification Notifications

Clarifications to Inspections of Liquid-Fueled Vehicles in Attachment E
Addition of Automatic On-Board Fire Suppression Systems to Emergency Equipment in
Attachment D and Attachment E
Enhancement of Inspection Frequency of Mine Pager Phones in Attachment E
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Waste Isolation Pilot Plant
Carlsbad, New Mexico

WIPP Permit Number - NM4890139088-TSDF

September 2015

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Transmittal Letter

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Overview of the Permit Modification Notifications

This document contains seven (7) Class 1 Permit Modification Notifications (**PMNs**) for the Waste Isolation Pilot Plant (**WIPP**) Hazardous Waste Facility Permit (**Permit**) Number NM4890139088-TSDF.

These PMNs are being submitted by the U.S. Department of Energy and Nuclear Waste Partnership LLC, collectively referred to as the Permittees, in accordance with Permit Part 1, Section 1.3.1. (20.4.1.900 New Mexico Administrative Code (**NMAC**) incorporating Title 40 of the Code of Federal Regulations (**CFR**) §270.42[a]). The PMNs in this document are necessary to notify the New Mexico Environment Department (**NMED**) of changes which impact the Permit. These changes do not reduce the ability of the Permittees to provide continued protection to human health and the environment.

The requested modifications to the Permit and any related supporting documents are provided in these PMNs. The proposed modifications to the text of the Permit have been identified using **red** text and double underline and a ~~strikeout~~ font for deleted information. Direct quotations are indicated by italicized text.

Attachment A
Description of the Class 1 Permit Modification Notifications

Table 1. Class 1 Hazardous Waste Facility Permit Modification Notifications

Item No.	Affected Permit Section	Change Description	Category
1.	Attachment E, Table E-1	<p>This modification adds “Leaks/Spills” criterion to the “Procedure Number and Inspection Criteria” column to Attachment E, Table E-1, for the following equipment:</p> <ul style="list-style-type: none"> • Contact-Handled (CH) TRU Underground Transporter • Forklifts Used for Waste Handling (Electric and Diesel forklifts, Push-Pull Attachment) • Trailer Jockey <p>This modification makes an editorial change to the third column of Table E-1 “Inspection a Frequency and Job Title of Personnel Normally Making Inspection” to show that the “a” in the title is actually a superscript as it is in Table E-1a.</p> <p>This modification makes an editorial change to Table E-1 to capitalize “Leaks/Spills” for the Monorail Hoist.</p> <p>This modification makes formatting corrections to Table E-1 to enter a return after the procedure number in the “Procedure Number and Inspection Criteria” column. This will correct formatting to make all procedure numbers and their titles consistent throughout the table. This has been done for the following items under “System/Equipment Name” column:</p> <ul style="list-style-type: none"> • Fire Hoses • Hazardous Material Response Equipment • Miners First Aid Station • Personal Protective Equipment 	A.1
2.	Attachment D, Table D-6, and Attachment E, Table E-1	<p>This modification makes the following addition to Attachment D, Table D-6:</p> <ul style="list-style-type: none"> • New equipment line item, “Automatic Fire Suppression Systems on liquid fueled vehicles” <p>In addition, the following addition is being made to Attachment E, Table E-1, to reflect the change to Table D-6 described above:</p> <ul style="list-style-type: none"> • New equipment line item, “Automatic on-board fire suppression systems” <p>This modification corrects two typographical errors in Table D-6 with regard to underground locations:</p> <ul style="list-style-type: none"> • Underground Fire alarm location is corrected from “EO/N-1200” to “E0/N-1200” • Mine Pager Phone locations from “S100/W30” to “S1000/W30” 	B.6.b

Item No.	Affected Permit Section	Change Description	Category
3.	Attachment E, Table E-1	<p>This modification makes the following additions to Attachment E, Table E-1:</p> <ul style="list-style-type: none"> For “Mine Pager Phones (between surface and underground)” line item, added footnote indicator “^o” to “Monthly” in the “Inspection a Frequency and Job Title of Personnel Normally Making Inspection” column New footnote, “^oMine pager phones in non-essential locations are not routinely ‘inspected.’ Many are used in day-to-day operations. They are used until they fail, at which time they are repaired. Mine pager phones are used routinely by Underground Operations.” 	B.6.b
4.	Attachment F1, <i>RCRA Hazardous Waste Management Job Titles and Descriptions</i> .	<p>This modification updates Attachment F1, <i>RCRA Hazardous Waste Management Job Titles and Descriptions</i>. There are six changes being made to the job descriptions for Emergency Services Technician, First Line Initial Response Team Member, and Emergency Response Team. These changes are as follows:</p> <p><u>Emergency Services Technician</u></p> <ul style="list-style-type: none"> Change “Incident Command Structure (ERT 113)” to “Introduction to the Incident Command System (IS 100)” on the Emergency Services Technician job description. <p><u>First Line Initial Response Team member</u></p> <ul style="list-style-type: none"> Remove “Annual Live Fires Practical (ERT 107) (Annual)” and “Introduction to Firefighting (ERT 117) (Once)” from the First Line Initial Response Team member job description and replace with “Industrial Fire Brigade Advanced Interior/Exterior Certification.” <p><u>Emergency Response Team</u></p> <ul style="list-style-type: none"> Change “Authorization Card ERT-01” to “Qualification Card ERT-01” under Requisite Skills, Experience, and Education and change “Authorization Card (ERT-01)” to “Qualification Card (ERT-01)” under Training on the Emergency Response Team job description. Correct title of ERT-102/102A from “Emergency Response Team” to “Confined Space Rescue” on the Emergency Response Team job description. Add “SAF-501/502, Inexperienced Miner Training” to list of required training on the Emergency Response Team job description. Add “Industrial Fire Brigade Advanced Interior/Exterior Certification” to list of required training on the Emergency Response Team job 	B.5.b and A.1

Item No.	Affected Permit Section	Change Description	Category
		description.	
5.	Attachment A, Section A-6	This modification updates Permit Attachment A, Section A-6, to reflect a recent name change of Babcock and Wilcox Technical Services Group, Inc., a member company of Nuclear Waste Partnership, LLC. The company is now called BWXT Technical Services Group, Inc. (BWXT TSG). This is an administrative change to the Permit.	A.1
6.	Attachment D, Figure D-1, Figure D-6 and Figure D-8	This modification updates Attachment D, Figure D-1, <i>WIPP Surface Structures</i> , Figure D-6, <i>Fire-Water Distribution System</i> , and Figure D-8, <i>WIPP On-Site Assembly Areas and WIPP Staging Areas</i> . These figures are similar to Attachment A4, Figure A4-2 <i>WIPP Traffic Flow Diagram</i> which was recently revised to include the new east gate.	A.1
7.	Permit Part 1, Section 1.10.1	This modification updates Permit Part 1, Section 1.10.1., to include the current fax number for the Chief, Hazardous Waste Bureau, New Mexico Environment Department (NMED).	A.1

Item 1

Description

This modification adds “Leaks/Spills” criterion to the “Procedure Number and Inspection Criteria” column to Attachment E, Table E-1, for the following equipment:

- Contact-Handled (CH) TRU Underground Transporter
- Forklifts Used for Waste Handling (Electric and Diesel forklifts, Push-Pull Attachment)
- Trailer Jockey

This modification makes an editorial change to the third column of Table E-1 “Inspection a Frequency and Job Title of Personnel Normally Making Inspection” to show that the “a” in the title is actually a superscript as it is in Table E-1a.

This modification makes an editorial change to Table E-1 to capitalize “Leaks/Spills” for the Monorail Hoist.

This modification makes formatting corrections to Table E-1 to enter a return after the procedure number in the “Procedure Number and Inspection Criteria” column. This will correct formatting to make all procedure numbers and their titles consistent throughout the table. This has been done for the following items under “System/Equipment Name” column:

- Fire Hoses
- Hazardous Material Response Equipment
- Miners First Aid Station
- Personal Protective Equipment

Basis

The change is classified as an “Administrative and informational change” and is, therefore, a Class 1 modification pursuant to 20.4.1.900 NMAC (incorporating 40 CFR 270.42, Appendix I, A.1).

Discussion

The addition of the “Leaks/Spills” criterion to Attachment E, Table E-1, is necessary to ensure consistency with the procedures for inspection of liquid-fueled waste-handling equipment in the underground and on the surface. These procedures already require inspection for Leaks/Spills; therefore, this modification adds this requirement as a Permit condition, consistent with other inspections for liquid-fueled waste-handling equipment in Table E-1. This change serves as a clarification of the inspection criteria associated with these pieces of equipment. This modification makes an editorial change to the third column of Table E-1 “Inspection a Frequency and Job Title of Personnel Normally Making Inspection” to show that the “a” in the title is actually a superscript as it is in Table E-1a. This modification corrects Table E-1 to capitalize “Leaks/Spills” for the Monorail Hoist to ensure consistency throughout Table E-1. This

modification corrects the formatting by adding returns after procedure numbers to ensure consistency throughout Table E-1.

Proposed Revised Permit Text:

**Table E-1
Inspection Schedule/Procedures**

System/Equipment Name	Responsible Organization	Inspection ^a Frequency and Job Title of Personnel Normally Making Inspection	Procedure Number and Inspection Criteria
Air Intake Shaft Hoist	Underground Operations	Preoperational ^c See Lists 1b and c	WP 04-HO1004 Inspecting for Deterioration ^b , Safety Equipment, Communication Systems, and Mechanical Operability ^m in accordance with Mine Safety and Health Administration (MSHA) requirements
Ambulances (Surface and Underground) and related emergency supplies and equipment	Emergency Services	Weekly See List 11	12-FP0030 Inspecting for Mechanical Operability ^m , Deterioration ^b , and Required Equipment ⁿ
Adjustable Center of Gravity Lift Fixture	Waste Handling	Preoperational See List 8	WP 05-WH1410 Inspecting for Mechanical Operability ^m and Deterioration ^b
Backup Power Supply Diesel Generators	Facility Operations	Monthly See List 3	WP 04-ED1301 Inspecting for Mechanical Operability ^m and Leaks/Spills by starting and operating both generators. Results of this inspection are logged in accordance with WP 04-AD3008.
Facility Inspections (Water Diversion Berms)	Facility Engineering	Annually See List 4	WP 10-WC3008 Inspecting for Damage, Impediments to water flow, and Deterioration ^b
Central Monitoring Systems (CMS)	Facility Operations	Continuous See List 3	Automatic Self-Checking
Contact-Handled (CH) TRU Underground Transporter	Waste Handling	Preoperational See List 8	WP 05-WH1603 Inspecting for <u>Leaks/Spills</u> , Mechanical Operability ^m , Deterioration ^b , and area around transporter clear of obstacles
Conveyance Loading Car	Waste Handling	Preoperational See List 8	WP 05-WH1406 Inspecting for Mechanical Operability ^m , Deterioration ^b , path clear of obstacles, and guards in the proper place

System/Equipment Name	Responsible Organization	Inspection ^a Frequency and Job Title of Personnel Normally Making Inspection	Procedure Number and Inspection Criteria
Facility Transfer Vehicle	Waste Handling	Preoperational See List 8	WP 05-WH1204 Inspecting for Mechanical Operability ^m , Deterioration ^b , path clear of obstacles, and guards in the proper place
Exhaust Shaft	Underground Operations	Quarterly See List 1a	PM041099 Inspecting for Deterioration ^b and Leaks/Spills
Eye Wash and Shower Equipment	Equipment Custodian	Weekly See List 5	WP 12-IS1832 Inspecting for Deterioration ^b
		Semi-annually See List 2a	WP 12-IS1832 Inspecting for Deterioration ^b and Fluid Levels—Replace as Required
Fire Detection and Alarm System	Emergency Services	Semiannually See List 11	12-FP0027 Inspecting for Deterioration ^b , Operability of indicator lights and, underground fuel station dry chemical suppression system. Inspection is per NFPA 17
Fire Extinguishers ^j	Emergency Services	Monthly See List 11	12-FP0036 Inspecting for Deterioration ^b , Leaks/Spills, Expiration, seals, fullness, and pressure
Fire Hoses	Emergency Services	Annually (minimum) See List 11	42-FP0031 <u>12-FP0031</u> Inspecting for Deterioration ^b and Leaks/Spills
Fire Hydrants	Emergency Services	Semi-annual/ annually See List 11	12-FP0034 Inspecting for Deterioration ^b and Leaks/Spills
Fire Pumps	Emergency Services	Weekly/annually See List 11	WP 12-FP0026 Inspecting for Deterioration ^b , Leaks/Spills, valves, and panel lights
Fire Sprinkler Systems	Emergency Services	Monthly/ quarterly See List 11	WP 12-FP0025 Inspecting for Deterioration ^b , Leaks/Spills, static pressures, and removable strainers
Fire and Emergency Response Trucks (Fire Trucks, Underground Fire Suppression Vehicles and Underground Rescue Trucks)	Emergency Services	Weekly See List 11	12-FP0033 Inspecting for Mechanical Operability ^m , Deterioration ^b , Leaks/Spills, and Required Equipment ⁿ

System/Equipment Name	Responsible Organization	Inspection ^a Frequency and Job Title of Personnel Normally Making Inspection	Procedure Number and Inspection Criteria
Forklifts Used for Waste Handling (Electric and Diesel forklifts, Push-Pull Attachment)	Waste Handling	Preoperational See List 8	WP 05-WH1201, WP 05-WH1207, WP 05-WH1401, WP 05-WH1402, WP 05-WH1403, and WP 05-WH1412 Inspecting for <u>Leaks/Spills</u> , Mechanical Operability ^m , Deterioration ^b , and On board fire suppression system
Hazardous Material Response Equipment	Emergency Services	Weekly See List 11	42-FP0033 <u>12-FP0033</u> Inspecting for Mechanical Operability ^m , Deterioration ^b , and Required Equipment ⁿ
Miners First Aid Station	Emergency Services	Quarterly See List 11	42-FP0035 <u>12-FP0035</u> Inspecting for Required Equipment ⁿ
Mine Pager Phones (between surface and underground)	Facility Operations	Monthly See List 3	WP 04-PC3017 Testing of PA and Underground Alarms and Mine Page Phones at essential locations
MSHA Air Quality Monitor	Maintenance/ Underground Operations	Daily ^j See Lists 1 and 10	WP 12-IH1828 Inspecting for Air Quality Monitoring Equipment Functional Check
Perimeter Fence, Gates, Signs	Security	Daily See List 6	PF0-010 Inspecting for Deterioration ^b and Posted Warnings
Personal Protective Equipment (not otherwise contained in emergency vehicles or issued to individuals): —Self-Contained Breathing Apparatus	Emergency Services	Weekly See List 11	42-FP0029 <u>12-FP0029</u> Inspecting for Deterioration ^b and Pressure
Public Address (and Intercom System)	Facility Operations	Monthly See List 3	WP 04-PC3017 Testing of PA and Underground Alarms and Mine Page Phones at essential locations Systems operated in test mode
Radio Equipment	Facility Operations	Daily ^j See List 3	Radios are operated daily and are repaired upon failure
Rescue Trucks (Surface and Underground)	Emergency Services	Weekly See List 11	12-FP0030 and 12-FP0033 Inspecting for Mechanical Operability ^m , Deterioration ^b , Leaks/Spills, and Required Equipment ⁿ

System/Equipment Name	Responsible Organization	Inspection ^a Frequency and Job Title of Personnel Normally Making Inspection	Procedure Number and Inspection Criteria
Salt Handling Shaft Hoist	Underground Operations	Preoperational See List 1b and c	WP 04-HO1002 Inspecting for Deterioration ^b , Safety Equipment, Communication Systems, and Mechanical Operability ^m in accordance with MSHA requirements
Self-Rescuers	Underground Operations	Quarterly See List 1c	WP 04-AU1026 Inspecting for Deterioration ^b and Functionality in accordance with MSHA requirements
Surface TRU Mixed Waste Handling Area ^k	Waste Handling	Preoperational or Weekly ^e See List 8	WP 05-WH1101 Inspecting for Deterioration ^b , Leaks/Spills, Required Aisle Space, Posted Warnings, Communication Systems, Container Condition, and Floor coating integrity
TRU Mixed Waste Decontamination Equipment	Waste Handling	Annually See List 8	WP 05-WH1101 Inspecting for Required Equipment ⁿ
Underground Openings—Roof Bolts and Travelways	Underground Operations	Weekly See List 1a	WP 04-AU1007 Inspecting for Deterioration ^b
Underground—Geomechanical Instrumentation System (GIS)	Geotechnical Engineering	Monthly See List 9	WP 07-EU1301 Inspecting for Deterioration ^b
Underground TRU Mixed Waste Disposal Area	Waste Handling	Preoperational See List 8	WP 05-WH1810 Inspecting for Deterioration ^b , Leaks/Spills, mine pager phones, equipment, unobstructed access, signs, debris, and ventilation
Uninterruptible Power Supply (Central UPS)	Facility Operations	Daily See List 3	WP 04-ED1542 Inspecting for Mechanical Operability ^m and Deterioration ^b with no malfunction alarms. Results of this inspection are logged in accordance with WP 04-AD3008.
TDOP Upender	Waste Handling	Preoperational See List 8	WP 05-WH1010 Inspecting for Mechanical Operability ^m and Deterioration ^b
Vehicle Siren	Emergency Services	Weekly See List 11	Functional Test included with inspection of the Ambulances, Fire Trucks, and Rescue Trucks

System/Equipment Name	Responsible Organization	Inspection ^a Frequency and Job Title of Personnel Normally Making Inspection	Procedure Number and Inspection Criteria
Ventilation Exhaust	Maintenance Operations	Quarterly See List 10	IC041098 Check for Deterioration ^b and Calibration of Mine Ventilation Rate Monitoring Equipment
Waste Handling Cranes	Waste Handling	Preoperational See List 8	WP 05-WH1407 Inspecting for Mechanical Operability ^m , Deterioration ^b , and Leaks/Spills
Waste Hoist	Underground Operations	Preoperational See List 1b and c	WP 04-HO1003 Inspecting for Deterioration ^b , Safety Equipment, Communication Systems, and Mechanical Operability ^m , Leaks/Spills, in accordance with MSHA requirements
Water Tank Level	Facility Operations	Daily See List 3	SDD-WD00 Inspecting for Deterioration ^b , and water levels. Results of this inspection are logged in accordance with WP 04-AD3008.
Push-Pull Attachment	Waste Handling	Preoperational See List 8	WP 05-WH1401 Inspecting for Damage and Deterioration ^b
Trailer Jockey	Waste Handling	Preoperational See List 8	WP 05-WH1405 Inspecting for <u>Leaks/Spills</u> Mechanical Operability ^m and Deterioration ^b
Explosion-Isolation Walls	Underground Operations	Quarterly See List 1	Integrity and Deterioration ^b of Accessible Areas
Bulkhead in Filled Panels	Underground Operations	Monthly See List 1	Integrity and Deterioration ^b of Accessible Areas
Bolting Robot	Waste Handling	Preoperational See List 8	WP 05-WH1203 Mechanical Operability ^m
Yard Transfer Vehicle	Waste Handling	Preoperational See List 8	WP 05-WH1205 Mechanical Operability ^m , Deterioration ^b , Path clear of obstacles and Guards in proper place
Payload Transfer Station	Waste Handling	Preoperational See List 8	WP 05-WH1208 Mechanical Operability ^m , Deterioration ^b , and Guards in proper place
Monorail Hoist	Waste Handling	Preoperational See List 8	WP 05-WH1202 Mechanical Operability ^m , Deterioration ^b , and <u>Leak/s</u> <u>Spills</u>

System/Equipment Name	Responsible Organization	Inspection ^a Frequency and Job Title of Personnel Normally Making Inspection	Procedure Number and Inspection Criteria
Bolting Station	Waste Handling	Preoperational See List 8	WP 05-WH1203 Mechanical Operability ^m , Deterioration ^b , and Guards in proper place

Item 2

Description

This modification makes the following addition to Attachment D, Table D-6:

- New equipment line item, “Automatic Fire Suppression Systems on liquid fueled vehicles”

In addition, the following addition is being made to Attachment E, Table E-1, to reflect the change to Table D-6 described above:

- New equipment line item, “Automatic on-board fire suppression systems”

This modification corrects two typographical errors in Table D-6 with regard to underground locations:

- Underground Fire alarm location is corrected from “EO/N-1200” to “E0/N-1200”
- Mine Pager Phone locations from “S100/W30” to “S1000/W30”

Basis

The change is classified as a “Replacement with functionally equivalent equipment, upgrade, or relocate emergency equipment listed” and is, therefore, a Class 1 modification notification pursuant to 20.4.1.900 NMAC (incorporating 40 CFR 270.42, Appendix I, B.6.b). This classification is appropriate because the manual fire suppression systems on certain vehicles, such as waste handling equipment in the underground and on the surface, have been replaced with automatic on-board fire suppression systems; therefore, the Permittees have identified this as an upgrade to existing fire suppression systems. There are inspection requirements associated with this upgrade. Inspections of the manual systems were procedural and not specified in the Permit. Procedures will continue to require the inspection of the automatic systems; however, the Permittees have determined that inspection of the on-board automatic fire suppression systems should be specifically listed in the Permit as well to ensure they are conducted as required.

The correction of the typographical errors in Attachment D, Table D-6 is an “Administrative and informational change” and is, therefore, a Class 1 modification pursuant to 20.4.1.900 NMAC (incorporating 40 CFR 270.42, Appendix I, A.1).

Discussion

These changes to specify inspection of the automatic fire suppression systems are needed in Attachment D, Table D-6, and Attachment E, Table E-1, to address specific concerns of the Accident Investigation Board for the Haul-Truck Fire Incident on February 5, 2014. The conversion of manual systems to automatic systems along with the required inspections enhances the Permittees’ Emergency Management Program. The editorial changes in Attachment D, Table D-6 are needed to correct typographical errors.

Proposed Revised Permit Text:

**Table D-6
Emergency Equipment Maintained at the Waste Isolation Pilot Plant**

Equipment	Description and Capabilities	Location
Communications		
Building Fire Alarms	Manual pull stations and automatic devices (sprinkler system flow, and smoke and thermal detectors) trigger fire alarm; locally visible and audible; visual display and alarm in Central Monitoring Room (CMR)	Guard and Security Building, Pumphouse, Warehouse/Shops, Exhaust Filter Building, Support Building, CMR/ Computer Room, Waste Handling Building, TRUPACT Maintenance Facility, SH Hoisthouse, Maintenance Shops, Guard Shack*, Auxiliary Warehouse, Core Storage Building, Engineering Building, Training Facility, Safety Building, Maintenance Shop, Hazardous Waste Storage (non-TRU) Area (Facility 474) *local alarms; not connected to the CMR
Underground Fire Alarms	Automatic/Manual; have priority over other paging channel signals but not override intercom channels; alarms sound in the general area of the control panel and are connected to the underground evacuation alarms; they also interface with the CMR.	Fire detection and control panel locations: Waste Shaft Underground Station, SH Shaft Underground Station, Between E-140 and E-300 in S-2180 Drift, E-00/N-1200, Fuel Station
Site-wide Evacuation Alarm	Transmitted over paging channel of the public address system, overriding its normal use; manually initiated according to procedures requiring evacuation; audible alarm produced by tone generator at 10 decibels above ambient noise level (or at least 75 decibels); flashing strobe lights; radios and/or pagers are used to notify facility personnel outside alarm range. Monthly test are performed on the PA, site notification alarms, and plectrons.	Site-wide
Vehicle Siren	Manual; oscillating; emergency services/surface response vehicles, is mechanical and electronic.	WIPP surface emergency vehicles
Public Address System	Includes intercom phones; handset stations and loudspeaker assemblies, each with own amplifiers; multichannel, one for public address and pages, and others for independent party lines.	Surface and underground
Intraplant Phones	Private automatic branch exchange; direct dial; provide communication link between surface and underground operations	Throughout surface and underground

Equipment	Description and Capabilities	Location
Mine Page Phones	Battery-operated paging system	CMR, Mine Rescue Room, EOC, lamproom, underground at S550/W30, S1000/W30, S1950/E140, SH Shaft Collar and Underground Station, Waste Shaft Collar and Underground Station, FSM desk, EST Station
Emergency Pagers	Manual; , intermittent alarm signals	Issued to appropriate emergency personnel
Plectrons	Tone-alert radio receivers placed in areas not accessible by the public address system	Site-wide
Portable Radios	Two-way, portable; transmits and monitors information to/from other transmitters	Issued to individuals
Plant Base Radios	Two-way, stationary, VHF-FM; linked to Eddy County Sheriff Department, NM State Police, and Otis Fire Department), and WIPP Channels 1-18 (Communication with the Lea County Sheriff's Department, the Hobbs Fire Department, Carlsbad Medical Center and Lea Regional Hospital is available via the Eddy County dispatcher) (Site Security, Site Operations and Site Emergency, maintenance, repeater to Carlsbad). Wireless communications such as cellular phones may be used to contact the Eddy County emergency responders.	Various site locations
Mobile Phones	Provide communications link between WIPP Security and key personnel	Issued to individuals plus emergency vehicles,
Spill Response		
SPILL-X-S Guns and Recharge Powder	Containment; (1)SPILL-X model SC-30-C(Gun) (1)SPILL-X model XC-30-S(Gun) (1)SPILL-X model SC-30-A(Gun); (1) A-Acid, 5 gallon bucket (Recharge Powder) (1)S-Solvent, 5 gallon bucket (Recharge Powder) (1)C-Caustic, 5 gallon bucket (Recharge Powder)	HAZMAT trailer
Absorbent Sheets	Containment or cleanup; (1) 3' x 100' Sheet	HAZMAT trailer
Absorbents	Grab and Go container; spill control bucket; (1) for solvents and neutralizing absorbents; 5 gallon bucket (1) for acids/caustics; 5 gallon bucket	HAZMAT trailer
Absorbent Material	Containment or cleanup; (1) 100 ft. rolled or equivalent socks "Pig" for general liquid (1) 100 ft. rolled or equivalent socks "Pig" for oil	HAZMAT trailer
Air Bag System	Extrication, Stabilization, Cribbing (1) bag system with tank kit and the following bag sizes: (1)12-ton, (1) 21.8-ton, (1)17-ton	Surface rescue truck

Equipment	Description and Capabilities	Location
Air Chisel	Extrication (1) Capable of cutting 3/16" steel	Surface rescue truck
Drum Transfer Pumps and Drum Opener	Containment or cleanup; (1) unit for chemical transfer (1) hand operated pump for petroleum transfer (1) drum opener	HAZMAT trailer
Floor Squeegee	Containment or cleanup; (1) straight rubber blade, nonwood handle	HAZMAT trailer
Foam Concentrate	AFFF 6% (4) 5-gallon pail	Fire truck # 1
Gas Cylinder Leak Control Kit	(1)Series A Hazardous Material Response Kit; contains nonsparking equipment to control and plug leaks	HAZMAT trailer
Portable Generator	(1)Backup power; 5,000 watt; 120 or 240 volt	Surface rescue truck
Hand Tools	Containment and cleanup; Underground rescue truck: (1)12# Sledge Hammer (1)3/8" Drive Socket Set (1)½" Drive Socket Set (1)3/4" Drive Socket Set (1)25' ½" Chain (1)6' Wrecking Bar (1)Bottle Jack (1)4# Hammer (1)18" Crescent Wrench (1)5' Pry Bar (1)2' Pry Bar (1)100' Extension Cord (1)4' Nylon Sling (1)6' Nylon Sling (1)10' Nylon Sling These tools are located in the HAZMAT Trailer. They are non-sparking. (1)14"L adjustable pipe wrench (1)15" multi-opening bung wrench (1)hammer/crate opener (1)8" pipe pliers (1)8" blade Phillips (1)#2 screwdriver (1)6" blade standard screwdriver (1)Claw Hammer	Underground rescue truck, HAZMAT trailer
Come-a-longs	(1) 4-ton; cable-type Ratchet lever tool designed specifically for lifting, lowering and pulling applications including jobs requiring rigging, positioning, and stretching. Used in rescue for extrication.	Surface rescue truck and underground rescue truck
Porta-power	(1) 10-ton hydraulic, hand-powered jaws used for extrication during rescues.	Surface rescue truck

Equipment	Description and Capabilities	Location
Jugs	Containment or cleanup; (4) 1-gallon plastic	HAZMAT trailer
Pails	Containment or cleanup; (3) 5-gallon plastic with lid	HAZMAT trailer
Portable Lighting	(1) Emergency lighting system; 120 volts; 500-watt bulbs, suitable for wet location	Underground rescue truck
Patching Kit	Series A Hazardous Response Kit; Class A; contains nonsparking equipment to control and plug leaks.	HAZMAT trailer
Scoops and Shovels	Cleanup; plastic; various sizes; nonsparking; nonwood handles (1) Scoop (3) Shovels	HAZMAT trailer
Medical Resources		
Ambulance #1	Equipped as per Federal Specifications KKK-A-1822 and New Mexico Emergency Medical Services Act General Order 35; equipped with a radio to Carlsbad Medical Center, VHF radio, UHF medical frequency, cellular phone	Surface (Safety and Emergency Services Facility)
Ambulance #2	Diesel and/or electric ambulance equipped with first aid kit, 2 stretchers, and other associated medical supplies	Underground
Ambulance #3 ^a	Diesel and/or electric ambulance equipped with first aid kit, rescue basket, oxygen, cardiac monitor and other associated medical supplies	Underground
Rescue Truck #1	Special purpose vehicle; light and heavy duty rescue equipment; transports 1 litter patient, medical oxygen and supplies for mass casualties, fire suppression support equipment (rescue tool, air bag, K-12 Rescue Saw, 5,000-watt generator, self-contained breathing apparatus (SCBA), and much more equipment	Surface (Safety and Emergency Services Facility)
Fire Detection and Fire Suppression Equipment		
Building Smoke, Thermal Detectors, or Manual Pull Stations	Ionization and photoelectric or fixed temperature/rate of rise detectors; visual display and alarm in CMR; manual pull stations. The underground has manual fire alarm pull stations located where personnel have access when evacuating. These are connected to the U/G evacuation alarm.	Guard and Security Building, Warehouse/Shops, Support Building, CMR/Computer Room, Waste Handling Building, TRUPACT Maintenance Facility, Waste Shaft Collar, Underground Fuel Station, SH Hoisthouse, Engineering Building, Industrial Safety Building, Training Facility
Fire Truck # 1	Equipped per Class "A" fire truck per NFPA; capacity 750 gallons, with pump capacity of 1200 gallons per minute	Surface (Safety and Emergency Services Facility)
Fire Truck #2	Equipped per Class "A" fire truck per NFPA; capacity 1500 gallons, with pump capacity rated for 1250 gallons per minute.	Surface (Safety and Emergency Services Facility)
Rescue Truck # 2 (U/G)	(1) 125-pound dry chemical extinguisher (1) 150-pound foam extinguisher	Underground

Equipment	Description and Capabilities	Location
Rescue Truck #3 ^a (U/G)	(1) 125-pound dry chemical extinguisher (1) 33-gallon foam extinguisher	Underground
Underground Fire ^a Suppression Vehicles	(1) 125-pound dry chemical extinguisher (1) 33-gallon foam extinguisher	Underground
Extinguishers	Individual fire extinguisher stations; various types located throughout the facility, conforming to NFPA-10.	Buildings, underground, and underground vehicles
Automatic Dry Chemical Extinguishing Systems	Automatic; 1,000-pound system (Dry Chemical); actuated by thermal detectors or by manual pull stations	Underground fuel station
<u>Automatic Fire Suppression Systems on liquid fueled vehicles</u>	<u>Individual fire suppression systems are installed on liquid fueled vehicles</u>	<u>Underground and Surface</u>
Sprinkler Systems	Fire alarms activated by water flow	Pumphouse, Guard and Security Building, Support Building, Waste Handling Building (contact- transuranic waste area only), Warehouse/Shops Building, Auxiliary Warehouse Building, TRUPACT Maintenance Facility, Training Facility, SH Shaft Hoisthouse, Exhaust Filter Building, Engineering Building, and Safety Building
Water Tanks, Hydrants	Fire suppression water supply; one 180,000-gallon capacity tank, plus a second tank with 100,000 gallon reserve	Tanks are at southwestern edge of WIPP facility; pipelines and hydrants are throughout the surface
Fire Water Pumps	Fire suppression water supply; pumps are rated at 125 pounds per square inch, 1,500 gallons per minute centrifugal pump, one with electric motor drive, the other with diesel engine; pressure maintenance pump	Pumphouse
Personal Protection Equipment		
Headlamps	Mounted on hard hat; battery operated	Each person underground
Underground Self-Rescuer Units	Short-term rebreathers; approximately 300	Each person underground
Self-Contained Self-Rescuer	At least 60 minutes of oxygen available. Approximately 400 units cached throughout the underground	Cached throughout the underground
Self-Contained Breathing Apparatus (SCBA)	Oxygen supply; 4-hour units; approximately 14 Mine Rescue Team Draeger units	Mine Rescue Training Room
Chemical and Chemical-Supported Gloves	Body protection; (12 pair) inner-cloth, (12 pair) outer-pvc, (5 pair) outer-viton	HAZMAT trailer

Equipment	Description and Capabilities	Location
Suit, Acid	Body protection; (4) acid	HAZMAT trailer
Suit, Fully Encapsulated	Body protection; used with SCBAs; full outerboot; (4) Level A; (4) Level B	HAZMAT trailer
Emergency Medical Equipment		
Antishock Trousers	Shock treatment; (2) inflatable, one on each ambulance	Ambulance # 1 and # 2
Heart Monitor and Defibrillator	Heart Monitor/defibrillator	Ambulance # 1 and # 2
Oxygen	Patient care; Size D: (2) Ambulance #1 (1) Underground Ambulance (1) Health Services Size E: (1) Rescue Truck (2) Underground Ambulance Size M: (1) Ambulance #1	Ambulance # 1 and # 2, surface rescue truck
Resuscitators (Bag)	Disposable bag resuscitation Ambulance #1: (2) adult size (1) child size Underground Ambulance: (2) adult size	Ambulance # 1, Ambulance # 2
Splints	Immobilize limbs; (1) Adult traction splint, lower extremity, with limb-supporting slings, padded ankle hitch and traction device per ambulance. (2) Rigid splinting devices or equivalents, suitable for immobilization of upper extremities per ambulance. (2) Rigid splinting devices or equivalents, suitable for the immobilization of lower extremities. (1) Set of Airsplints: 6 assorted splints; hand/wrist, half arm, full arm, foot/ankle, half leg, and full leg per miner's aid stations.	Ambulance # 1 and # 2, Miner's Aid Stations
Stretchers	Patient transport; (2) Spine Boards, one short and one long, with nylon straps per ambulance. (also used to perform cardiopulmonary resuscitation) (2) Emergency Stretchers or scoops, or combination per ambulance (1) All-purpose multi-level ambulance stretch (gurney), with 3 safety straps and locking mechanism per ambulance. (1) Stretcher in each miner's aid station.	Various combinations in Ambulance # 1 and # 2, Miner's Aid Station

Equipment	Description and Capabilities	Location
Suctions	For medical emergencies: Portable (1) Suction unit, capable of delivering at least 300 mm. HG on each ambulance.	Ambulances #1 and #2
Trauma Kits	(1) adult blood pressure cuff and stethoscope (4) soft-roller bandages (3) triangular bandages (1) pkg. band-aids (2) trauma dressings (25) 4X4 sponges (1) roll adhesive tape (1) bite stick (1) penlight (1) sterile burn sheet (1) oropharyngeal airway (1) glucose substance (2) sterile gauze dressings	(1) kit in each: Ambulances #1 and #2, surface rescue truck
Miner's Aid Station	For First Aid Stations in the Underground (1) Stretcher--as referenced above per station (1) Set of airsplints--as referenced above per station (1) Blanket per station (1) Box of latex gloves (50) per station (5) Pathogen Wipes per station (1) First Aid Kit (24) per station; includes, (3) Band-Aid Combo Paks (2) Swabs, PVP (1) Antibiotic Ointment (1) Sting-Kill Swab (2) Dressing, compresses (2) Roller Bandages (2) Tape (2) Triangle Bandage (1) Eyedressing Pak (1) Burn Dressing (1) Ammonia Inhalants (1) User Log Sheet	Miner's Aid Stations - Various Underground Locations

Equipment	Description and Capabilities	Location
First Aid Supplies	<p>According to General Order #35</p> <p>(12) bandages, soft roller, self-adhering type--4" or 6" x 5 yards.</p> <p>(6) triangular bandages, 40"</p> <p>(1) box band-aids</p> <p>(1) 1 pair bandage shears</p> <p>(6) Trauma dressings, 30" x 10"</p> <p>(6) Trauma dressings, 5" x 7"</p> <p>(50) 4" x 4" sponges, individually wrapped and sterile</p> <p>(2) rolls adhesive tape</p> <p>(1) penlight</p> <p>(2) sterile burn sheets</p> <p>(2) oropharyngeal airways -- adult</p> <p>(2) oropharyngeal airways -- child (Ambulance #1 only)</p> <p>(2) oropharyngeal airways -- infant (Ambulance #1 only)</p> <p>(1) Glucose substance</p> <p>(3) Occlusive dressings</p> <p>(1) Roll aluminum foil</p> <p>(6) Rigid cervical collars--2 each small, medium and large sizes</p> <p>(4) Cold packs</p> <p>(4) Heat packs</p> <p>(2) Bite sticks</p>	Ambulance #1
First Aid Supplies	<p>(2) Transfer sheets</p> <p>(2) Blankets</p>	Ambulances #1 and #2
First Aid Supplies	<p>(2) #16g angiosets</p> <p>(2) #18g angiosets</p> <p>(2) #20g angiosets</p> <p>(1) 1000cc LR IV fluid</p> <p>(1) 500cc NS IV fluid</p>	Ambulances #1 and #2, surface rescue truck
General Plant Emergency Equipment		
Emergency Lighting	For employee rescue and evacuation, and fire/spill containment; linked to main power supply, and selectively linked to back up diesel power supply and/or battery-backed power supply	Surface and underground
Backup Power Sources	Two diesel generators, and battery-powered uninterruptible power supply (UPS); use limited to essential loads; manual or remote starting 1,100-kilowatt diesel generators with on-site fuel for 62% load for 3 days for selected loads; 30-minute battery capacity for essential loads	Generators are east of Safety and Emergency Services Building; UPS is located at the essential loads
Hoists	Hoists in Waste Shaft, Air Intake Shaft, and SH Shaft	Waste Shaft, Air Intake Shaft, SH Shaft
Radiation Monitoring Equipment	(5) Portable alpha and beta survey meters, portable air samplers, and portable continuous air monitors	Building 412
Emergency Shower	For emergency flushing of chemical contact or injury	Surface

Equipment	Description and Capabilities	Location
Eye Wash Fountains	For emergency flushing of affected eyes	Various locations on surface and in the underground
Decon Shower Equipment	Self-contained decon shower trailer, portable decon shower unit	Surface
Overpack containers	14-85 Gallon drums 4-SWBs 1-TDOP	Building 481 Building 481 Building 481
HEPA Vacuums	2 HEPA Vacuums to be utilized for removal of contamination.	Building 481
Aquaset or Cement	100 lbs. of aquaset or cement material for solidification of liquid waste generated as a result of fire fighting water or decontamination solutions.	Building 481
Paint or Fixative	1 - 5 gallon bucket of approved fixative to be used during recovery.	Building 481
TDOP Upender	Upender facilitates overpacking standard waste boxes	Building 481
Non hazardous Decontaminating Agents	4-1 Gallon bottles for decontamination of surfaces, equipment, and personnel	Building 481

^a The NMED will be notified when new equipment is brought on line in calendar year 2015.

**Table E-1
Inspection Schedule/Procedures**

System/Equipment Name	Responsible Organization	Inspection a Frequency and Job Title of Personnel Normally Making Inspection	Procedure Number and Inspection Criteria
Air Intake Shaft Hoist	Underground Operations	Preoperational ^c See Lists 1b and c	WP 04-HO1004 Inspecting for Deterioration ^b , Safety Equipment, Communication Systems, and Mechanical Operability ^m in accordance with Mine Safety and Health Administration (MSHA) requirements
Ambulances (Surface and Underground) and related emergency supplies and equipment	Emergency Services	Weekly See List 11	12-FP0030 Inspecting for Mechanical Operability ^m , Deterioration ^b , and Required Equipment ⁿ
Adjustable Center of Gravity Lift Fixture	Waste Handling	Preoperational See List 8	WP 05-WH1410 Inspecting for Mechanical Operability ^m and Deterioration ^b
Backup Power Supply Diesel Generators	Facility Operations	Monthly See List 3	WP 04-ED1301 Inspecting for Mechanical Operability ^m and Leaks/Spills by starting and operating both generators. Results of this inspection are logged in accordance with WP 04-AD3008.
Facility Inspections (Water Diversion Berms)	Facility Engineering	Annually See List 4	WP 10-WC3008 Inspecting for Damage, Impediments to water flow, and Deterioration ^b
Central Monitoring Systems (CMS)	Facility Operations	Continuous See List 3	Automatic Self-Checking
Contact-Handled (CH) TRU Underground Transporter	Waste Handling	Preoperational See List 8	WP 05-WH1603 Inspecting for Mechanical Operability ^m , Deterioration ^b , and area around transporter clear of obstacles
Conveyance Loading Car	Waste Handling	Preoperational See List 8	WP 05-WH1406 Inspecting for Mechanical Operability ^m , Deterioration ^b , path clear of obstacles, and guards in the proper place
Facility Transfer Vehicle	Waste Handling	Preoperational See List 8	WP 05-WH1204 Inspecting for Mechanical Operability ^m , Deterioration ^b , path clear of obstacles, and guards in the proper place

System/Equipment Name	Responsible Organization	Inspection a Frequency and Job Title of Personnel Normally Making Inspection	Procedure Number and Inspection Criteria
Exhaust Shaft	Underground Operations	Quarterly See List 1a	PM041099 Inspecting for Deterioration ^b and Leaks/Spills
Eye Wash and Shower Equipment	Equipment Custodian	Weekly See List 5	WP 12-IS1832 Inspecting for Deterioration ^b
		Semi-annually See List 2a	WP 12-IS1832 Inspecting for Deterioration ^b and Fluid Levels—Replace as Required
Fire Detection and Alarm System	Emergency Services	Semiannually See List 11	12-FP0027 Inspecting for Deterioration ^b , Operability of indicator lights and, underground fuel station dry chemical suppression system. Inspection is per NFPA 17
Fire Extinguishers ^j	Emergency Services	Monthly See List 11	12-FP0036 Inspecting for Deterioration ^b , Leaks/Spills, Expiration, seals, fullness, and pressure
Fire Hoses	Emergency Services	Annually (minimum) See List 11	12-FP0031 Inspecting for Deterioration ^b and Leaks/Spills
Fire Hydrants	Emergency Services	Semi-annual/ annually See List 11	12-FP0034 Inspecting for Deterioration ^b and Leaks/Spills
Fire Pumps	Emergency Services	Weekly/annually See List 11	WP 12-FP0026 Inspecting for Deterioration ^b , Leaks/Spills, valves, and panel lights
Fire Sprinkler Systems	Emergency Services	Monthly/ quarterly See List 11	WP 12-FP0025 Inspecting for Deterioration ^b , Leaks/Spills, static pressures, and removable strainers
Fire and Emergency Response Trucks (Fire Trucks, Underground Fire Suppression Vehicles and Underground Rescue Trucks)	Emergency Services	Weekly See List 11	12-FP0033 Inspecting for Mechanical Operability ^m , Deterioration ^b , Leaks/Spills, and Required Equipment ⁿ
Forklifts Used for Waste Handling (Electric and Diesel forklifts, Push-Pull Attachment)	Waste Handling	Preoperational See List 8	WP 05-WH1201, WP 05-WH1207, WP 05-WH1401, WP 05-WH1402, WP 05-WH1403, and WP 05-WH1412 Inspecting for Mechanical Operability ^m , Deterioration ^b , and On board fire suppression system

System/Equipment Name	Responsible Organization	Inspection a Frequency and Job Title of Personnel Normally Making Inspection	Procedure Number and Inspection Criteria
<u>Automatic on-board fire suppression systems</u>	<u>Emergency Services</u>	<u>Semi-Annually</u> <u>See List 11</u>	<u>WP 12-FP0060</u> <u>Inspecting for Mechanical Operability^m and Deterioration^b</u>
Hazardous Material Response Equipment	Emergency Services	Weekly See List 11	12-FP0033 Inspecting for Mechanical Operability ^m , Deterioration ^b , and Required Equipment ⁿ
Miners First Aid Station	Emergency Services	Quarterly See List 11	12-FP0035 Inspecting for Required Equipment ⁿ
Mine Pager Phones (between surface and underground)	Facility Operations	Monthly See List 3	WP 04-PC3017 Testing of PA and Underground Alarms and Mine Page Phones at essential locations
MSHA Air Quality Monitor	Maintenance/ Underground Operations	Daily ^l See Lists 1 and 10	WP 12-IH1828 Inspecting for Air Quality Monitoring Equipment Functional Check
Perimeter Fence, Gates, Signs	Security	Daily See List 6	PF0-010 Inspecting for Deterioration ^b and Posted Warnings
Personal Protective Equipment (not otherwise contained in emergency vehicles or issued to individuals): —Self-Contained Breathing Apparatus	Emergency Services	Weekly See List 11	12-FP0029 Inspecting for Deterioration ^b and Pressure
Public Address (and Intercom System)	Facility Operations	Monthly See List 3	WP 04-PC3017 Testing of PA and Underground Alarms and Mine Page Phones at essential locations Systems operated in test mode
Radio Equipment	Facility Operations	Daily ^j See List 3	Radios are operated daily and are repaired upon failure
Rescue Trucks (Surface and Underground)	Emergency Services	Weekly See List 11	12-FP0030 and 12-FP0033 Inspecting for Mechanical Operability ^m , Deterioration ^b , Leaks/Spills, and Required Equipment ⁿ
Salt Handling Shaft Hoist	Underground Operations	Preoperational See List 1b and c	WP 04-HO1002 Inspecting for Deterioration ^b , Safety Equipment, Communication Systems, and Mechanical Operability ^m in accordance with MSHA requirements

System/Equipment Name	Responsible Organization	Inspection a Frequency and Job Title of Personnel Normally Making Inspection	Procedure Number and Inspection Criteria
Self-Rescuers	Underground Operations	Quarterly See List 1c	WP 04-AU1026 Inspecting for Deterioration ^b and Functionality in accordance with MSHA requirements
Surface TRU Mixed Waste Handling Area ^k	Waste Handling	Preoperational or Weekly ^e See List 8	WP 05-WH1101 Inspecting for Deterioration ^b , Leaks/Spills, Required Aisle Space, Posted Warnings, Communication Systems, Container Condition, and Floor coating integrity
TRU Mixed Waste Decontamination Equipment	Waste Handling	Annually See List 8	WP 05-WH1101 Inspecting for Required Equipment ⁿ
Underground Openings—Roof Bolts and Travelways	Underground Operations	Weekly See List 1a	WP 04-AU1007 Inspecting for Deterioration ^b
Underground—Geomechanical Instrumentation System (GIS)	Geotechnical Engineering	Monthly See List 9	WP 07-EU1301 Inspecting for Deterioration ^b
Underground TRU Mixed Waste Disposal Area	Waste Handling	Preoperational See List 8	WP 05-WH1810 Inspecting for Deterioration ^b , Leaks/Spills, mine pager phones, equipment, unobstructed access, signs, debris, and ventilation
Uninterruptible Power Supply (Central UPS)	Facility Operations	Daily See List 3	WP 04-ED1542 Inspecting for Mechanical Operability ^m and Deterioration ^b with no malfunction alarms. Results of this inspection are logged in accordance with WP 04-AD3008.
TDOP Upender	Waste Handling	Preoperational See List 8	WP 05-WH1010 Inspecting for Mechanical Operability ^m and Deterioration ^b
Vehicle Siren	Emergency Services	Weekly See List 11	Functional Test included with inspection of the Ambulances, Fire Trucks, and Rescue Trucks
Ventilation Exhaust	Maintenance Operations	Quarterly See List 10	IC041098 Check for Deterioration ^b and Calibration of Mine Ventilation Rate Monitoring Equipment
Waste Handling Cranes	Waste Handling	Preoperational See List 8	WP 05-WH1407 Inspecting for Mechanical Operability ^m , Deterioration ^b , and Leaks/Spills

System/Equipment Name	Responsible Organization	Inspection a Frequency and Job Title of Personnel Normally Making Inspection	Procedure Number and Inspection Criteria
Waste Hoist	Underground Operations	Preoperational See List 1b and c	WP 04-HO1003 Inspecting for Deterioration ^b , Safety Equipment, Communication Systems, and Mechanical Operability ^m , Leaks/Spills, in accordance with MSHA requirements
Water Tank Level	Facility Operations	Daily See List 3	SDD-WD00 Inspecting for Deterioration ^b , and water levels. Results of this inspection are logged in accordance with WVP 04-AD3008.
Push-Pull Attachment	Waste Handling	Preoperational See List 8	WP 05-WH1401 Inspecting for Damage and Deterioration ^b
Trailer Jockey	Waste Handling	Preoperational See List 8	WP 05-WH1405 Inspecting for Mechanical Operability ^m and Deterioration ^b
Explosion-Isolation Walls	Underground Operations	Quarterly See List 1	Integrity and Deterioration ^b of Accessible Areas
Bulkhead in Filled Panels	Underground Operations	Monthly See List 1	Integrity and Deterioration ^b of Accessible Areas
Bolting Robot	Waste Handling	Preoperational See List 8	WP 05-WH1203 Mechanical Operability ^m
Yard Transfer Vehicle	Waste Handling	Preoperational See List 8	WP 05-WH1205 Mechanical Operability ^m , Deterioration ^b , Path clear of obstacles and Guards in proper place
Payload Transfer Station	Waste Handling	Preoperational See List 8	WP 05-WH1208 Mechanical Operability ^m , Deterioration ^b , and Guards in proper place
Monorail Hoist	Waste Handling	Preoperational See List 8	WP 05-WH1202 Mechanical Operability ^m , Deterioration ^b , and leaks/spills
Bolting Station	Waste Handling	Preoperational See List 8	WP 05-WH1203 Mechanical Operability ^m , Deterioration ^b , and Guards in proper place

Item 3

Description

This modification makes the following additions to Attachment E, Table E-1:

- For “Mine Pager Phones (between surface and underground)” line item, added footnote indicator “^o” to “Monthly” in the “Inspection a Frequency and Job Title of Personnel Normally Making Inspection” column
- New footnote, “^oMine pager phones in non-essential locations are not routinely ‘inspected.’ Many are used in day-to-day operations. They are used until they fail, at which time they are repaired. Mine pager phones are used routinely by Underground Operations.”

Basis

The Permittees have upgraded the public address (PA) system in the underground to include mine pager phones as additional communication equipment. In doing so, it is necessary to add the PA function of the mine pager phones to the inspection schedule in Attachment E as part of the upgrade. Therefore, this change is classified as a “Replacement with functionally equivalent equipment, upgrade, or relocate emergency equipment listed” and is, therefore, a Class 1 modification notification pursuant to 20.4.1.900 NMAC (incorporating 40 CFR 270.42, Appendix I, B.6.b). This classification is appropriate because the additions to Table E-1 result in upgraded/enhanced inspection frequency of the mine pager phones.

Discussion

In response to the findings of the Accident Investigation Board for the Haul-Truck Fire Incident on February 5, 2014, the Permittees have upgraded the underground PA system. Mine pager phones at non-essential locations are now used as part of this upgraded system. The PA system is required by the Permit, Part 2, Section 2.10.1.1. Therefore, this upgraded function is being added to the Permit by way of the inspection schedule in Permit Attachment E. Because mine pager phones are used in day-to-day operations, the Permittees’ approach is to include inspection of these mine pager phones in much the same way as the inspection of two-way radios (Attachment E, Table E-1 footnote “ⁱⁱ” in the Permit).

Proposed Revised Permit Text:

**Table E-1
Inspection Schedule/Procedures**

System/Equipment Name	Responsible Organization	Inspection a Frequency and Job Title of Personnel Normally Making Inspection	Procedure Number and Inspection Criteria
Air Intake Shaft Hoist	Underground Operations	Preoperational ^c See Lists 1b and c	WP 04-HO1004 Inspecting for Deterioration ^b , Safety Equipment, Communication Systems, and Mechanical Operability ^m in accordance with Mine Safety and Health Administration (MSHA) requirements
Ambulances (Surface and Underground) and related emergency supplies and equipment	Emergency Services	Weekly See List 11	12-FP0030 Inspecting for Mechanical Operability ^m , Deterioration ^b , and Required Equipment ⁿ
Adjustable Center of Gravity Lift Fixture	Waste Handling	Preoperational See List 8	WP 05-WH1410 Inspecting for Mechanical Operability ^m and Deterioration ^b
Backup Power Supply Diesel Generators	Facility Operations	Monthly See List 3	WP 04-ED1301 Inspecting for Mechanical Operability ^m and Leaks/Spills by starting and operating both generators. Results of this inspection are logged in accordance with WP 04-AD3008.
Facility Inspections (Water Diversion Berms)	Facility Engineering	Annually See List 4	WP 10-WC3008 Inspecting for Damage, Impediments to water flow, and Deterioration ^b
Central Monitoring Systems (CMS)	Facility Operations	Continuous See List 3	Automatic Self-Checking
Contact-Handled (CH) TRU Underground Transporter	Waste Handling	Preoperational See List 8	WP 05-WH1603 Inspecting for Mechanical Operability ^m , Deterioration ^b , and area around transporter clear of obstacles
Conveyance Loading Car	Waste Handling	Preoperational See List 8	WP 05-WH1406 Inspecting for Mechanical Operability ^m , Deterioration ^b , path clear of obstacles, and guards in the proper place

System/Equipment Name	Responsible Organization	Inspection a Frequency and Job Title of Personnel Normally Making Inspection	Procedure Number and Inspection Criteria
Facility Transfer Vehicle	Waste Handling	Preoperational See List 8	WP 05-WH1204 Inspecting for Mechanical Operability ^m , Deterioration ^b , path clear of obstacles, and guards in the proper place
Exhaust Shaft	Underground Operations	Quarterly See List 1a	PM041099 Inspecting for Deterioration ^b and Leaks/Spills
Eye Wash and Shower Equipment	Equipment Custodian	Weekly See List 5	WP 12-IS1832 Inspecting for Deterioration ^b
		Semi-annually See List 2a	WP 12-IS1832 Inspecting for Deterioration ^b and Fluid Levels—Replace as Required
Fire Detection and Alarm System	Emergency Services	Semiannually See List 11	12-FP0027 Inspecting for Deterioration ^b , Operability of indicator lights and, underground fuel station dry chemical suppression system. Inspection is per NFPA 17
Fire Extinguishers ^j	Emergency Services	Monthly See List 11	12-FP0036 Inspecting for Deterioration ^b , Leaks/Spills, Expiration, seals, fullness, and pressure
Fire Hoses	Emergency Services	Annually (minimum) See List 11	12-FP0031 Inspecting for Deterioration ^b and Leaks/Spills
Fire Hydrants	Emergency Services	Semi-annual/ annually See List 11	12-FP0034 Inspecting for Deterioration ^b and Leaks/Spills
Fire Pumps	Emergency Services	Weekly/annually See List 11	WP 12-FP0026 Inspecting for Deterioration ^b , Leaks/Spills, valves, and panel lights
Fire Sprinkler Systems	Emergency Services	Monthly/ quarterly See List 11	WP 12-FP0025 Inspecting for Deterioration ^b , Leaks/Spills, static pressures, and removable strainers
Fire and Emergency Response Trucks (Fire Trucks, Underground Fire Suppression Vehicles and Underground Rescue Trucks)	Emergency Services	Weekly See List 11	12-FP0033 Inspecting for Mechanical Operability ^m , Deterioration ^b , Leaks/Spills, and Required Equipment ⁿ

System/Equipment Name	Responsible Organization	Inspection a Frequency and Job Title of Personnel Normally Making Inspection	Procedure Number and Inspection Criteria
Forklifts Used for Waste Handling (Electric and Diesel forklifts, Push-Pull Attachment)	Waste Handling	Preoperational See List 8	WP 05-WH1201, WP 05-WH1207, WP 05-WH1401, WP 05-WH1402, WP 05-WH1403, and WP 05-WH1412 Inspecting for Mechanical Operability ^m , Deterioration ^b , and On board fire suppression system
Hazardous Material Response Equipment	Emergency Services	Weekly See List 11	12-FP0033Inspecting for Mechanical Operability ^m , Deterioration ^b , and Required Equipment ⁿ
Miners First Aid Station	Emergency Services	Quarterly See List 11	12-FP0035Inspecting for Required Equipment ⁿ
Mine Pager Phones (between surface and underground)	Facility Operations	Monthly ^a See List 3	WP 04-PC3017 Testing of PA and Underground Alarms and Mine Page Phones at essential locations
MSHA Air Quality Monitor	Maintenance/ Underground Operations	Daily ^j See Lists 1 and 10	WP 12-IH1828 Inspecting for Air Quality Monitoring Equipment Functional Check
Perimeter Fence, Gates, Signs	Security	Daily See List 6	PF0-010 Inspecting for Deterioration ^b and Posted Warnings
Personal Protective Equipment (not otherwise contained in emergency vehicles or issued to individuals): —Self-Contained Breathing Apparatus	Emergency Services	Weekly See List 11	12-FP0029Inspecting for Deterioration ^b and Pressure
Public Address (and Intercom System)	Facility Operations	Monthly See List 3	WP 04-PC3017 Testing of PA and Underground Alarms and Mine Page Phones at essential locations Systems operated in test mode
Radio Equipment	Facility Operations	Daily ^j See List 3	Radios are operated daily and are repaired upon failure
Rescue Trucks (Surface and Underground)	Emergency Services	Weekly See List 11	12-FP0030 and 12-FP0033 Inspecting for Mechanical Operability ^m , Deterioration ^b , Leaks/Spills, and Required Equipment ⁿ

System/Equipment Name	Responsible Organization	Inspection a Frequency and Job Title of Personnel Normally Making Inspection	Procedure Number and Inspection Criteria
Salt Handling Shaft Hoist	Underground Operations	Preoperational See List 1b and c	WP 04-HO1002 Inspecting for Deterioration ^b , Safety Equipment, Communication Systems, and Mechanical Operability ^m in accordance with MSHA requirements
Self-Rescuers	Underground Operations	Quarterly See List 1c	WP 04-AU1026 Inspecting for Deterioration ^b and Functionality in accordance with MSHA requirements
Surface TRU Mixed Waste Handling Area ^k	Waste Handling	Preoperational or Weekly ^e See List 8	WP 05-WH1101 Inspecting for Deterioration ^b , Leaks/Spills, Required Aisle Space, Posted Warnings, Communication Systems, Container Condition, and Floor coating integrity
TRU Mixed Waste Decontamination Equipment	Waste Handling	Annually See List 8	WP 05-WH1101 Inspecting for Required Equipment ⁿ
Underground Openings—Roof Bolts and Travelways	Underground Operations	Weekly See List 1a	WP 04-AU1007 Inspecting for Deterioration ^b
Underground—Geomechanical Instrumentation System (GIS)	Geotechnical Engineering	Monthly See List 9	WP 07-EU1301 Inspecting for Deterioration ^b
Underground TRU Mixed Waste Disposal Area	Waste Handling	Preoperational See List 8	WP 05-WH1810 Inspecting for Deterioration ^b , Leaks/Spills, mine pager phones, equipment, unobstructed access, signs, debris, and ventilation
Uninterruptible Power Supply (Central UPS)	Facility Operations	Daily See List 3	WP 04-ED1542 Inspecting for Mechanical Operability ^m and Deterioration ^b with no malfunction alarms. Results of this inspection are logged in accordance with WP 04-AD3008.
TDOP Upender	Waste Handling	Preoperational See List 8	WP 05-WH1010 Inspecting for Mechanical Operability ^m and Deterioration ^b
Vehicle Siren	Emergency Services	Weekly See List 11	Functional Test included with inspection of the Ambulances, Fire Trucks, and Rescue Trucks

System/Equipment Name	Responsible Organization	Inspection a Frequency and Job Title of Personnel Normally Making Inspection	Procedure Number and Inspection Criteria
Ventilation Exhaust	Maintenance Operations	Quarterly See List 10	IC041098 Check for Deterioration ^b and Calibration of Mine Ventilation Rate Monitoring Equipment
Waste Handling Cranes	Waste Handling	Preoperational See List 8	WP 05-WH1407 Inspecting for Mechanical Operability ^m , Deterioration ^b , and Leaks/Spills
Waste Hoist	Underground Operations	Preoperational See List 1b and c	WP 04-HO1003 Inspecting for Deterioration ^b , Safety Equipment, Communication Systems, and Mechanical Operability ^m , Leaks/Spills, in accordance with MSHA requirements
Water Tank Level	Facility Operations	Daily See List 3	SDD-WD00 Inspecting for Deterioration ^b , and water levels. Results of this inspection are logged in accordance with WP 04-AD3008.
Push-Pull Attachment	Waste Handling	Preoperational See List 8	WP 05-WH1401 Inspecting for Damage and Deterioration ^b
Trailer Jockey	Waste Handling	Preoperational See List 8	WP 05-WH1405 Inspecting for Mechanical Operability ^m and Deterioration ^b
Explosion-Isolation Walls	Underground Operations	Quarterly See List 1	Integrity and Deterioration ^b of Accessible Areas
Bulkhead in Filled Panels	Underground Operations	Monthly See List 1	Integrity and Deterioration ^b of Accessible Areas
Bolting Robot	Waste Handling	Preoperational See List 8	WP 05-WH1203 Mechanical Operability ^m
Yard Transfer Vehicle	Waste Handling	Preoperational See List 8	WP 05-WH1205 Mechanical Operability ^m , Deterioration ^b , Path clear of obstacles and Guards in proper place
Payload Transfer Station	Waste Handling	Preoperational See List 8	WP 05-WH1208 Mechanical Operability ^m , Deterioration ^b , and Guards in proper place
Monorail Hoist	Waste Handling	Preoperational See List 8	WP 05-WH1202 Mechanical Operability ^m , Deterioration ^b , and leaks/spills

System/Equipment Name	Responsible Organization	Inspection a Frequency and Job Title of Personnel Normally Making Inspection	Procedure Number and Inspection Criteria
Bolting Station	Waste Handling	Preoperational See List 8	WP 05-WH1203 Mechanical Operability ^m , Deterioration ^b , and Guards in proper place

Table E-1 (Continued)
Inspection Schedule/Procedures Lists

List 1: Underground Operations

- a. Mining Technician *
- Senior Mining Technician *
- Continuous Mining Specialist *
- Senior Mining Specialist *
- Mine OPS Supervisor *
- b. Waste Hoist Operator
- Waste Hoist Shaft Tender
- c. U/G Facility Operations* - Self Rescuers
- Shaft Technician *
- d. Operations Engineer
- Supervisor U/G Services*
- Senior Operations Engineer*

List 2: Industrial Safety

- a. Safety Technician *
- Senior Safety Technician *
- Safety Specialist *
- Safety Engineer *
- Industrial Hygienist *
- b. Fire Protection Engineering *

List 3: Facility Operations

- Facilities Technician *
- Senior Facilities Technician *
- Facility Operations Specialist *
- Central Monitoring Room Operator *
- Central Monitoring Room Specialist *
- Operations Engineer
- Senior Operations Engineer *
- Facility Shift Manager
- Operations Technical Coordinator *

List 4: Facility Engineering

- Senior Engineer *

List 5: General

- Equipment Custodian*

List 6: Security

- Security Protective *
- Security Protective Supervisor *

List 8: Waste Handling

- Manager, Waste Operations
- TRU-Waste Handler

List 9: Geotechnical Engineering

- Engineer Technician *
- Associate Engineer *
- Engineer *
- Senior Engineer *
- Principal Engineer*

List 10: Maintenance Operations

- Maintenance Technician *
- Maintenance Specialist *
- Senior Maintenance Specialist *
- Contractor *

List 11: Emergency Services

- Qualified Emergency Services Personnel
- Fire Protection Technician





Table E-1 (Continued)
Inspection Schedule/Procedures Notes

- ^a Inspection may be accomplished as part of or in addition to regularly scheduled preventive maintenance inspections for each item or system. Certain structural systems of the WHB, Waste Hoist and Station A are also subject to inspection following severe natural events including earthquakes, tornados, and severe storms. Structural systems include columns, beams, girders, anchor bolts and concrete walls.
- ^b Deterioration includes: obvious visible cracks, erosion, salt build-up, damage, corrosion, loose or missing parts, malfunctions, and structural deterioration.
- ^c "Preoperational" signifies that inspections are required prior to the first use during a calendar day. For calendar days in which the equipment is not in use, no inspections are required. For an area this includes: area is clean and free of obstructions (for emergency equipment); adequate aisle space; emergency and communications equipment is readily available, properly located and sign-posted, visible, and operational. For equipment, this includes: checking fluid levels, pressures, valve and switch positions, battery charge levels, pressures, general cleanliness, and that all functional components and emergency equipment is present and operational.
- ^e These weekly inspections apply to container storage areas when containers of waste are present for a week or more.
- ^g In addition, the water tank levels are maintained by the CMR and level readouts are available at any time.
- ^h This organization is responsible for obtaining licenses for radios and frequency assignments. They do periodic checks of frequencies and handle repairs which are performed by a vendor.
- ⁱ Radios are not routinely "inspected." They are operated daily and many are used in day-to-day operations. They are used until they fail, at which time they are replaced and repaired. Radios are used routinely by Emergency Services, Security, Environmental Monitoring, and Facility Operations.
- ^j Fire extinguisher inspection is paperless. Information is recorded into a database using barcodes. The database is then printed out.
- ^k Surface CH TRU mixed waste handling areas include the Parking Area Unit, the WHB unit, and unloading areas.
- ^l No log forms are used for daily readings. However, readings that are out of tolerance are reported to the CMR and logged by CMR operator. Inspection includes daily functional checks of portable equipment.
- ^m Mechanical Operability means that the equipment has been checked and is operating in accordance with site safety requirements (e.g. proper fluid levels and tire pressure; functioning lights, alarms, sirens, and power/battery units; and belts, cables, nuts/bolts, and gears in good condition), as appropriate.
- ⁿ Required Equipment means that the equipment identified in Table D-6 is available and usable (i.e. not expired/depleted and works as designed).
- ^o Mine pager phones in non-essential locations are not routinely "inspected." Many are used in day-to-day operations. They are used until they fail, at which time they are repaired. Mine pager phones are used routinely by Underground Operations.
- ^{*} Positions are not considered RCRA positions (i.e., personnel do not manage TRU mixed waste).

ATTACHMENT 3
TECHNICAL SPECIFICATIONS FOR THE AUTOMATIC FIRE
SUPPRESSION SYSTEM

17 PAGES

TECHNICAL OPERABILITY EVALUATION

1. Number: ETO-Z-157			2. Date/Time of Request: February 4, 2015, 12:00 Noon EST		
3. Title: Fire Protection Engineering Determination of Underground Diesel Powered Equipment that Require Automatic Fire Suppression System Installation and Underground Equipment Evaluated as NOT Requiring Automatic Fire Suppression System Installation.					
4. Revision: 0		5. Occurrence Report: (if applicable) N/A			
6. Equipment Identification Number(s): Various Underground Diesel Powered Equipment and associated automatic fire suppression systems for diesel powered equipment. See Attachment 1 for specific equipment identification numbers.					
7. Executive Summary/Recommendations: Underground diesel equipment having a combined total of 40 gallons of hydraulic fluid and diesel fuel shall be provided with an automatic fire suppression system. Equipment with less hydraulic and diesel capacity may be required to have an automatic fire suppression system based on fire protection engineering review. No equipment is to be placed into operation in the underground until review by the NWP Fire Protection AHJ for requirement of fire protection modification in accordance with NFPA 122.					
8. Cognizant Engineer/ Alternate Cognizant Engineer: (print/sign)			Gaines E. Bruce / 		Date: February 26, 2015
9. Reviewer: (print/sign)			Sherman Butler / 		Date: February 26, 2015
10. Cognizant Engineering Manager: (print/sign)			James McCormick / 		Date: <u>3-10-2015</u> February 26, 2015 
11. Comments: This criterion replaces the former criterion of 60 HP and higher requiring automatic fire suppression systems. This evaluation provides a criterion based on prevention of a fire large enough to inhibit the visibility of worker UG, continue to provide a fresh air base to support safe personnel evacuation, or to plug the HEPA filters for the UG ventilation system. The HEPA filters will likely be credited as safety significant equipment in future WIPP safety basis evaluations.					
12. Distribution	Name	MSIN		Name	MSIN
Shift Operations Manager	Dale Parrish		Operations Dept. Manager	J. Harris	
Nuclear Safety Manager	J.A. McCormick		Engineering Dept. Manager	B.E. Stubbs	
ES&H Dept. Manager	B.P. SHAGULU		Other	T. CHAMBERS	
(Final distribution shall be determined by the Cognizant Engineering Manager)					

1. Number: ETO-Z-157	4. Revision: 0
13. Condition Under Evaluation: Fire growth rate for diesel equipment fires and the ability to suppress fires in the WIPP UG before plugging HEPA Filters.	
14. Reference Documents: <ol style="list-style-type: none"> 1. Pittsburgh, PA: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2005-105, Information Circular 9476, 2004 Nov; Analysis of Mine Fires for All U.S. Metal/Nonmetal Mining Categories, 1990-2001. 2. NRL/MR/6180-65-8908, Evaluation of Submarine Hydraulic System Explosion and Fire Hazards, September 9, 2005, Naval Research Laboratory, Code 6180, 4555 Overlook Avenue, SW, Washington, DC 20375-5320. 3. NFPA-122, Standard for Fire Prevention and Control in Metal/Nonmetal Mining and Metal Mineral Processing Facilities, National Fire Protection Association, Quincy, MA, 2010. 	
15. Affected System(s): <ol style="list-style-type: none"> 1. Automatic Fire Suppression Systems on UG Equipment 	
16. Design Requirements: TBD	
17. Regulatory Commitments: <ol style="list-style-type: none"> 1. DOE Order 420.1C, Facility Safety 2. 30 CFR 57, Safety and Health Standards-Underground Metal and Nonmetal Mines 	
18. Safety Functions: <ol style="list-style-type: none"> 1. Hydrocarbon fires produce significant amounts of smoke and soot that reduces visibility in closed spaces in addition to carbon monoxide and other toxic gasses. 2. Ventilation must be maintained or increased to provide fresh air UG during a fire until all affected UG personnel have evacuated. 3. HEPA Filters operated continuously to prevent a release of radioactive materials for the UG in the event of an unexpected release for stored waste containers. 	
19. Effect on Hardware: Designation of automatic fire suppression systems for underground vehicles.	
20. Enabling Assumptions: <p>NIOSH data (Reference 1) indicates the leading source of fires occurring in U.S. Metal/Nonmetal Mining between 1990 and 2001 was hydraulic fluid/fuel sprayed onto equipment hot surfaces. These type fires accounted for over 44% of all fires at U.S. Metal/Nonmetal Mining sites occurring during the twelve year period. Approximately 63% of these hydraulic fluid/fuel spray fires became large fires because of the continuous flow from the pumps due to engine shutoff failure, difficulty in activating available emergency systems at ground level, lack of an emergency line drainage system, or lack of effective and rapid local firefighting response capabilities. In at least 23% of these large fires, the operator compartment was suddenly engulfed in flames, probably due to the ignition of flammable vapors and mists that penetrated</p>	

the compartment. In two of these fires, loss of life occurred. Of particular note is that the large hydraulic fluid fires subsequently involved the fuel systems.

The WIPP fire of February 5, 2014 involved an EIMCO Haul Truck with a fuel capacity of 33 gallons and a hydraulic system capacity of 30 gallons. Based on available information it appears that a quantity of either leaked or accumulated surface diesel fuel and/or hydraulic oil comprised the majority of the material burned and was supplemented by the two front tires of the vehicle.

This fire readily demonstrates the fire hazard of underground vehicles and the adverse impact that a fire can cause at WIPP. It is also noted that this fire and suspected causes is consistent with the U.S. Metal/Nonmetal Mining industry experience with hydraulic oil fires.

21. Evaluation:

In response to the WIPP underground (UG) fire that occurred on February 5, 2014, the Fire Protection Program Rev. 14 draft of July 31, 2014 included a requirement that underground equipment over 60 HP was required to have an automatic fire suppression system installed before being able to operate without an escort by fire watch equipped by an UG fire response vehicle. This document revisits this criterion that can appear arbitrary and performs a more in depth technical review and develops a more defensible basis.

Process and Basis:

NFPA® 122, *Standard for Fire Prevention and Control in Metal/Nonmetal Mining and Metal Mineral Processing Facilities*, 2010 Edition states in sections:

5.1.4* The fire risk assessment shall determine whether mobile or other equipment, fuel depots, and surface buildings and metal mineral processing facilities require a fixed fire suppression system.

5.1.6 Where required by the authority having jurisdiction, fixed fire protection systems shall be provided.

7.1.1, "All diesel-powered mining equipment shall be analyzed to determine whether fire risks can be reduced through equipment modification."

Fire Protection Guidance for Hydraulic Fluids. The fire protection program places a restriction on hydraulic oil used for underground and waste handling equipment. The program requires the use of high temperature (>400 °F flash point) hydraulic oil (attachment 3). This action is taken to reduce the potential for a fire involving hydraulic oil and the consequences of any fire involving hydraulic oil that may occur. It should be noted that under certain conditions, even high temperature hydraulic fluids can burn under spray conditions often with explosive like performance. In U.S. Navy testing (reference 2) a selected high temperature hydraulic oil (Chevron Turbine Oil Symbol 2190 TEP) with a flash point of 246 °C (~475 °F) sprayed at typical hydraulic system pressures explosively reacted upon ignition. It was felt that an explosion would ignite the hydraulic oil spray and any hydraulic fluid that had accumulated in a pool.

Subsequent to the fire of February 5, 2014, the UG ventilation HEPA filters were determined to be excessively loaded. During the Rad Event of February 14, 2014, the UG ventilation system switched over to filtration mode. The UG has operated continuously on filtration since that event. Going forward, the waste disposal side of the UG will operate continuously on filtration mode and the HEPA Filters are likely to be credited as safety significant in future safety basis analyses. There is also likely to be a requirement for the mining side to discharge through the HEPA filters for significant periods of time.

An evaluation of HEPA filter plugging indicates a fire involving approximately 40 gallons of diesel fuel/hydraulic fluid will clog the HEPA filters if the fire occurs with HEPA filter operation near the dirty condition with approximately 3.0 psig differential pressure and smoke deposits on UG surfaces are credited. Should the HEPA filters become plugged, it will be necessary to shut down recovery, mining, maintenance, and waste handling operations until the HEPA filters can be replaced and ventilation restored. Due to the possibility of another drum rupture during filter replacement, partial HEPA filter operation during filter change-out will be necessary to assure that no radiological release from the underground will occur. It should also be pointed out that a fire generating enough smoke and soot to be a concern for HEPA filter plugging presents significant concerns for visibility and life safety within the UG.

Based on the above discussion, any diesel power equipment can pose a significant fire that can be reasonably expected to occur at some point during the remaining operation of the WIPP Facility. Of importance is that mining and underground diesel equipment can run for extended periods of time and have many hot surfaces that can easily ignite a hydraulic fluid pin-hole spray. Such a pin-hole spray fire has been demonstrated to be extremely fast growing and the most frequent type fire experienced in the U.S. Metal/Nonmetal Mining industry. Manual suppression is not deemed sufficiently fast or reliable enough for proper response to this type of fire. Automatic suppression will not only provide the desired fast response to a developing fire, but also help assure that a developing fire does not develop to the point that toxic gasses and heavy soot is released in the UG to threaten workers.

NFPA-122 requires a specific fire protection engineering review for UG diesel powered equipment prior to being used in the UG. The NWP Fire Protection AHJ, will use the above criteria for worker safety and HEPA filter plugging as screening criteria. This establishes a reasonable criterion for requiring an application of an on-board automatic fire suppression system. Equipment with fluid volumes of hydraulic fluid and diesel fuel in excess of 40 gallons shall have automatic fire suppression systems. In addition, detailed fire protection engineering review may deem it necessary to provide automatic protection at fluid volumes less than 40 gallons if special hazards or operating conditions warrant such protection.

The above discussion is the result of the review as required by NFPA 122, section 7.1.1. The attached listing of UG equipment is a result of a detailed review of UG equipment as of February 24, 2015 to the above criteria. Equipment listed on page 1 of attachment 1 shall have an automatic fire suppression system based on the criteria established in this review. Equipment listed on page 2 of attachment 1 does not require installation of an automatic fire suppression system at this time.

Any diesel powered equipment not on this list shall be reviewed by the NWP Fire Protection AHJ prior to being placed into operation in the WIPP UG.

22. Conclusions:

Following the requirements established in this evaluation provides reasonable expectations that any fire occurring in the UG will not represent a concern for the continued supplying of a fresh air base to support UG personnel evacuation or the continued operation of safety significant equipment such as the HEPA filters associated with UG ventilation.

23. Technical Recommendation:

1. Provide automatic fire suppression systems on all UG diesel powered equipment with a combined diesel fuel/hydraulic system capacity of 40 gallons regardless of operation modes, etc. In addition, other equipment may be deemed necessary for automatic fire suppression system installation based on specific fire protection engineering review. The criterion described within this evaluation requires an automatic fire suppression system for equipment identified on attachment 1.
2. Provide automatic fire suppression systems on UG diesel powered equipment determined to need an automatic fire suppression system based on an detailed review by a fire protection engineer in accordance with NFPA-122.

1. Number: ETO-Z-157	4. Revision: 0
3. Place no diesel powered equipment into operation in the UG unless the NWP fire protection AHJ has reviewed the equipment for potential fire hazards and need for automatic fire suppression.	
24. Attachments (this field is used for any pictures, spreadsheets, etc. and will expand) <ul style="list-style-type: none"> 1. Listing of reviewed UG Diesel powered equipment requiring automatic fire suppression systems 2. Maximum Industrial Design Fire Expected for Normal Operations 3. HEPA Filter Plugging Evaluation 4. WIPP Fire Protection Guidance For Hydraulic Fluids 5. Assessment From Burning 30 gallons of Diesel Fuel UG 	

Attachment 1 – Page 1
UG Equipment Determined to Require Automatic Fire Suppression Systems

Equipment Number	Equipment Description	System	Equipment Age	Hydraulic Capacity	Gallons Fuel	HP	Total Fuel
74-U-127	Seal Cutter: Fletcher	AU04	12	190	40	247	230
52-H-005A	Taylor 41 ton Forklift	WH03	28	125	50	231	175
74-U-128	Fletcher Roof Bolter: 3024AD	AU04	7	100	40	120	140
74-U-131	Fletcher Roof Bolter: 3024AD	AU04	6	100	40	130	140
74-U-002C	LHD: Sandvick EJC145	AU04	7	80	48	190	128
74-U-117	LHD: Tamrock EJC-130	AU04	21	80	48	165	128
74-U-002A	LHD: Eimco 913	AU04	29	60	62	110	122
74-U-002B	LHD: Eimco 913	AU05	30	60	62	110	122
74-U-039	LHD: Eimco 913	AU04	26	60	62	110	122
74-U-138	LHD: Sandvick LH307	AU04	4	62	55	201	117
52-H-125	Taylor 20 ton Forklift: TYN-400S	WH03	28	64	50	185	114
74-U-129	Haul Truck: Getman 1248-13	AU04	6	40/50	50	174	100
74-U-130	Haul Truck: Getman 1248-13	AU04	6	40/50	50	174	100
74-UE-042	Haul Truck: Getman 1248-13	AU04	26	40/50	50	110	100
74-UE-043	Haul Truck: Getman 1248-13	AU04	26	40/50	50	110	100
74-UE-044	Haul Truck: Getman 1248-13	AU05	27	40/50	50	110	100
74-UE-045	Haul Truck: Getman 1248 Dumper	AU04	7	40/50	50	168	100
52-H-008C	Getman Transporter: A-64	WH02	8	40	37	94	77
74-U-137	Fletcher Roof Bolter: 3020NAD	AU04	6	42	35	130	77
74-U-114	Getman Scissor Lift: A64	AU04	21	53	20	82	73
74-U-606	Scissor Lift: Getman A-64	AU04	7	53	20	174	73
74-UE-067	Nevada Mobile Generator	AU04	24	0	69	316	69
74-U-006A	Haul Truck: Eimco 985 T 15	AU04	29	28/35	33	185	68
74-U-006B	Haul Truck: Eimco 985 T 15	AU04	29	28/35	33	185	68
74-U-006C	Haul Truck: Eimco 985 T 15	AU04	29	28/35	33	185	68
52-H-008A	Getman Transporter: A-64	WH02	26	20/24	37	128	61
52-H-008B	Getman Transporter: A-64	WH02		20/24	37	128	61
52-H-007C	Toyota 6 ton Forklift: 5FD70	WH03	14	16/19	37	94	56
52-H-033	Toyota 6 ton Forklift: 5FD70	WH02	24	16/19	37	94	56
52-H-126	Toyota 6 ton Forklift: 5FD70	WH02	21	16/19	37	94	56
74-U-008	Scissor Lift: Getman A64	AU04	29	18/22	33	82	55
74-H-034	6 ton Forklift: Toyota 7FDU70	AU04	8	16/19	32	89	51
74-H-042	Skid Steer Loader: Bobcat S750	AU04	1	19/23	27	85	50
74-H-033	4 Ton Forklift: Toyota 7FD35	AU04	16	16/19	27	74	46
74-H-035	4 Ton Forklift: Toyota 7FD35	AU04	8	16/19	27	90	46
74-H-036	4 Ton Forklift: Toyota 7FD35	AU04	7	16/19	27	74	46
74-H-026	4 ton Forklift: Toyota 5FD35	AU04	20	16/19	25	85	44
74-H-027	4 ton Forklift: Toyota 5FD35	AU04	19	16/19	25	85	44
74-U-003	Lube Truck: Getman A-64	AU04	28	18/22	20	82	42
74-U-004	Lube Truck: Getman A-64	AU04	8	18/22	20	82	42
74-UE-060	Boom Crane Truck: Getman A-64	AU04	25	18/22	20	73	42
74-G-089**	Ingersoll Air Compressor	AU04	34	0	33	68	33

** Based on a detailed review by the NWP Fire Protection AHJ and the special fire hazards involved.

Attachment 1 – Page 2
UG Equipment Determined to NOT Require Automatic Fire Suppression Systems

Equipment Number	Equipment Description	System	Equipment Age	Hydraulic Capacity	Gallons Fuel	HP	Total Fuel
74-U-116	Mobile Lift Platform: JLG 34HA	AU04	21	18/22	12	28	34
74-H-039	Mobile Man Lift: Genie Z-34/22 IC	AU04	6	18/22	9.3	25	31.3
74-U-611	Scissor Lift: Genie GS2669RT	AU04		16.5/19.5	10	24.5	29.5
74-U-608	Man Lift: Genie Z-34/22IC	AU04	4	19	9.3	24.8	28.3
74-W-012	Diesel Generator	AU04	6	0	28	11	28
52-H-035	13 ton forklift SLB2: P260	WH06	3	10/12	13	160	25
74-U-132	Tractor: Kubota L4240D	AU04	6	10/12	13	42	25
74-U-133	Tractor: Kubota L4240D	AU04	6	10/12	13	42	25
74-W-001	Mobile Welder: Miller 400A	AU04		0	24.7	16.5	24.7
74-W-004	Mobile Welder: Miller 400A	AU04		0	24.7	16.5	24.7
74-U-139	Crawler Probe Drill	AU04	3	21	3		24
74-H-014	Loader: Prime Mover L-1300	AU04	23	9.5	14	40	23.5
74-H-029	Skid Steer Loader: Bobcat 753	AU04	18	9.5	14	40	23.5
74-U-123	Crawler Drill Platform: A-C 264 APC	AU04	15	18.5	5	44	23.5
74-Q-014	Fire/Rescue Truck: Kalamazoo K60B	AU04	34	0	17	85	17
74-U-603	Lift Platform: Simon Aerials 321216	AU04	34	6.4	10	23	16.4
75-H-031	Man Lift: Simons Arial 32-21G	AU04	4	5.3	10	23.5	15.3
41-H-109	UG Tractor	AU04			15	65	15
74-W-009	Diesel Welder	AU04	7	0	12	17	12
74-W-011	Diesel Welder	AU04	4	0	12	17	12
74-U-020	Tractor: Kubota L245DT	AU04		NA	5.8	25	5.8
74-U-021	Tractor: Kubota	AU04		NA	5.8	25	5.8
74-U-023	Tractor: Kubota LT245DT	AU04	26	NA	5.8	25	5.8
74-U-024	Tractor: Kubota L185DT	AU04		NA	5.8	17	5.8
74-GE-001	Diesel Porta Potty Trailer	AU04	4	0	1	10	1
74-PE-001	Generator: Dayton 4W315C	AU04		0	1	10	1
74-PE-002	Generator: Yamaha EDL6500S	AU03	3	0	1	12	1
74-PE-003	Generator: Yamaha EDL6500S	AU04	4	0	1	12	1
52-W-002	Spray Gator John Deere	WH02	0	0	8.1	20	8.1

Attachment 2

Maximum Industrial Design Fire Expected for Normal Operations

The maximum industrial design fire expected for normal operations is based on industry experience and testing available at this time.

According to a NIOSH report (Reference 1) the leading source of fires occurring in U.S. Metal/Nonmetal Mining between 1990 and 2001 was hydraulic fluid/fuel sprayed onto equipment hot surfaces. These type fires accounted for over 44% of all fires at U.S. Metal/Nonmetal Mining sites occurring during the twelve year period. Approximately 63% of these hydraulic fluid/fuel spray fires became large fires because of the continuous flow from the pumps due to engine shutoff failure, difficulty in activating available emergency systems at ground level, lack of an emergency line drainage system, or lack of effective and rapid local firefighting response capabilities. In at least 23% of these large fires, the operator compartment was suddenly engulfed in flames, probably due to the ignition of flammable vapors and mists that penetrated the compartment. Of particular note is that the large hydraulic fluid fires subsequently involved the fuel systems.

Based on this industry experience, a fire originating from a high pressure hydraulic system leak, accompanied by a failure of automatic fire suppression accompanied by continued engine operation of fuel and hydraulic pumps is not an unexpected scenario. Considering that the larger pieces of underground (i.e. Salt Haul Truck and similar vehicles) and surface equipment that may have a hydraulic system capacity of up to 35 gallons or more and very hot surfaces during operation, a spray fire could involve the initial spray and upon a failure to suppress the initial fire or shutdown the engine, a very large fire could result that can involve the fuel system also.

While the engine is running, diesel fuel and hydraulic pressure will continue to exist. Industry experience is such that a failure to shutoff an engine upon occurrence of a fire can increase the intensity and size of a fire resulting from a hydraulic system leak. How long an engine can continue to run after the start of a fire is a variable somewhat depending on the specific fire event. For this evaluation, a conservative assumption that the engine will run for 15 minutes after the start of the fire is used. This fire consists of burning hydraulic fluid and diesel fuel and two tires from the vehicle involved.

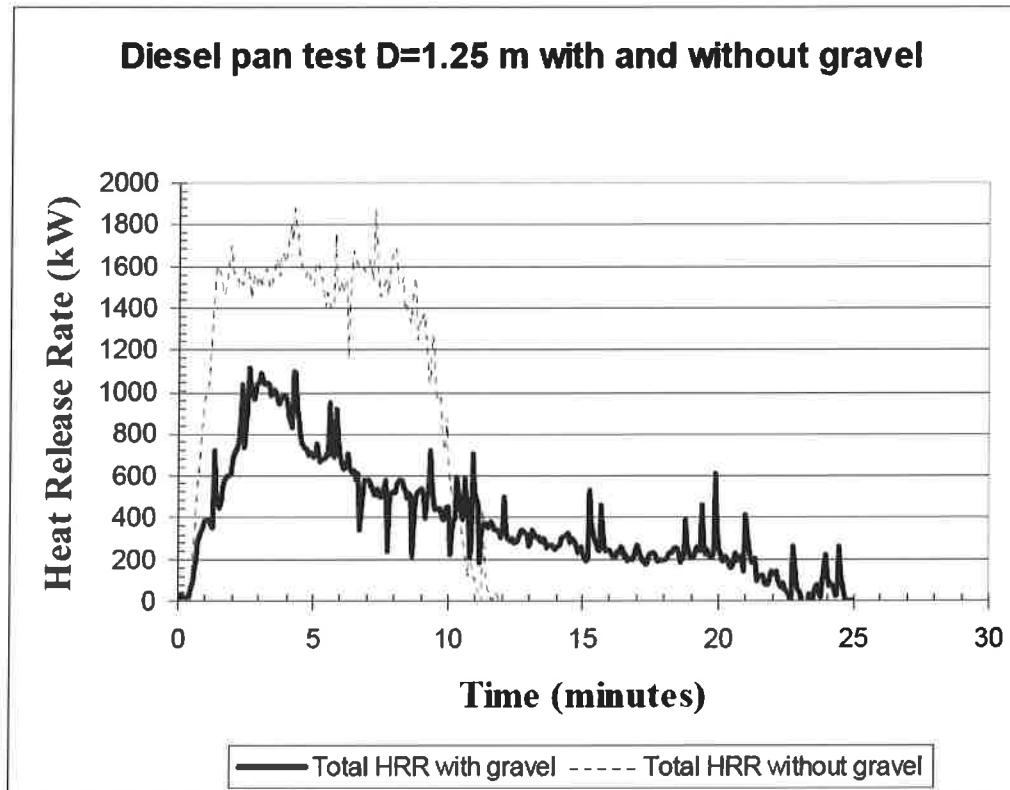
The tire burning information is taken from a Swedish test, SP Report 2010:64 (ref. 3). The tire used in that test was a Goodyear 26.5 R 25 heavy duty off road tire. This tire is larger than tires usually used in the WIPP UG. For this evaluation, a Bridgestone 17.5 R 25 tire is used which was one of the larger tires observed during a walk down inspection of the WIPP UG on December 9, 2014. The basic heat release curve for the Goodyear 26.5 R 25 heavy duty off road tire was determined from SP Report 2010:64 (ref. 3) and then scaled down based on the surface area of the Goodyear 26.5 R 25 tire and the Bridgestone 17.5 R 25 tire. The tires were assumed to begin heating five minutes into the fire and burning after 7 minutes.

The maximum industrial design fire expected for normal operations assumes a fire area of approximately of 30 ft² on a hard surface that will not absorb the fluids and on the salt surface below the vehicle which will absorb a certain amount of spilled fluid and fuel. The initial fire is expected to occur from a high pressure (1,000 psi \pm) hydraulic leak. From Reference 2, this initial fire could be expected to be about 1.3 MW and grow very fast.

- The high temperature hydraulic fluid assumed to be present in a tank capacity of 35 gallons that can support a steady state fire of a little over 3 ½ MW for a little over 13 minutes if an assumed volume of 30 gallons is considered.
- Diesel fuel for the Salt Haul Truck is 33 gallons and can support a steady state fire of approximately 5.5 MW for a little less than 14 minutes over 30 ft² if an assumed 30 gallons is spilled.

Industry testing shows that the HRR rate of a diesel pool fire can be affected by the surface upon which the diesel fuel pool is located. The HRR curves below are from the Swedish Tire burning report, reference 3.

For this test a volume of diesel fuel was burned in a 1.25 meter diameter steel pan with nothing else. For the second test, a 2 inch layer of 0 to $\frac{3}{4}$ inch diameter gravel was placed un-compacted in the pan and the same volume of diesel fuel burned. As can be clearly seen, the HRR above the gravel surface is at a lower HRR about 67% and longer burning duration, about twice as long. A similar effect would be expected to occur on the natural salt surface in the WIPP UG. However in the absence of specific testing on the salt surface and the likely packing of the surface, a credit of about 75% reducing of the HRR and about 30% increase in burning time will be applied in this analysis.



The maximum industrial design fire expected for normal operations starts initially with a high pressure hydraulic leak and is about 1.3 MW after 1 minute. This fire quickly grows to about 2 ½ MW over the next two minutes. After five minutes, the diesel fuel line is assumed to fail and allow diesel fuel to contribute to the fire. The diesel fuel and hydraulic oil fire contribution is assumed to grow to 4 ½ MW over the next two to three minutes. After 5 minutes, two tires on the vehicle begin to heat up and ignite at about 7 minutes into the fire. With tire contribution, this fire peaks at about 5 MW 10 minutes after starting. After 15 minutes the engine fails due to the fire and the flow of hydraulic fluid and diesel fuel ceases. The fire continues to burn residual diesel fuel and hydraulic fluid for the next ten minutes decreasing rapidly in total HRR. After 25 minutes, the only burning occurring is tires burning which continues for several hours. Each tire can contribute a peak of 1.6 MW during the late stages of the fire resulting in a peak HRR of about 3 MW 95 minutes after the initial start of this maximum industrial design fire expected for normal operations. The tire contribution is based on SP Report 2010:64 (ref. 3) by taking out any contribution by fuel used for tire ignition in the test and adjusting for tire sizes in the WIPP UG. The tire burning continues for some time producing about 820 kW at 125 minutes into the fire. The fire continues for several hours with continuing decrease in the HRR until all the combustible material in the tires is exhausted.

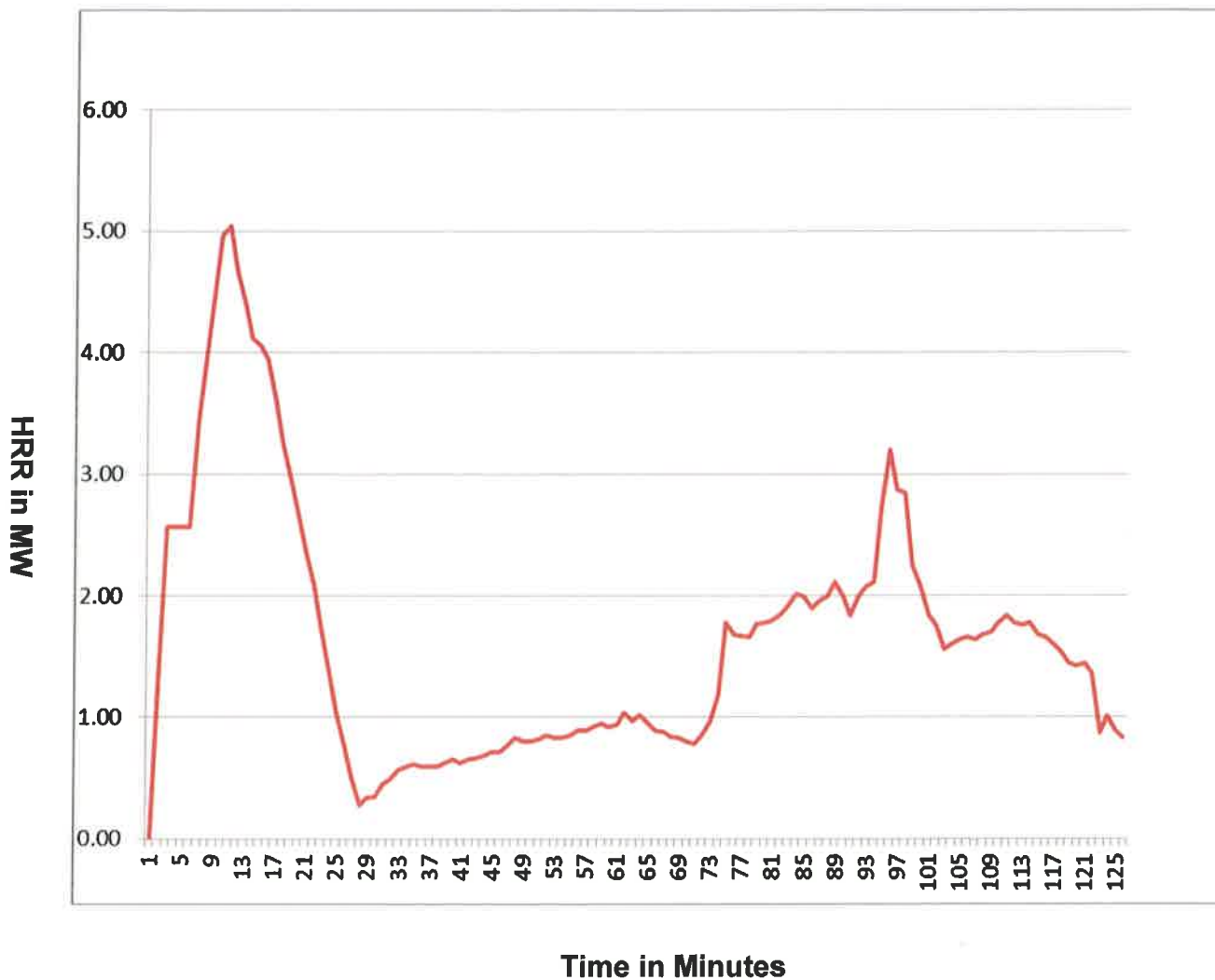
The resulting combined HRR curve for the maximum expected fire for normal operations is estimated as below. The following chart provides the total HRR estimate during each minute of the developed fire curve for the first 116 minutes.

Time (min)	HRR (MW)	Time (min)	HRR (MW)	Time (min)	HRR (MW)	Time (min)	HRR (MW)	Time (min)	HRR (MW)
1	1.26	25	0.76	48	0.81	71	0.78	94	2.73
2	2.56	26	0.51	49	0.81	72	0.85	95	3.20
3	2.56	27	0.28	50	0.82	73	0.96	96	2.87
4	2.56	28	0.34	51	0.85	74	1.19	97	2.84
5	2.56	29	0.35	52	0.83	75	1.78	98	2.25
6	3.44	30	0.45	53	0.83	76	1.68	99	2.07
7	3.92	31	0.50	54	0.85	77	1.67	100	1.84
8	4.48	32	0.57	55	0.89	78	1.66	101	1.75
9	4.96	33	0.59	56	0.89	79	1.77	102	1.56
10	5.04	34	0.62	57	0.92	80	1.78	103	1.60
11	4.66	35	0.59	58	0.95	81	1.80	104	1.64
12	4.40	36	0.59	59	0.92	82	1.85	105	1.66
13	4.11	37	0.59	60	0.94	83	1.92	106	1.64
14	4.05	38	0.63	61	0.94	84	2.01	107	1.68
15	3.95	39	0.65	62	1.04	85	1.99	108	1.69
16	3.95	40	0.63	63	0.97	86	1.90	109	1.78
17	3.25	41	0.65	64	1.02	87	1.96	110	1.84
18	2.96	42	0.66	65	0.95	88	1.99	111	1.78
19	2.64	43	0.69	66	0.89	89	2.11	112	1.75
20	2.36	44	0.71	67	0.88	90	1.99	113	1.78
21	2.09	45	0.71	68	0.84	91	1.84	114	1.68
22	1.36	46	0.77	69	0.83	92	1.99	115	1.66
24	1.04	47	0.83	70	0.81	93	2.07	116	1.60

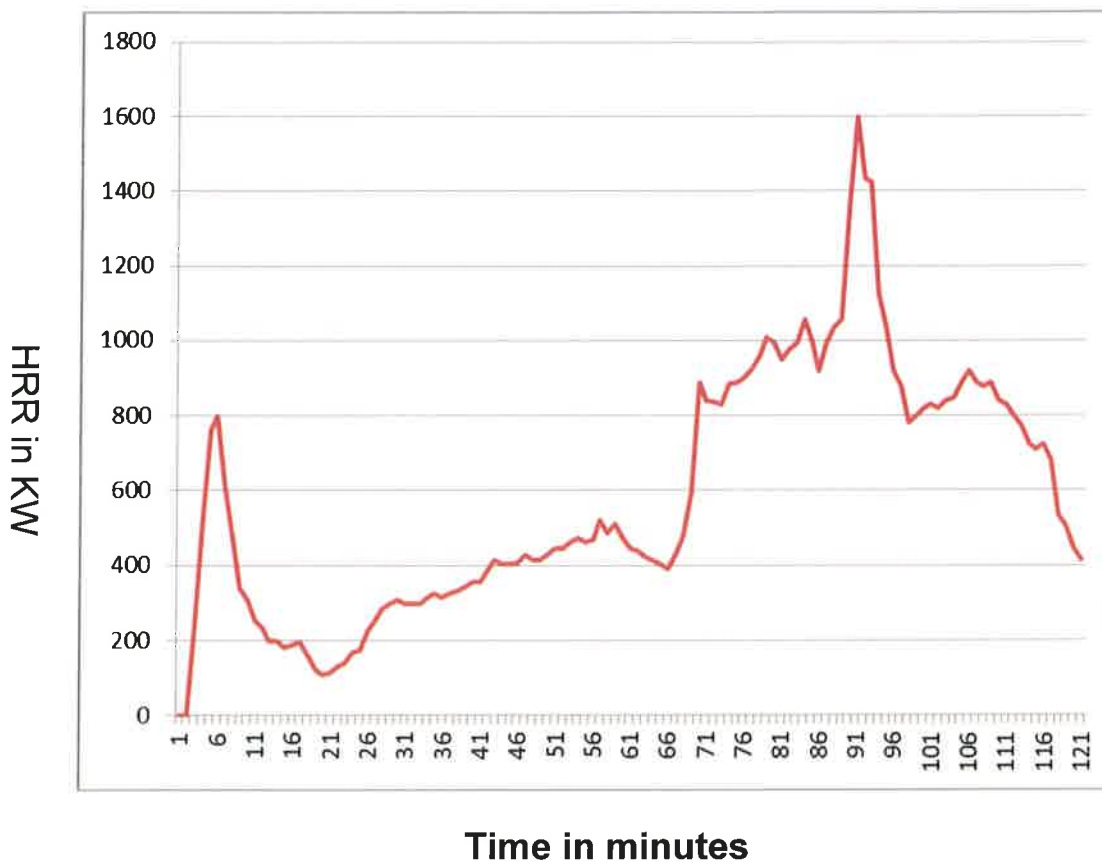
After 15 minutes, all fuel and hydraulic fluid flow has stopped and fuel release has been consumed. The total HRR is from residual tire burning which continues for several hours with peak burning at about 95 minutes into this maximum expected fire for normal operations.

The maximum expected fire for normal operation can only occur if automatic and manual fire suppression does not suppress the fire.

The heat release rate curve for the maximum expected fire during normal operation follows:



All burning after 15 minutes into this maximum expected fire for normal operation is provided by burning tires. The following is the approximate heat release curve for the tire burning derived from reference 2 as adjusted for tire sizes existing in the WIPP UG.



Recall that for this maximum normal fire during normal operation, tire burning does not start until ten minutes into the event with initial tire heat-up and ignition not until 5 minutes from the start of the fire with a hydraulic fluid spray leak. Also, this data is for a single tire burning, while the maximum expected fire for normal operation assumes that two tires are burning simultaneously resulting in twice the HRR for a single tire burning.

References:

1. Pittsburgh, PA: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2005-105, Information Circular 9476, 2004 Nov; Analysis of Mine Fires for All U.S. Metal/Nonmetal Mining Categories, 1990-2001.
2. Evaluation of Submarine Hydraulic System Explosion and Fire Hazards, NRL/MR/6180-05-8908, Naval Research Laboratory, September 29. 2005.
3. Fire Test With a Front Wheel Loader Rubber Type, Fire Technology, SP Report 2010:64, SP Technical Research Institute of Sweden.
4. Bridgestone Off-The-Road Tires For Underground Mining Brochure.
5. Goodyear 25.5 R 25 Tire Specification Sheet.

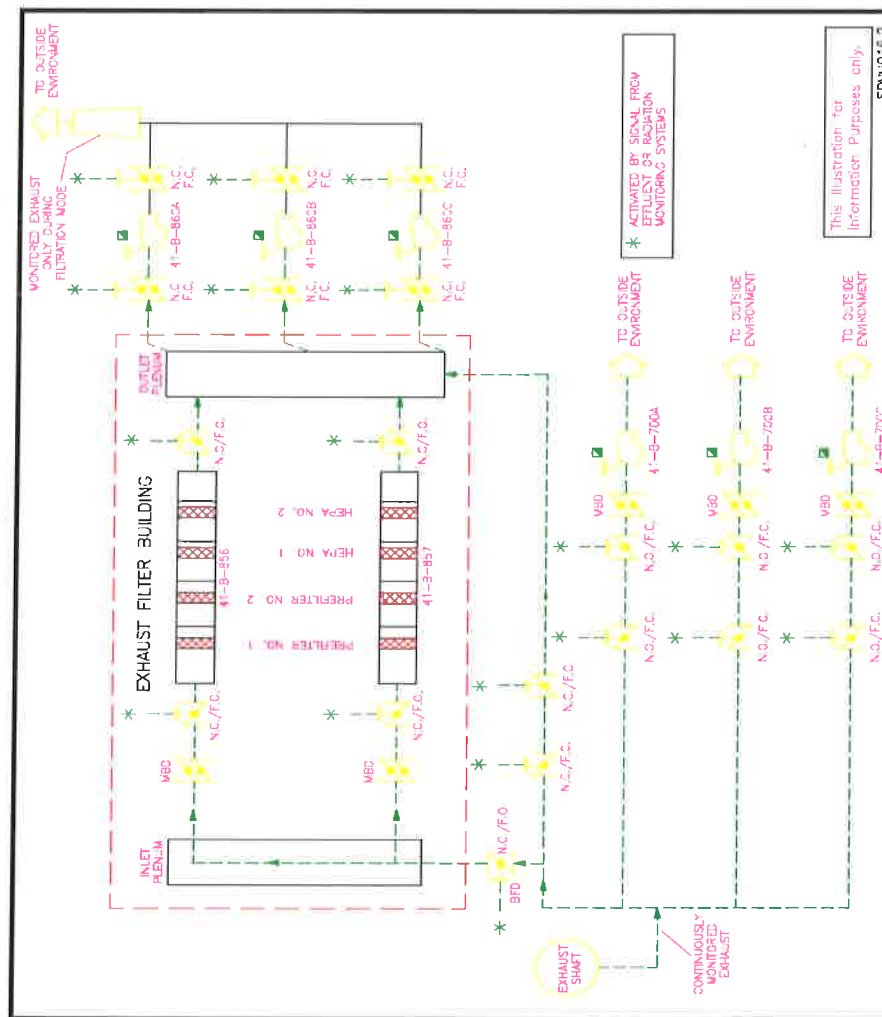
ATTACHMENT 3

WIPP HEPA Filter Plugging Evaluation

SYSTEM DESCRIPTION:

In accordance with Underground Ventilation System Design Description (Reference 1), the WIPP HEPA Filter installation consists of two parallel HEPA filter units that are walk-in type units. Each unit has one series bank of moderate efficiency prefilters (roughing filters), one series bank high efficiency prefilters and two series banks of HEPA filters. Each filter unit has a rated air flow capacity of 30,000 SCFM, providing a total capacity of 60,000 SCFM. The filters are mounted in parallel between a common inlet plenum and common outlet plenum.

Each filter unit is approximately 17 feet wide by 27 feet long and 8 feet tall. Each filter bank contains 21 filters, clamped into frames, seven filters wide and three filters high. An individual prefilter element is a Varicel or equivalent filter 24 inches wide, 24 inches high and 12 inches deep. An individual HEPA filter element is an Astrocel or equivalent filter 24 inches wide, 24 inches high and 12 inches deep. These filters all use a pleated fiberglass media, folded and separated by metal spacers in a metal frame. The first prefilter bank of filters contains 60% efficient filter units. The second prefilter bank of filters contains 90% efficient filter units. The HEPA filter banks contain filters with a 99.97% (0.3 μ) efficiency. The following is a flow schematic of the filter units.

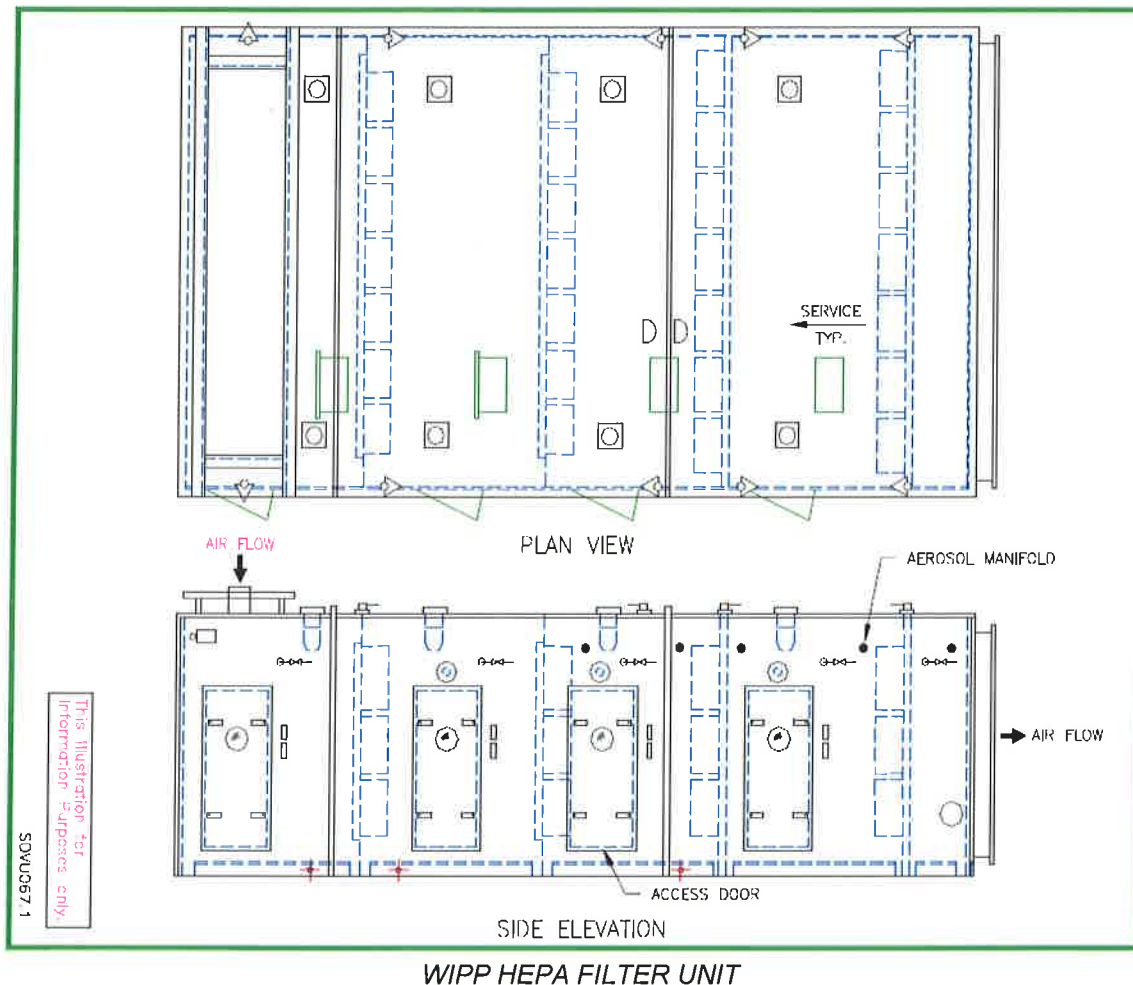


WIPP HEPA Filter FLOW Schematic

Pressure drops are measured across each of the four series filter banks in each of the two HEPA filter units, by a differential pressure (DP) transmitter located on the walls adjacent to each HEPA filter unit. From each of these transmitters a signal is transmitted to a control panel where the signals are displayed on vertical indicators. The pressure differential output signals are also supplied to circuit boards which generate an alarm signal when the differential exceeds preset limits, indicating a fully loaded (clogged) filter. Selected HEPA filtration design information is in the following list.

Maximum HEPA Filter Flow (per filter)	37 KSCFM
Maximum HEPA Filter Housing Pressure	±20 IWG
Maximum HEPA (Astrocel) ΔP	3 IWG
Maximum Prefilter (MOD) ΔP	1.8 IWG
Maximum Prefilter (HIGH) ΔP	2.5 IWG

The filter differential pressure alarms indicate that filter replacement is needed and does not indicate that immediate failure will occur. The alarm point for filter replacement is therefore only 30% of the maximum design pressure of 10.2" H₂O.



FIRE EVENTS

The underground fire events expected consist of pool fires from fuel leakage events and ordinary combustibles such as stored tires and the office installation. Fire-generated smoke products can be expected to travel throughout the underground areas and eventually impact the HEPA filters or the prefilters. Smoke generation during fires can range from 0.01 to 0.2 grams per grams burned. The lower value is for flaming cellulosic material, while the higher value is for burning liquids.

The pluggage in a filter will vary with the type of material burned. Gregory, et al. completed a series of pluggage tests using stearic acid as a smoke stimulant (Reference 2). In these tests the masses required to plug a single standard HEPA filter assembly were 0.415, 0.454 and 0.550 kg. For these data three volumetric stearic acid flow rates were used. There does not appear to be a relationship between the flow rate and the pluggage mass. Because of the limited data available an average of the above three values (0.47 kg) could be used for analysis. Subsequent fire testing for HEPA Soot Loading in 2005 (Reference 3) provided more detailed testing resulting in the following information:

	Test No. 1		Test No. 2		Test No. 3	
	Soot, grams	Percent	Soot, grams	Percent	Soot, grams	Percent
HEPA Filter	200	35.1	240	36.4	270	36.5
Prefilter	308	54.1	350	53.0	310	41.9
Roughing Filter	62	10.9	70	10.6	160	21.6
Total	570	100	660	100	740	100

As identified in Reference 4, the average from these three tests is ~0.657 kg with a standard deviation of 0.85. The 90 percent confidence coverage value for this data (single-tailed, degrees of freedom = 2, $p_{one-tailed} = 0.1$, $t\text{-statistic} = 1.89$),

$$m_{90\%} = [(657 \text{ g}) - (1.89)(85 \text{ g})] = 500 \text{ g} = 0.5 \text{ kg}$$

While this value is due to distributed deposit of smoke/soot particles, it compares very close to the results of Gregory, et al. (Ref 2).

The WIPP HEPA filter units have 21 HEPA Filters per unit in the flow path for the units. Considering all flow trains, a total of 42 filters are required to be plugged to stop flow. So if all of the filters are considered uniformly loaded and the prefilters are considered, the filtration system can handle up to 42 times 0.5 kg, or a total of 21 kg of smoke assuming that all the smoke is collected on the first bank of HEPA filters and the prefilters. Based on the HEPA design, since smoke generation during fires can range from 0.01 to 0.2 grams per grams burned, the amount of material to be burn to load the filter units up the maximum will take 2100 kg of cellulosic material or 105 kg of burning liquids. With diesel fuel having a density of 918 kg/m³ this is approximately a fire involving 30.2 gallons. Of course this is with clean HEPA filters in place at the start of the fire.

The quantity of smoke that can be generated will vary according to the type of material burned and the efficiency of the burning event. Not all of the material in underground will be expected to burn during most severe fires. Fire will be confined due to the distributed nature of combustibles with large expanse of noncombustible walls, floors and ceilings in between. Assuming that all of the smoke generated from any fire gets only to the HEPA filters is overly conservative. In practice, smoke will deposit on mine surfaces and be captured by prefilters. With potentially several thousand feet of mine to travel and 2,150 feet to the surface a significant amount of soot and smoke products could be deposited before getting to the prefilters. If control doors are closed to isolate the fire as required by 30 CFR § 57.4760, a minimal amount of soot and smoke products would make it to the HEPA filters. Thus the smoke that actually reaches the filters may be significantly less than that which is produced by the fire.

As stated the above did not consider the potential that the filters are dirty at the point of a fire (i.e approximately 30% loaded) or consider the likely possibility of soot/smoke deposit on the mine surfaces while being transported to the HEPA filters.

Based on the underground fire event of February 5, 2014, it is suspected that as much as 70-80% of smoke generated was deposited on mine surfaces and did not make it to the HEPA filters. So crediting a 50% smoke product loss is technically justified. Assuming the HEPA filters are dirty at the time of a fire event (30% loaded), approximately 0.15 kg of deposited material may be on the HEPA filters at the start of a fire. This leaves 0.35 kg available before filter plugging. So in the HEPA design, approximately 14.7 kg of deposited smoke will clog the filters. Assuming a fire occurs with 50% smoke deposits on the mine surfaces, the fire needs to generate 29.4 kg of smoke particles for the HEPA filters plugging. For burning liquids, this is 147 kg. For burning cellulosic material this is 2940 kg. With diesel fuel having a density of 918 kg/m³, this is equivalent to 42.3 gallons of diesel.

REFERENCES

1. Underground Ventilation System Design Description (SDD), SDD-VU00, Revision 19, 11/18/2013
2. Gregory, W.S., R. A. Martin, P. R. Smith and D. E. Fenton. "Response of HEPA Filters to Simulated Accident Conditions" 17th DOE Nuclear Air Cleaning Conference. pp. 1051-68.
3. Pruett, Tim, HEPA Soot Loading Determination Experiments – Final Report, Anderson, SC: Clemson University. CETL-2644-RPT-00002, 2005.
4. Coutts, D. Allan, Modeling Ventilation System Response to Fire, presented at the 2007 EFCOG Conference. http://www.efcog.org/wg/sa/docs/minutes/archive/2007%20Conference/SAWG_Website_Info/papers/FS-Coutts%20-%20Ventilation2.pdf.



WIPP Fire Protection Engineering

Section 1–Description

There are 5 broad classes of hydraulic fluids described in manufactures literature and FM Global data Sheet 7-98, July 2013. They are:

Mineral Based hydraulic fluids	temperature limits are dependent on additives.
HF-A High water base	temperature limits are 40° to 120°F
HF-B Water-in-oil emulsion,	temperature limits are 15° to 150°F
HF-C Water-glycol	temperature limits are 0° to 150°F
HF-D Synthetic type fluids	temperature limits are 20° to 200°F
Phosphate esters,	
Chlorinated hydrocarbons,	
Blends of phosphate esters, and chlorinated hydrocarbons	
Other compositions	

Per FM Global, the water based fluids, HF-A, HF-B, and HF-C requires the periodic addition of water when operated at elevated temperatures. Either excessive heating or cooling can upset emulsion stability. Loss of water from emulsions tends to reduce viscosity and increase the potential for ignition of the fluid.

All reviewed hydraulic fluids will burn under the correct set of conditions. This can be either an atomized spray fire from a small high pressure leak or a low pressure pool fire.

Fire Protection Engineering will published hose fire resistance requirements in the next revision of the program to prevent the addition of fire fuel from exposed hoses.

Fire Protection Engineering has not evaluated the compatibility with seals and gaskets or other hydraulic components which may result in excessive wear or leakage.

Section 2–Requirements

WIPP AHJ requires

1. All hydraulic fluids must have a flash point in excess of 400°F.
2. FM Global approval is required for HF-A, HF-B, HF-C and HF-D fluids
3. Machines using HF-A, HF-B, and HF-C fluids at elevated temperatures will require oil testing to ensures the correct concentration of water and the fire resistive capability is maintained.

Approved by:

Signature on file _____ Date October 23, 2014
L. Sherman Butler, FPE/P.E. AHJ
NWP Fire Protection Engineer,
Nuclear Waste Partnership, LLC

Attachment 5

Visibility Assessment From Burning 30 gallons of Diesel Fuel UG

IC 9476 INFORMATION CIRCULAR/2004, *Analysis of Mine Fires for All U.S. Metal/Nonmetal Mining Categories, 1990--2001* - Thirteen of the 16 mobile equipment hydraulic fluid/fuel fires became large fires because of the continuous flow of fluids from the pumps due to engine shutoff failure, lack of an emergency line drainage system, or lack of effective and rapid local firefighting response capabilities. In at least two instances during these fires, the cab was suddenly engulfed in flames, probably due to the ignition of flammable vapors and mists that penetrated the cab. Of note is that the hydraulic fluid fires subsequently involved the fuel system.

The following table summarizes anticipated CO levels in various UG volumes assuming uniform distribution from ventilation controlled burning of an assumed 30 gallon spill of diesel fuel over 12 minutes. At the bottom of the table the resulting visibility estimate is provided. Note that this is a vigorous fire that consumes 2.5 gallons of diesel per minute. The 30 minute tenability is limited to the first 0.5 minute in the near space (500 ft drift) and just 2.5 minutes in the single drift (3150 ft drift). A self-rescuer will begin heating in the close small space after 5 minutes. Since this is a hydrocarbon fire, the heat release rate is constant through the event.

time	CO Volume % 500 ft drift	CO Volume % 3150 ft drift	CO Volume % one- half mine	Total Fuel consumed kg
0.50	0.10%	0.025%	0.000%	3.96
1.00	0.20%	0.050%	0.000%	7.92
1.50	0.30%	0.075%	0.001%	11.88
2.00	0.40%	0.099%	0.001%	15.83
2.50	0.49%	0.124%	0.001%	19.79
3.00	0.59%	0.149%	0.001%	23.75
3.50	0.69%	0.174%	0.001%	27.71
4.00	0.79%	0.199%	0.002%	31.67
4.50	0.89%	0.224%	0.002%	35.63
5.00	0.99%	0.249%	0.002%	39.58
5.50	1.09%	0.273%	0.002%	43.54
6.00	1.19%	0.298%	0.002%	47.50
6.50	1.29%	0.323%	0.003%	51.46
7.00	1.39%	0.348%	0.003%	55.42
7.50	1.48%	0.373%	0.003%	59.37
8.00	1.58%	0.398%	0.003%	63.33
8.50	1.68%	0.422%	0.003%	67.29
9.00	1.78%	0.447%	0.004%	71.25
9.50	1.88%	0.472%	0.004%	75.21
10.00	1.98%	0.497%	0.004%	79.17
10.50	2.08%	0.522%	0.004%	83.12
11.00	2.18%	0.547%	0.004%	87.08
11.50	2.28%	0.572%	0.005%	91.04
12.00	2.38%	0.596%	0.005%	95.00
Visibility		4-5 ft	27 ft	2.5 gal/min

Note that the reduced visibility can have an adverse consequence on UG exiting since travel through smoke reduced visibility while wearing the self-rescuer will result in a reduction in the speed of foot travel. This makes the decision on requiring automatic fire suppression on diesel powered equipment very important and emphasizes the importance of properly maintained and operating automatic fire suppression systems.

There is a significant difference between ordinary combustibles and diesel fuel fires. Ordinary combusts produce less smoke and other byproducts of combustion. The chart below illustrates the degree of difference in the two fuels.

Fuel	Visibility 3150 ft drift	Visibility one-half mine
Diesel	4-5 ft	27 ft
Wood	40.5 ft	306 ft

ATTACHMENT 4
CORRECTIVE ACTION PLAN (CAP)-RELATED SCHEDULE FOR THE
AUTOMATIC FIRE SUPPRESSION SYSTEM

17 PAGES



U.S. Department of Energy
Carlsbad Field Office


Corrective Action Plan

Addressing the Accident Investigation Reports of:

the Underground Salt Haul Truck Fire at the Waste Isolation Pilot Plant, February 5, 2014,
and
the Phase 1, Radiological Release Event at the Waste Isolation Pilot Plant, on February 14, 2014
Revision 0

February 6, 2015


Prepared by:


Wes Mouser, Corrective Action Manager
Carlsbad Field Office

Approved by:


Jose R. Franco, Manager
Carlsbad Field Office

Approved by:


James Hutton, Acting Deputy Assistant Secretary
Safety, Security, and Quality Programs Office of Environmental Management

ACRONYMS

AIB	Accident Investigation Board
CAM	Continuous Air Monitor
CAP	Corrective Action Plan
CAS	Contractor Assurance System
CBFO	Carlsbad Field Office
CMR	Central Monitoring Room
CON	Conclusion of the Accident Investigation Board
CONOPS	Conduct of Operations
DOE	U.S. Department of Energy
DSA	Documented Safety Analysis
EM	Office of Environmental Management
EMCBC	Environmental Management Consolidated Business Center
FHA	Fire Hazards Analysis
HEPA	High Efficiency Particulate Air
HQ	Headquarters
ICS	Incident Command System
IEP	Integrated Evaluation Plan
JON	Judgment of Need
NFPA	National Fire Protection Association
NIMS	National Incident Management System
NMMP	Nuclear Maintenance Management Program
MP	Management Procedure
MSHA	Mine Safety and Health Administration
NWP	Nuclear Waste Partnership LLC
SSO	Safety Systems Oversight
TRU	Transuranic
TSR	Technical Safety Requirement
WIPP	Waste Isolation Pilot Plant

6.3 Fire Protection Program

6.3.1 Judgment of Need: JON 20

JON 20: *NWP and CBFO need to perform an integrated analysis of credible U/G fire scenarios and develop corresponding response actions that comply with DOE and MSHA requirements. The analysis needs to include formal disposition regarding the installation of an automatic fire suppression system in the mine.*

Approach

The CBFO Fire Protection SSO will review the NWP Fire Hazard Analysis, Baseline Needs Assessment and Emergency Planning Hazard Assessment to ensure credible underground fire scenarios and corresponding response actions comply with DOE and MSHA requirements. This review will also ensure the disposition of the installation of an automatic fire suppression system in the underground.

Corrective Actions for JON 20

Number	Action	Deliverable	Action Owner	Due Date
1	The CBFO Fire Protection SSO will oversee NWP evaluation of fire suppression systems to be used in the underground that are appropriate to the analyzed fire hazard. Systems will provide the level of safety specified in DOE-STD-1066-2012, <i>Fire Protection</i> .	Documented oversight activities.	CBFO Assistant Manager for the Office of Operations Oversight	In conjunction with NWP during the selection of fire suppression systems and complete review of NWP documents 30 days after they are submitted.

Number	Action	Deliverable	Action Owner	Due Date
2	<p>The CBFO Fire Protection, and Ventilation SSO will ensure NWP has fully analyzed credible underground fire scenarios through the review of the NWP Fire Hazard Analysis, the Baseline Needs Assessment and Emergency Planning Hazard Assessment.</p> <p>This analysis will also include integration of ventilation design and control door operations within the underground.</p>	Documented oversight activities.	CBFO Assistant Manager for the Office of Operations Oversight	30 days after NWP submittal of the NWP Fire Hazard Analysis, Baseline Needs Assessment and Emergency Planning Hazard Assessment

6.5.2 Judgment of Need: JON 34

JON 34: *NWP and CBFO need to identify and control the risk imposed by non-waste-handling equipment, e.g., combustible buildup, manual vs. automatic fire suppression system, fire-resistant hydraulic oil, etc., or treat waste-handling equipment and non-waste-handling equipment the same.*

Approach

The distinction between non-waste-handling and waste-handling equipment will be removed from the NWP program. A single NWP program will be used to evaluate all equipment. The CBFO's role is to oversee the NWP's development of the program.

Corrective Actions for JON 34

Number	Action	Deliverable	Action Owner	Due Date
	See CBFO Fire Report JON 14 action 7 and JON 24 action 5 (2, 3, and 7).			

Nuclear Waste Partnership LLC
Corrective Action Plan
Underground Salt Haul Truck Fire Event

[Redacted Signature]

NWP President & Project Manager

2/11/15

Date



A URS-led partnership with B&W and AREVA

ACRONYMS

AIB	Accident Investigation Board
BNA	Baseline Needs Assessment
CAP	Corrective Action Plan
CAS	Contractor Assurance System
CBFO	U.S. Department of Energy Carlsbad Field Office
CC	Contributing Cause
CFR	Code of Federal Regulations
CONOPS	Conduct of Operations
CMR	Central Monitoring Room
DC	Direct Cause
DNFSB	Defense Nuclear Facility Safety Board
DOE	U.S. Department of Energy
DOE O	U.S. Department of Energy Order
DSA	Documented Safety Analysis
EAL	Emergency Action Level
EOC	Emergency Operations Center
EPHA	Emergency Planning Hazards Assessment
ERO	Emergency Response Organization
FHA	Fire Hazard Analysis
FLIRT	First Line Initial Response Team
FP	Fire Protection
ICS	Incident Command System
JON	Judgment of Need
LTA	Less than Adequate
M&O	Management and Operating
MRT	Mine Rescue Team
MSHA	Mine Safety and Health Administration
NWP	Nuclear Waste Partnership LLC
PM	Preventive Maintenance
PPE	Personal Protective Equipment
RC	Root Cause
RCRA	Resource Conservation and Recovery Act
SCSR	Self-Contained Self Rescuer
SME	Subject Matter Expert
SSC	Structure, System, and Component
TBD	To Be Determined
TRU	Transuranic
TSR	Technical Safety Requirements
U/G	Underground
USQ	Unreviewed Safety Question
WIPP	Waste Isolation Pilot Plant

Judgment of Need (JON 13)

NWP management needs to reevaluate and modify the approach to conducting preventive and corrective maintenance on all underground vehicles such that combustible fluids are effectively managed to prevent the recurrence of fires.

Approach

NWP will revise Engineering and Maintenance/Work Control procedures to incorporate expectations for reviewing manufacturer's recommendations as part of the PM determination process. NWP will perform an engineering evaluation of manufacturers operating and maintenance manuals to determine the appropriate maintenance strategy for underground liquid fueled vehicles. In addition, equipment checklists and preventive maintenance procedures for underground vehicles will be revised to include applicable, vendor requirements. Waste handling and non-waste handling equipment maintenance will be evaluated using the same revised processes ensuring the appropriate level of rigor. This approach also includes an evaluation of the use of alternative fire resistant fluids in the hydraulic systems of underground equipment.

JON 13				
Number	Action	Deliverable	Action Owner	Due Date
1	Revise engineering procedures to provide a formal process to identify applicable maintenance requirements (vendor and other).	Approved, revised engineering procedures: WP 09-12, Evaluation of Technical Operability Adequacy of Facility Systems, Structures, and Components WP 09-CN3007, Engineering Change Order Preparation and Design Change Control	Engineering Manager	Complete

JON 13				
2	Revise maintenance procedures to incorporate engineering-identified maintenance requirements.	Approved, revised maintenance procedure: WP 10-WC3014, Periodic Maintenance Activity Screening Process	Work Control Manager	Complete
3	Review, and revise, as necessary, PM procedures for underground equipment.	Approved, revised PM procedures.	Work Control Manager	2/28/15
4	Revise operator pre-use checklists to address leaks and accumulation of combustible fluids.	Approved operator pre-use checklists.	Work Control Manager	3/13/15
5	Evaluate the use of alternative fire resistant fluids in the hydraulic systems of underground equipment.	Report of evaluation. Evaluation of high flashpoint fluids on UG vehicles, documented in ETO-U-022, and WIPP AHJ Determination of Fire Protection Guidance for Hydraulic Fluids, dated 10/23/14.	Engineering Manager	Complete
6	Implement recommendations from the evaluation of alternative fire resistant fluids.	Based on the outcome of the evaluations, NWP will implement appropriate changes. (No action is required as a result of the evaluations performed.)	Engineering Manager	Complete

JON 13				
7	Implement revised procedures.	<p>Training determination, training material and documentation of completion (e.g., rosters, required reading, etc.)</p> <p>Untrained personnel will not be authorized to perform the associated functions. (No action is required as a result of the evaluations performed.)</p>	Work Control Manager	Complete

Judgment of Need (JON 14)

NWP and CBFO need to develop and implement a rigorous process that effectively evaluates: changes to facilities, equipment, and operations for their impact on safety, e.g., plant operations review process; impairment and corresponding compensatory measures on safety-related equipment; and the impact of different approaches in maintaining waste-handling and non-waste-handling equipment.

Approach

NWP's Engineering, Maintenance, and Work Control organizations will work together to establish processes that effectively evaluate changes to facilities, equipment or operations, that will include considerations for impairments of safety-related equipment, even if this equipment is not credited in the safety basis. NWP will establish procedure guidance on the selection of preventive maintenance and calibration activities and to ensure the flow down of requirements from applicable engineering procedures. This procedure modification will also improve maintenance prioritization to support critical system operational readiness and will include provisions for trending of deficiencies. NWP will also revise the engineering processes to provide a standard uniform approach for changes to site systems and equipment and ensure evaluation via the USQ process, as appropriate. JON 13, Actions 1, 2, and 3, are actions to ensure waste handling and non-waste handling equipment maintenance will be evaluated using the same processes ensuring the appropriate level of rigor.

JON 14				
Number	Action	Deliverable	Action Owner	Due Date
1	Evaluate and revise NWP engineering procedure to require the cognizant system engineer to evaluate changes to facilities, equipment, and operations for impact to safety.	Approved procedures: WP 09-CN3007, Engineering Change Order Preparation and Design Change Control WP 09-CN3021, Component Indices WP 09-CN3022, Engineering File Room Operations	Engineering Manager	Complete

JON 14				
2	Evaluate and revise NWP USQ procedure to ensure changes to facilities, equipment, and operations are reviewed for their impact to safety.	Approved procedure.	Nuclear Safety Manager	5/31/15
3	Evaluate and revise the NWP work control procedure to ensure the appropriate SMEs are involved in evaluating changes to facilities, equipment, and operations.	Approved procedure.	Work Control Manger	Complete
4	Develop a list of critical plant systems and safety-related equipment.	Approved list of systems and equipment.	Operations Manager	3/31/15
5	Revise or develop an NWP procedure that provides instructions on evaluating the impact on critical systems and safety-related equipment impairments and guidance on establishing compensatory measures. Additionally, this procedure will direct the prioritization of maintenance activities.	Approved procedure.	Work Control Manger	3/31/15

JON 14				
6	Implement revised procedures.	Training determination, training material and documentation of completion (e.g., rosters, required reading, etc.) Untrained personnel will not be authorized to perform the associated functions.	Nuclear Safety Manager	4/31/15
	See JON 13 Actions 1 and 2 for the actions that revise the approach for maintaining waste-handling and non-waste-handling equipment to use the same processes ensuring the appropriate rigor.			

Judgment of Need (JON 19)

NWP needs to ensure that all requirements of DOE O 420.1C and MSHA are addressed in the BNA, with the results completely incorporated into implementing procedures and the source requirements referenced, and that training consistent with those procedures is performed.

Approach

In response to JON 19, NWP will revise the BNA to ensure the requirements of DOE O 420.1 C and MSHA are addressed in the appropriate procedures, sources are referenced, and personnel are trained.

JON 19				
Number	Action	Deliverable	Action Owner	Due Date
1	Revise BNA to ensure the requirements of DOE O 420.1 C and MSHA are addressed.	Submit BNA to CBFO.	Emergency Management Manager	3/30/15
2	Revise appropriate procedures including source requirements to implement the approved BNA.	Approved procedures.	Emergency Management Manager	5/30/15
3	Implement approved procedures.	Training determination, training material and documentation of completion (e.g., rosters, required reading, etc.) Untrained personnel will not be authorized to perform the associated functions.	Emergency Management Manager	6/30/15

Judgment of Need (JON 20)

NWP and CBFO need to perform an integrated analysis of credible underground fire scenarios and develop corresponding response actions that comply with DOE and MSHA requirements. The analysis needs to include formal disposition regarding the installation of an automatic fire suppression system in the mine.

Approach

In response to JON 20, NWP will revise the FHA to include a list of credible underground fire scenarios. NWP will then ensure that the resulting actions are incorporated into applicable response procedures and that personnel are trained. The disposition of the automatic fire suppression system is addressed in JON 19 action 1.

JON 20				
Number	Action	Deliverable	Action Owner	Due Date
1	Revise the FHA to include a list of credible underground fire scenarios.	Approved FHA.	Nuclear Safety Manager	3/31/15
2	Revise procedures to include corresponding actions to respond to credible underground fire scenarios.	Approved procedures.	Emergency Management Manager	6/30/15
3	Implement approved procedures.	Training determination, training material and documentation of completion (e.g., rosters, required reading, etc.) Untrained personnel will not be authorized to perform the associated functions.	Emergency Management Manager	8/31/15

JON 20				
	Analysis of the installation of an automatic fire suppression system in the underground is addressed in JON 19, Action 1.			

Judgment of Need (JON 34)

NWP and CBFO need to identify and control the risk imposed by non-waste-handling equipment, e.g., combustible buildup, manual vs. automatic fire suppression system, fire-resistant hydraulic oil, and treat waste-handling equipment and non-waste-handling equipment the same.

Approach

NWP has determined that a single system will be used to evaluate and impose requirements for nuclear and non-nuclear equipment. JON 13 and 14 corrective actions identify these requirements.

JON 34				
Number	Action	Deliverable	Action Owner	Due Date
	See JON 13 and 14 actions.			

ATTACHMENT 5
ETO-U-022 ENGINEERING ANALYSIS FOR FIRE-RESISTANT
HYDRAULIC FLUID

67 PAGES

TECHNICAL OPERABILITY EVALUATION

1. Number: ETO-U-022		2. Date/Time of Request: August 4, 2014		
3. Title: Evaluate the Potential Use of Fire Resistant Verses High Temperature Hydraulic Fluids on Underground (U/G) Mobile Equipment				
4. Revision: 0	5. Occurrence Report: (if applicable) Fire Investigation Report for the Waste Isolation Pilot Plant (WIPP) U/G February 2014 Fire Event Judgment of Need (JON)			
6. Equipment Identification Number(s): See attached list for evaluated U/G Mobile Equipment				
7. Executive Summary/Recommendations: <p>This analysis examines the characteristics of the currently used high temperature hydraulic fluids used in the U/G mobile equipment in comparison to the potential use of flame resistant hydraulic fluids. The use of each type of fluid is evaluated for their chemical characteristics derived from their respective Material Safety Data Sheets (MSDS). Combustion characteristics and likely initiation sources are analyzed to evaluate potential impacts and differences related to combustion initiation based on the type of fluid used.</p> <p>The analysis also examines expected impacts to equipment based on various manufacturing recommendations and commercial articles covering the use of fire resistant hydraulic fluids. A recommended actions list for fluid conversion is derived from the International Organization for Standardization (ISO) standards and manufacturer recommendations. Use of fire resistant verses high temperature hydraulic fluids in newly purchased equipment has been evaluated based on the availability and additional costs expected. Increased costs result from utilizing fire resistant fluids in mobile equipment, as this is not generally supported by manufacturers in the northern hemisphere.</p> <p>In addition to an analysis of the fluid characteristics and impacts on equipment, an evaluation of the equipment safety features has been analyzed. All U/G mobile equipment either has or will have automatic fire suppression systems. The effectiveness of the ability of fire suppression systems to mitigate incipient fires due to fluid combustion has been researched and conclusions have been derived. The analysis examines fuel loading based on the limited quantity of congealed and liquid state fluids that will be available during the incipient stage of a fire and the expected effectiveness of the fire suppression system to extinguish them should combustion start.</p> <p>The conclusions and recommendations of this analysis will be discussed in Section 23, "Conclusions" and Section 24 "Technical Recommendation".</p>				
8. Cognizant Engineer(s)/Alternate Cognizant Engineer(s): (print/sign) Jerry Golden – [Redacted] 9/20/14 Bob Pressett – [Redacted] 9/19/14 Eric Rodriguez – [Redacted] 9/18/14			Date: 9/20/14	
9. Reviewer: (print/sign) Gabriela Linehan [Redacted]			Date: 9/18/14	
10. Cognizant Engineering Manager: (print/sign) Tim Chambers J. Golden for Tim Chambers (per direction) [Redacted]			Date: 9/20/14	
11. Comments: <p>This report is in response to the February 2014 U/G Fire Event in which an aged haul truck with a manually activated fire suppression system caught fire during operation. This evaluation, in part, has been completed without full access to the haul truck which leaves some questions still unanswered as to whether the fire suppression system had actually been activated during the incipient stage of the fire. However, during an event in the WIPP U/G an incipient fire on a lift truck was successfully extinguished using the truck's manually activated fire suppression system. This event is further detailed in Section 22 "Evaluation" under the heading of Fire System Effectiveness and is attached as a reference document (reference Debrief of Lift Truck Fire 01231 December 31, 2010).</p>				
12. Distribution	Name	MSIN	Name	MSIN
Shift Operations Manager			Operations Dept. Manager	Scott Kennedy
Nuclear Safety Manager	James McCormick		Engineering Dept. Manager	Brian Stubbs
ES&H Dept. Manager	Tim Rotert		Other – Maintenance Manager	Dale Stapp
(Final distribution shall be determined by the Cognizant Engineering Manager)				

1. Number: ETO-U-022

4. Revision:0

13. Condition Under Evaluation:

Currently the U/G mobile equipment utilizes high temperature hydraulic fluids. This evaluation looks at the variation in characteristics between fire resistant and high temperature hydraulic fluids in relation to combustibility, needed changes on equipment that could result, considerations for procurement of new equipment, and some potential maintenance impacts. In addition, the ability of the fire suppression systems on the equipment are evaluated and included as part of the conclusion and recommendation.

14. Reference Documents:

- Mine Safety and Health Administration (MSHA)
 - 1) Title 30, Mineral Resources, Code of Federal Regulations (CFR), Part 35, Fire Resistant Hydraulic Fluids, Subpart A, General Provisions and Subpart B, Test Requirements
 - 2) Title 30, CFR, Part 75, Mandatory Safety Standards U/G Coal Mines, Subpart T, Diesel-Powered Equipment, Sub Section 1911, Fire Suppression Systems for Diesel-Powered Equipment and Fuel Transportation Units
- WIPP Fire Protection Program, Revision 14 (on file)
- MSDS AW-68 Hydraulic Oil
- MSDS W2799 Product No. CPS232740 Chevron Fire Resistant Fluid D
- MSDS W1094, Citgo A/W Hydraulic Oil 68
- MSDS Code/Part No 9639/9640, Flame Out Fire Resistant Hydraulic Fluid.
- MSDS MCS-2361, Fire Resistant Hydraulic Fluid
- Professional Technical Article: "Rules for Choosing a Fire-Resistant Hydraulic Fluid," Quaker Chemical Corporation, authors Robert Geer and Thomas Hazelton
- Technical Topic: "Fire-Resistant Fluids-Conversion and Compatibility"
- Excerpt from Machinery Lubrication, "Temperature Stability of Lubricants and Hydraulic Fluids," E.C. Fitch, Tribolics Inc.
- Store Stocked Item X-12-01672, Oil, Hydraulic 68, 55 Gallon Drum, Anti Wear
- Preventive Maintenance (PM)052003, "U/G Diesel Forklifts 500 and 1000 Hour Inspection and Maintenance"
- ANSUL Fire Suppression System Operation and Maintenance (O&M) Manual
- Excerpt from Getman Corporation Specification, Pressures, page A-64 25
- Specification and Service Data – Power Shift Transmission and Torque Converter
- Excerpt from Trouble Shooting Guide for the HR Model, 18000 Transmission, page 42
- Bishop, Roland J. "Maintenance and Analysis of Water-Glycol Hydraulic Fluids," Machinery Lubrication (1/2003)
- Excerpt from Getman Corporation Lubrication and Maintenance, page A-64 14
- Technical Specification Sandvik LH307-4 (11.06.2009)
- Excerpt from Ganie GS-2669 RT O&M Manual, Specifications, pages 2-3
- Service Manual, Sandvik EJC 145
- Commercial Intertech Service Manual, 315/330/350/365 Single & Tandem Oil Hydraulic Pumps & Motors
- Fletcher Sheet No. L-604, Lubrication Diagram for SV-D
- Fire Incident Report "U/G Salt Haul Truck Fire at the Waste Isolation Pilot Plant," dated February 5, 2014
- Washington TRU Solutions Debrief for Lift Truck Fire – December 31, 2010
- MRL Hydraulics, "Hydraulic System Design Considerations"

15. Affected System(s):

AU04, U/G Mobile Equipment

WH02, Contact-Handled (CH) Waste Handling Equipment

1. Number: ETO-U-022	4. Revision:0
WH03, Remote-Handled (RH) Waste Handling Equipment WH06, CH Transuranic Package Transporter Model 3 (TRUPACT-III) Waste Handling Equipment	
16. Design Requirements: Selection of hydraulic fluid requires that it be capable of providing the necessary lubrication over anticipated operating temperatures and pressures without degradation of pumps and seals throughout the equipment. All hydraulic fluids, including fire resistant fluids, are combustible and may catch fire under certain circumstances such as when they become an aerosol that come into contact with high temperature sources. Consideration of selection of a proper fluid that will meet these requirements also needs to be considered in relation to other equipment features including the adequacy of fire protection equipment.	
17. Regulatory Commitments: The high temperature and fire resistant hydraulic fluids meet the requirements of the MSHA.	
18. Safety Functions: The current Safety Basis and Fire Protection Program recognize both fire resistant and high temperature hydraulic fluids as being acceptable.	
19. Effect on Hardware: There may be an increase in mechanical failures related to the hydraulic system if changed from the high temperature to fire resistant. This increase may be caused by various solvents found in the fire resistant hydraulic fluid that may cause seal and pump failures. The glycol based and synthetic hydraulic fluids are incompatible, and changing fluids requires extensive flushing and preparation of the hydraulic system and components prior to using the new fluid. Additionally, the synthetic fluid requires special seal material and hose lining materials; the equipment that contains incompatible components will need to be fitted with seals and components. This introduces a margin of error as these new components could fall out of the range of tolerances that the original equipment specifications call for. Retrofitting equipment hydraulic systems (taking it apart, cleaning or flushing the system, and swapping parts) will require disassembly and reassembly of the equipment which introduces the risk of creating ignitable leaks that may not be detectable until operation of the equipment is resumed. This can itself create a major fire hazard during preoperational testing and then use. More potential hazards are explored and broken out by type of hydraulic fluid in Section 22, "Evaluation".	
20. Enabling Assumptions: All equipment fire suppression systems will be automatic with an automatic fuel shutoff function or have compensatory measures established. Cleanliness of equipment is to be enhanced through comprehensive pre-operational checks and maintenance activities that stress cleanliness.	
21. Evaluation: Overview of Hydraulic Fluids Considered <i>High temperature Hydraulic Fluid (hydraulic oil 68); MSDS No. 633430001</i> High temperature hydraulic fluid is currently used in the WIPP U/G mobile equipment. Composition is unchanged during use. It is rated with a low National Fire Protection Association (NFPA) 704:Standard System for the Identification of the Hazards of Materials for Emergency Response, fire hazard with a flash point greater than 400 degrees Fahrenheit (°F) (open cup flash point of 468°F) and does not have a listed auto-ignition temperature. Decomposition does not occur until the fluid combusts. Combustion products include carbon dioxide, carbon monoxide, smoke, fumes, unburned hydrocarbons and oxides of sulfur, phosphorus, zinc and/or nitrogen. A special property of this material is that even though it can burn it will not readily ignite. Fire-fighting instructions include use of the National Institute for Occupational Safety and Health (NIOSH) approved self-contained breathing apparatus. Use water or fog to keep fire exposed containers cool or to disperse vapors. Extinguishing media may be dry chemical, foam, carbon dioxide or water fog. Hazardous components are listed as paraffinic oil, petroleum oil, and zinc and zinc compounds. This product does not contain any components at concentrations above 0.1% which are considered carcinogenic by the Occupational Safety and Health Administration (OSHA). <i>General Information Glycol Based Fire Resistant Hydraulic Fluid; various MSDSs: products include CITGO FR-40XD Hydraulic Fluid (glycol), E.F. Houghton Houghto-Safe 620 (glycol), and Mobil Pyrogard D</i> Fire resistant synthetic (glycol based) hydraulic fluid composition changes during use. It is initially rated with a low NFPA 704 fire hazard with a flash point listed as 328°F after water evaporation. The auto ignition is listed at being above 800 °F. Due to the presence of water and glycol, the decomposition temperature has been identified as approximately 130°F. Though this material when in the correct composition is not easily ignited, it can support combustion. Materials from incomplete combustion include	

dense smoke, carbon monoxide, carbon dioxide, phosphorus oxides, and zinc. Firefighting instructions, according to one MSDS, list this material as presenting a fire hazard and that "it can catch fire and burn so vigorously and persistently that it creates a serious hazard." Another MSDS states "that firefighters and others exposed should wear self-contained breathing apparatuses". Extinguishing media may be dry chemical, foam, carbon dioxide or water fog. Hazardous component includes ethylene glycol which has an auto-ignition Temperature of 748.4°F and a flash point of 231.8°F (by the Tagliabue closed-cup method of determining flash points of flammable liquids).

Synthetic Fire Resistant Hydraulic Fluid; various MSDS: products include Quaker Quintolubric 822, Fyrquel 220, and Mobil Pyrogard 53

Fire resistant synthetic (non-glycol based) hydraulic fluid is rated with a low NFPA 704 fire hazard with a flash point is listed as 444°F. The auto ignition or fire point temperature is listed at being 470°F, which is a lower temperature than that of the high temperature hydraulic fluid. The decomposition temperature is listed as 174°F, also a lower temperature value than high temperature hydraulic fluid. The vapors released from this decomposition are harmful if inhaled. Though this material is not easily ignited it can support combustion. Materials from incomplete combustion include dense smoke, carbon monoxide, carbon dioxide, phosphorus oxides, and zinc. Firefighting instructions state that firefighters and others exposed should wear self-contained breathing apparatuses. Extinguishing media may be dry chemical, foam, carbon dioxide, or water fog.

Combustion Initiation Factors

Decomposition of hydraulic fluids is a combustion factor that results when hydraulic fluid is subjected to elevated temperatures. During operation large U/G mobile equipment hydraulic fluids will normally reach 180 to 200°F (reference Section 15 O&M Manual excerpt). High temperature hydraulic fluids will tolerate these temperatures with no decomposition. However, glycol based and synthetic hydraulic fluids will begin to decompose at the normal operating temperatures of U/G mobile equipment. Glycol based hydraulic fluids begin to decompose when they reach approximately 130°F. In the case of synthetic fire resistant hydraulic fluids decomposition temperature is listed as about 174°F. Decomposition changes the fire resistant properties of the glycol based and synthetic hydraulic fluids at normal operating temperature.

Decomposition causes off gassing and is noted on each MSDS for these fluids to be avoided. In the case of glycol based fluids any quenching effect provided by the glycol/water/oil mixture is lost when decomposition has progressed to the point that the glycol/water component of the fluid has evaporated. As stated in the MSDS, fire resistant glycol based hydraulic fluid will burn and may do so in a very persistent manner. Decomposition of glycol/water based fluids need to have prompt and consistent maintenance to restore the fluid composition balances that will result during operation of certain types of U/G mobile equipment. Synthetic hydraulic fluid operated at elevated temperatures (e.g., greater than 174°F) will release vapors which are harmful if inhaled, but may be less susceptible to the degradation of its effectiveness to resist combustion than are glycol based fluids.

Decomposition when combined with source heating may initiate combustion. Heat sources are found at specific locations of the equipment and include such components as torque converters, engine blocks, and transmissions. Both the high temperature hydraulic fluid and the fire resistant hydraulic fluids are combustible when temperatures are elevated sufficiently. However, fluids that have decomposed may be somewhat more susceptible to combustion. In the case of fire resistant hydraulic fluids, decomposition will occur at what is considered normal operating temperatures while the high temperature fluid will decompose only after combustion is initiated.

In cases where fluid is atomized under high pressure and an ignition source is present all hydraulic fluids, fire resistant or not, will ignite. The acceptance of a fluid as being fire resistance by MSHA and Factory Mutual Research Corporation (FMRC) comes down to the question; how likely is it that the fire will propagate? Item one of the first bullet in the Reference Documents (Section 15 of this analysis) contains a reference to MSHA standards that are used to classify and register a fluid as being fire resistant. Both types of fluid, whether fire resistant or high temperature, are ignitable under the right conditions. Generally, common stresses such as high fluid shear, fluctuating temperatures, non-expert operation of machinery, and routine mechanical wear of components can act together with environmental factors to create a situation where any fluid or its degraded products can catalyze combustion. However, fire resistant hydraulic fluids have been determined to limit the propagation of a fire, should one take place, and be treated appropriately at the fire inception.

Impacts on Existing Vehicles From Fluid Changes

Generally, heavy machinery is built to the idea of using mineral-based oil as the working fluid in hydraulic systems. For example, the Sandvik EJC 145 Load/Haul/Dump (LHD) Truck service documents include an excerpt from a Commercial Intertech pump service manual (513/330/350/365 models). The truck service manual Fluid and Lubricant Specifications section states on page four, to use a petroleum-based lubricant unless specified by the equipment manufacturer, and gives fluid property guidelines for choosing a hydraulic oil. Among these are requirements that the chosen oil does not exceed 4000 SUS at start up, does not drop below 80 SUS during normal operation, has a kinematic viscosity of 32-54 cSt at 104°F and 18-22 cSt at 140°F. General viscosity requirements, as taken from the Getman A-64 scissor lift O&M manual call for the following viscosity values; 50 SSU minimum at operating temperature, 7500 SSU maximum at starting temperature, 150-225 SSU at 100°F, and 44-48 SSU at 210°F. If the new fluid viscosity is out of the range that is called for by the equipment, this may lead to inefficiency, excess heat generation, and possibly component failure. If the fluid is too viscous at starting temperatures, it may become sludgy and clog at seals or pumps. If it is not viscous enough, it can leak through unseen or unnoticed spaces that are considered normal mechanical tolerances that petroleum-based lubricants do not penetrate. It may also inadequately lubricate bearings and moving surfaces, which is one of the primary purposes of the hydraulic systems used U/G at the WIPP. This results in quicker and excessive wear between surfaces in contact and heat generation in the fluid and surroundings from condition and convection.

The Commercial Intertech pump service manual states on page 14 to "not use fire resistant fluids or non-petroleum oils without

consulting [the] technical service department.” (Commercial Intertech) These fluid properties are extremely important, due to the operating conditions that are common in mining environments or even during normal surface operation. For example, some temperature spikes are not accounted for when determining normal operating temperatures. Cavitation leading to the compression of entrained air as a fluid passes through a pump can create a temperature spike in the fluid and exacerbate its heat cycle, subjecting it to high temperatures and making it prone to deterioration. (Temperature Stability of Lubricants and Hydraulic Fluids)

In all cases of a total change in hydraulic fluid type, the hydraulic system would require cleaning and in some cases modification to enhance fluid properties. This may range from flushing the hydraulic system to reduce the contamination between old and new fluids to relocating the pump in relation to the hydraulic reservoir to account for increased fluid weights and vapor pressure. In some cases, this may also mean replacing valves and parts to ensure compatibility with water glycol based lubricants. Switching fluid types will also require a modification in preventative maintenance procedures, fluid change intervals, and repair practices that are both common and adequate when working on petroleum based hydraulic fluid systems; this will ensure maintenance technician safety and familiarity with the system. The effects from the two most common options of fire resistant hydraulic fluids are described below.

Mineral Oil To Water Glycol and Water-Based Fluids

Water glycol based compounds are effective at lower operating temperatures, easy to clean if spilled, and are not subject to emulsification in the same way that oil-based fluids are. They are also inherently fire resistant. However, at operating temperatures that are found in the mobile equipment U/G at the WIPP, there are several things to consider. The first of these is that the fire resistant property of the compound will become compromised as the water is boiled off through high temperatures, fluid leaks, and evaporation. Additionally, water glycol compounds may not sufficiently thin at high operating temperatures in the same manner as mineral oil-based fluids, which will negatively affect the fluid performance as a lubricating agent, decrease pump and motor efficiency, and possibly lead to component damage and failure. Both oil based and water glycol fluids do not react well to fluid contamination through the introduction of water; hydraulic fluids emulsify and water glycol fluids will be chemically altered and create deposits. (MRL Hydraulics)

Water glycols are also incompatible with certain polymers and elastomers and will physically damage them. This is an issue as various pieces of mobile equipment that are used U/G do contain polymer seals. Water glycols also do not react well with typical paint; should the fluid encounter or regularly interact with these polymer or paint components, it would contribute to more rapid fluid degradation and component failure.

Mineral Oil To Synthetic Hydraulic Fluids

Synthetic fire resistant fluid can provide actuation and lubrication functions in the manner that petroleum based lubricants do. However, it is crucial to find a fluid with adequate viscosity index additives to improve fluid performance and approximate the behavior of petroleum based lubricants. Improper fluid performance over the wide range of temperatures that machinery is subject to from startup to operating temperatures can shorten the working lifespan of both the fluid and of the equipment that is being lubricated or actuated by the fluid.

Initially converting from a mineral based fluid to either a water-based or synthetic fluid may lead to deterioration of the fire-resistant properties of the new fluid if the system is not cleaned thoroughly before the fluid type change is performed. Additionally, the machinery provides an imperfect barrier between mechanical components and the outside world; contamination of the fluid through chemical modification or dilution can cause problems that are not easily indicated by something as simple as a clogged filter. Some fire resistant hydraulic fluids are hygroscopic and break down easily in the presence of moisture; this aspect of the fluids may appear beneficial in that the operating environment is typically dry and dusty. However, this is not always the case as dust-control-related spraying of the mine occurs regularly and moisture is unavoidable. The dry environmental operating condition may also contribute to equipment becoming dirty and running at higher temperatures than specified.

Many pieces of equipment either contain a disclaimer that performance is not guaranteed with the use of a hydraulic fluid other than the recommended type or an equivalent type, or allows for alternate fluid use with equipment modification and manufacturer consultation. For instance, the Genie GS-2669 RT Scissor Lift O&M specifications allow for the use of a specific synthetic fluid, but require additional equipment and installation instructions.

Newly Purchased Equipment Impacts

The use of a non-manufacturer-recommended fluid for a critical mechanical system in the equipment may affect the warranties and services offered by the equipment manufacturer, especially if the fluid change calls for equipment reconfiguration to maximize the potential of the fluid properties. Companies will likely not be able to produce records or guarantee the performance of a piece of equipment due to the lack of data about long-term effects of operating that equipment using a non-petroleum based fluid.

Running equipment with a synthetic hydraulic fluid would mean higher costs, both initially and also in order to keep up with maintenance requirements on equipment. Purchasing equipment built to use the proposed new fluid and purchasing the fluid itself for regular fluid changes would all contribute to this higher cost. Since several of the fire resistant hydraulic fluids under consideration in this analysis would be considered relatively new, there is a chance that the equipment being purchased has not undergone thorough performance testing with anything other than petroleum-based hydraulic fluid. This creates a margin of error or uncertainty in equipment performance and longevity.

Fire System Effectiveness

The WIPP Fire Safety Program has determined that all U/G mobile equipment that is required to be equipped with fire suppression systems will have automatically activated suppression systems. If the mobile equipment does not have an automatic suppression system then compensatory measures will be established to ensure effective control of incipient fires.

In an event experienced in the U/G the effectiveness of fire suppression systems has been demonstrated during an event similar to the February 2014 fire event, with the exception that the fire suppression system had been activated during the early stages of fire and the fire had been extinguished (reference Debrief of Lift Truck Fire 01231 December 31, 2010). The debrief report accounted that the incipient fire had progressed further than would have been expected had the extinguishing system been automatic. When the fire had progressed enough to be evident to the operators an automatic system would already have been discharged. This event indicates that the fire suppression systems are effective in extinguishing incipient fires even if the fire has progressed further than an automatic system would protect against.

The use of automatic suppression systems increases the effectiveness of the fire suppression system over use of manually activated systems. The use of dry chemical suppression systems is supported by MSDS information as being effective against hydraulic fluid fires. The MSDS for all the types of hydraulic fluids so far examined indicate that the dry chemical extinguishers currently used in the fire suppression systems is a recognized effective fire-fighting compound. The method of dry chemical delivery is through strategically placed nozzles that are designed to envelop the areas likely to initiate ignition of the fluid with a cloud of dry chemical fire extinguishment. During procurement evaluations, the effectiveness of the suppression system is analyzed to ensure that it meets the MSHA requirements and manufactures specifications for protection of personnel and the equipment. (Section 15 Reference Documents, first bullet, item 2).

Fire system effectiveness is in some degree reliant on vehicle cleanliness. As stated previously, any currently available type of hydraulic fluid will combust given the right ignition source. Though fire resistant fluids are supposed to limit fire propagation there is indication that at least with glycol based fire resistant fluids, a serious and persistent fire may result. This threat increases as the fluid ages during normal use. The resulting conclusion of this is that an important factor associated with fire suppression effectiveness may also include the cleanliness of the vehicle. Based on the amount of dry chemical available and the nature of the hydraulic fluids used at the WIPP it is expected that incipient fires will be suppressed after onboard suppression system activation. There is much more certainty of complete extinguishing of an incipient fire with less fuel load available. Automatic fire suppression systems will shut down the equipment, turn off the fuel flow, relieve hydraulic pressure, and extinguish the fire.

Residual heat may still be a factor for a length of time after the initial fire suppression is performed. Any vehicle that is encrusted with oil based fluids (grease, engine oil, or any of the numerous fluids that are necessary to equipment operation) will present a condition that may facilitate a combustion reaction and may require more vigilant oversight after the fire is initially extinguished. For these reasons, vehicle cleanliness is a crucial component in fire prevention and a key preventative maintenance step for any vehicle. Machinery cleaning is addressed as a separate issue in engineering evaluation ETO-U-006, Evaluate Waste Cleanliness of Mobile Equipment. Ensuring cleanliness should be considered a process that goes hand-in-hand with scrutinizing fluid choice and maintenance practices. The combination of regular equipment cleaning as part of general maintenance procedures and the use of a high temperature hydraulic fluid will mitigate the risk of a fire by controlling a primary fire catalyst; combustible material available.

22. Conclusions:

Based on the characteristics of fire resistant fluids, they are incompatible with the WIPP U/G mobile equipment evaluated. It was found fire resistant fluids in equipment operated at temperatures above 130 degrees Fahrenheit (54 degrees Celsius); glycol based and synthetic hydraulic fluids decompose and lose fire resistant properties at this temperature range. Therefore, glycol based and synthetic hydraulic fluids are not recommended for WIPP U/G mobile equipment that may subject the hydraulic fluid to normal operating temperatures of 180 to 200 degrees Fahrenheit.

From a cost perspective; it is more efficient to improve cleaning procedures on equipment than it is to purchase new equipment, retrofit old equipment, and start purchasing a more expensive fire resistant hydraulic fluid. From a safety perspective; it is safer to use fire resistant hydraulic fluid (most notably synthetic fluid) but it also introduces a factor of uncertainty as maintenance personnel are trained and equipment is operated under routine conditions with a different kind of fluid. It is also a safety issue as water-based hydraulic fluids separate, which creates by-products that could harm machinery and personnel. From a maintenance perspective; with water-based fluids in particular, it is important to maintain the proper alkalinity and water content. If the water content is too high, it can cause premature wear rate of hydraulic pumps; this increases dramatically as water content increases. On the other hand, as water evaporates, the fluid viscosity increases, which can lead to thermal degradation and oxidation. Rigorous testing and fluid replacement schedules would need to be implemented to maintain proper fluid alkalinity and water content, and also to ensure adequate viscosity over the range of operating and environmental temperatures (to be determined at said water content level). Additionally, while it is necessary to analyze fluid quality for physical and chemical cleanliness, ion chromatography and ferrographic analysis of the fluid may be required to identify acidity, contaminants, and solid particles in the fluid.

23. Technical Recommendation:

Hydraulic Fluid Recommendation

The general recommendation is to use high temperature hydraulic fluid in the WIPP U/G mobile equipment due to the fluid's stability from decomposition and inherent resistance to ignition. As has been discussed, all hydraulic fluids will catch fire and in some cases the fire resistant fluids may be easier to ignite. The fire resistant fluids will be resistant to fire propagation but will continue to burn as long as an ignition source is present. In a vehicle fire some degree of ignition source could be present for a period of time as heat sources such as heated metal housings may persist.

If fire resistant fluids are selected for use for the WIPP U/G mobile equipment, it is recommended that these fluids be used only for new equipment. The new mobile equipment will be specifically purchased with system components and seals that are compatible with fire resistant fluid.

The use of fire resistant hydraulic fluids for existing U/G mobile equipment is not recommended due to the issues (discussed in Section 22, Evaluation) that show increased likely hood of component and seal failures that could actually result in increased potential for initiating combustion.

This type of fluid when used in conjunction with automatic fire suppression systems and more efficient cleaning systems will ensure that should any vehicle fire be initiated it will be extinguished in its incipient stage.

Fire Suppression System Recommendation

It is recommended that all U/G mobile equipment that run in excess of 60 hp or are filled to more than 25 gallons of fuel, be equipped with a suitable automatic fire suppression system. The fire suppression system should be dry chemical type.

24. Attachments (this field is used for any pictures, spreadsheets, etc. and will expand)

Evaluated Mobile Equipment List

Excerpt from Ansul Fire Suppression/Detection System Owner's Manual

MSDS for the following fire resistant hydraulic fluids;

- CITGO FR-40XD Hydraulic Fluid MSDS
- E.F. Houghton Houghto-Safe 620 MSDS
- Mobil Pyrogard D MSDS
- Quaker Quintolubric 822 MSDS
- Fyrquel 220 MSDS
- Mobil Pyrogard 53 MSDS

TECHNCIAL OPERABILITY EVALUATION INSTRUCTIONS

1. Obtain number from the Engineering File Room.
2. Date and Time request received.
3. Title of this Technical Operability Evaluation.
4. Revision number of this Technical Operability Evaluation – if new Technical Operability Evaluation make Revision 0.
5. Occurrence Reports related to this Technical Operability Evaluation.
6. All equipment ID numbers related to this Technical Operability Evaluation.
7. A brief description of the main points and the recommendations.
8. Name and signature of Cognizant Engineer/Alternate Cognizant Engineer.
9. Name and signature of reviewer and date reviewed.
10. Name and signature of Cognizant Eng Manager and date reviewed.
11. Comments, if any.
12. Distribution: See form.
13. Describe the condition being evaluated, how it was discovered and describe the concern or issue. Provide enough information that someone not familiar with the SSC will understand.
14. Identify all the references used to analyze the condition, including but not limited to, drawings, design specifications, calculations, safety analyses, unreviewed safety questions (USQs), procedures, operator rounds, DSA, TSR, the standards/requirements identified document (SRIDS).
15. Identify the SSC affected. This shall address the SSC that is directly affected and any other SSC that is indirectly affected (especially support equipment or other safety related equipment).
16. Identify the design requirements (basis, baseline) including operational parameters, set points, codes and standards for the specific area of concern.
17. Identify the regulatory commitments, including LCOs, Administrative Controls, TSR surveillances, and Environmental Specification Requirements for the specific area of concern.
18. State the safety function(s) of the SSC directly affected by the degraded or nonconforming condition.
19. Determine the short-term and long-term effects on the hardware. Discuss impact the condition has on interfaces, the upstream or downstream components/systems, interlocks, etc.
20. Document any assumptions made in the course of the evaluation and the Technical Operability Recommendation.
21. Describe the evaluation based on the facts from the previous sections.
22. Describe the conclusions that can be derived based on the facts from the Technical Operability Evaluation. Describe the results of the condition evaluated. This could be for example, compliance of the SSCs with the technical baseline, off normal operating conditions, or if current testing practices satisfy TSR requirements or other scope as requested.
23. Identify recommendations or actions to be taken that will resolve the issue or concern based on the conclusions described in the preceding section and include the consequences of not implementing them. Determine if recommendations should be documented in ARs, WCDs, WFs, ECOs, NCRs, etc.
24. Include pictures, spreadsheets, results of any completed tests, inspections, or surveillances, as applicable.

Evaluated U/G Mobile Equipment

Data for each item is found in its respective O&M specifications

Sandvik LH307-4 LHD Truck, equipment ID no. 74-U-138, acquired 2010

- Mercedes-Benz OM 906 LA 6-cylinder diesel engine
- 24V battery
- 28V, 80A alternator
- 210 L (55 gal) fuel tank capacity
- Filling capacity for hydraulic system is approximately 215-230 L (approx. 56.8-60.8 gal)
- Hydraulic fluids with wear preventative characteristics of DIN 51524 HVLP (lubricants with additives that protect from corrosion, oxidation, and wear, and that give a VI (viscosity index) > 140) or ISO 6743-4 HV (high VI lubricants) can be used
- Fire suppression system consisting of both dry chemical (Ansul A-101/LT-A-101) and liquid agent (premixed solution of LVS wet chemical). LVS-30 (30-gallon) system discharges for two minutes with two nozzles activated (6 nozzles on system). Contains 11.3 kg (24.9 lbs) FORAY multi-purpose dry chemical. Activation of the fire suppression system causes automatic engine shutdown.

Genie GS-2669 RT Scissor Lift, equipment ID no. 74-U-611, acquired 2013

- Kubota D1105 engine, 24.8 hp at 3,000 rpm
- 12 V DC battery
- 40 A, 14 V DC alternator
- 10 gallon fuel tank capacity
- 19.5 gallon hydraulic tank capacity (with outriggers)
- Suggested hydraulic fluid is Chevron Rando HD MV equivalent (multi-viscosity grade, VI of 200), which is fully compatible and mixable with Dexron-III oils
- Optional fire-resistant fluids include UCON Hydrolube HP-5046 and Quintolubric 822; Genie specifications require additional equipment and special installation instructions for the approved optional fluids

Getman A-64 Scissor Lift, equipment ID no. 74-U-606, acquired 2007

- Detroit Diesel engine OM904, 174 hp @ 2200 rpm
- 24 V, 100 A alternator
- Maintenance-free 12 V DC battery
- 30 gallon fuel tank capacity
- 40 gallon hydraulic reservoir, gear type hydraulic pump
- Hydraulic fluid recommendations; 50 SSU minimum at operating temperature, 7500 SSU maximum at starting temperature, 150-225 SSU at 100°F (generally), 44-48 SSU at 210°F (generally), viscosity index of 90 minimum, aniline point of 175 minimum (a tool characterizing the composition of hydrocarbon compounds and oils)
- Normal ambient temperature is 0-100°F, normal system temperature is 100-180°F

Sandvik EJC 145 LHD Truck, equipment ID no. 74-U-002C, acquired 2007

- 6 cylinder Deutz F6L 912FW diesel engine, 190 hp at 2300 rpm
- 2 x 12V DC batteries
- 24 V, 60 A alternator
- Fuel tank capacity
- 80 gallon hydraulic fluid capacity
- Full hydraulic open-center system with one gear hydraulic pump
- Hydraulic fluid specifications call for manufacturer/technical department approval before using a fire resistant or synthetic fluid
- Recommendations from Sandvik include; "Unless otherwise specified by the original equipment manufacturer, use a petroleum based (mineral type), premium quality oil with anti-wear additives" and "Caution: the chosen oil must not contain additives harmful to BUNA-N (Nitrite), Viton, or neoprene rubber compounds," and "Do not use an oil that exceeds 4000 SUS at start-up, or one that drops below 80 SUS during normal operation" (Service Manual, Fluid and Lubricant Specifications, p. 4-5)
- The chosen hydraulic oil must meet a list of physical properties that include the following; minimum VI of 90, specific gravity of 0.84 to 0.90 at 16°C (approx. 61 °F), kinematic viscosity of 32-53 cSt at 104°F, and kinematic viscosity of 5-7 cSt at 212°F

Fletcher SV4D Mobile Scaler, equipment ID no. 74-U-115, acquired 1993

- 6 cylinder Deutz F6L 912W diesel engine, 82 bhp, maximum 2300 prm
- 40 gallon fuel tank capacity
- 100 gallon hydraulic system capacity, hydraulic pump rate of 43 gallons per minute, 3000 lb maximum pressure
- Recommended hydraulic fluid is mineral-oil based hydraulic fluid, with viscosity of 81-167 SUS



CITGO FR-40 XD Hydraulic Fluid

Material Safety Data Sheet

CITGO Petroleum Corporation
P.O. Box 4689
Houston, TX 77210

MSDS No. 648325001
Revision Date 10/1/2009

IMPORTANT: This MSDS is prepared in accordance with 29 CFR 1910.1200. Read this MSDS before transporting, handling, storing or disposing of this product and forward this information to employees, customers and users of this product.

Emergency Overview

Physical State Liquid.

Color Fluorescent, Pink. **Odor** Musty, ammonia-type odor

WARNING:

Harmful or fatal if swallowed.

Can cause liver and kidney damage.

Can be absorbed through the skin.

Can cause eye and skin irritation.

Vapor can cause temporary blurring of vision.

Thermal decomposition may release hazardous gases.

Hazard Rankings

	HMIS	NFPA
Health Hazard	* 2	1
Fire Hazard	0	0
Reactivity	0	0

* = Chronic Health Hazard

Protective Equipment

Minimum Recommended
See Section 8 for Details



SECTION 1. PRODUCT IDENTIFICATION

Trade Name	CITGO FR-40XD Hydraulic Fluid	Technical Contact	(800) 248-4684
Product Number	648325001	Medical Emergency	(832) 486-4700
CAS Number	Mixture.	CHEMTREC Emergency (United States Only)	(800) 424-9300
Product Family	Fire-resistant hydraulic fluid		
Synonyms	Hydraulic fluid; CITGO® Material Code No.: 648325001. Previous name CITGO Glycol FR-40XD® Hydraulic Fluid		

SECTION 2. COMPOSITION

Component Name(s)	CAS Registry No.	Concentration (%)
Diethylene glycol	111-46-6	40 - 50
Water	7732-18-5	35 - 50
Alkyl alkoxy amine	NJTS: 648325001	<5
Proprietary Ingredients	Proprietary	<2

SECTION 3. HAZARDS IDENTIFICATION

Also see Emergency Overview and Hazard Ratings on the top of Page 1 of this MSDS.

Major Route(s) of Entry Skin contact. Eye contact. Inhalation. Ingestion.

Signs and Symptoms of Acute Exposure

CITGO FR-40 XD Hydraulic Fluid

Inhalation	Short-term harmful health effects are not expected from vapor generated at ambient temperatures. Overexposure to glycol and glycol ether vapors or mists can cause respiratory tract irritation. In general, this effect becomes noticeable with airborne concentrations of approximately 60 ppm. Cough and a burning sensation in the trachea are symptoms of inhalation exposures above 80 ppm. Overexposure to glycols and glycol ethers can cause central nervous system depression. Symptoms include headache, weakness, nausea, vomiting, dizziness, loss of coordination and increased heart rate. Seizures, convulsions, coma and death are possible at extremely high concentrations.
Eye Contact	This product can cause eye irritation with short-term contact with liquid, mists or vapor. Symptoms include stinging, watering, redness, and swelling.
Skin Contact	This product can cause mild, transient skin irritation. The severity of irritation will depend on the amount of material that is applied to the skin and the speed and thoroughness that it is removed. Symptoms include redness, itching, and burning of the skin. Repeated or prolonged skin contact can produce moderate irritation (dermatitis).
Ingestion	The predominant hazard associated with this product is ingestion of large quantities at a single time. During the first 12 hours, the patient may experience central nervous system effects such as headache, weakness, nausea, dizziness, loss of judgement and coordination. In mild cases, the patient may appear to be drunk but without the breath odor of alcohol. In more severe cases the patient will experience cardiopulmonary symptoms including mild high blood pressure, abnormally fast heartbeat and elevated breathing rate. Convulsions and coma are possible. Kidney complications, including slow or no production of urine may be expected 24 to 72 hours after ingestion. Also, injury to the liver can occur.
Chronic Health Effects Summary	Certain glycols and glycol ethers have been associated with birth defects in laboratory animals at doses which were toxic to the mother. In repeated exposure studies, certain glycols produced skin irritation and severe eye irritation with corneal damage in laboratory animals. Chronic ingestion studies with lower molecular weight glycols resulted in kidney damage with calcium deposits. Also, calcium oxalate crystals were identified in brain tissue of experimental animals. Limited information is available regarding the effects of chronic inhalation of glycol and glycol ethers in humans. Overexposure to vapor, aerosol or mist generated can result in eye and respiratory tract irritation, dizziness and nausea.
Conditions Aggravated by Exposure	Persons with preexisting kidney or liver diseases may have their conditions aggravated by ingestion of or overexposure to this product.
Target Organs	May cause damage to the following organs: kidneys, liver, skin, eye, lens or cornea
Carcinogenic Potential	This product is not known to contain any components at concentrations above 0.1% which are considered carcinogenic by OSHA, IARC or NTP.

OSHA Hazard Classification is indicated by an "X" in the box adjacent to the hazard title. If no "X" is present, the product does not exhibit the hazard as defined in the OSHA Hazard Communication Standard (29 CFR 1910.1200).

OSHA Health Hazard Classification				OSHA Physical Hazard Classification					
Irritant	<input checked="" type="checkbox"/>	Sensitizer	<input type="checkbox"/>	Combustible	<input type="checkbox"/>	Explosive	<input type="checkbox"/>	Pyrophoric	<input type="checkbox"/>
Toxic	<input type="checkbox"/>	Highly Toxic	<input type="checkbox"/>	Flammable	<input type="checkbox"/>	Oxidizer	<input type="checkbox"/>	Water-reactive	<input type="checkbox"/>
Corrosive	<input type="checkbox"/>	Carcinogenic	<input type="checkbox"/>	Compressed Gas	<input type="checkbox"/>	Organic Peroxide	<input type="checkbox"/>	Unstable	<input type="checkbox"/>

SECTION 4. FIRST AID MEASURES

Take proper precautions to ensure your own health and safety before attempting rescue or providing first aid. For more specific information, refer to Exposure Controls and Personal Protection in Section 8 of this MSDS.

Inhalation	Move victim to fresh air. If victim is not breathing, immediately begin rescue breathing. If breathing is difficult, 100 percent humidified oxygen should be administered by a qualified individual. Seek medical attention immediately. Keep the affected individual warm and at rest.
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CITGO FR-40 XD Hydraulic Fluid

Eye Contact	Flush eyes with cool, clean, low-pressure water for at least 15 minutes. Hold eyelids apart to ensure complete irrigation of the eye and eyelid tissue. If easily accomplished, check for and remove contact lenses. If contact lenses cannot be removed, seek immediate medical attention. Do not use eye ointment. Seek medical attention.
Skin Contact	Remove contaminated shoes and clothing. Wash exposed skin with mild soap and water. Seek medical attention if tissue appears damaged or if pain or irritation persists. Thoroughly clean contaminated clothing before reuse. Clean or discard contaminated leather goods.
Ingestion	If swallowed, give two glasses of water to drink. Never give anything by mouth to a person who is not fully conscious. Induce vomiting only upon the advice of a physician. Seek medical attention immediately.
Notes to Physician	<p>INGESTION: Ingestion of lower molecular weight glycols have produced an accumulation of glycolate and glyoxalate which form lactate and results in metabolic acidosis, renal failure, heart failure, and pulmonary edema. Kidney insufficiency has been reported after two to three days of ingestion. The kidney failure may be caused by accumulation of calcium oxalate crystals. Urinalysis may show albuminuria, hematuria and oxaluria. Also, liver injury may occur.</p> <p>Carefully consider the decision to induce or not to induce emesis in ingestions. Activated charcoal may be useful.</p>

SECTION 5. FIRE FIGHTING MEASURES

NFPA Flammability Classification	Not applicable.		
Flash Point	Open cup: 149°C (300°F) (Cleveland.). (After water component evaporates.)		
Lower Flammable Limit	No data.	Upper Flammable Limit	No data.
Autoignition Temperature	Not available.		
Hazardous Combustion Products	Carbon dioxide, carbon monoxide, smoke, fumes, unburned hydrocarbons, aldehydes and other products of incomplete combustion.		
Special Properties	This is an aqueous solution. After the water component evaporates, the remaining material will burn. Do not direct a solid stream of water or foam into hot, burning pools as this may cause frothing and increase the intensity of the fire.		
Extinguishing Media	Use dry chemical, "alcohol" foam, Carbon Dioxide or Halon. Carbon dioxide and inert gas can displace oxygen. Use caution when applying carbon dioxide or inert gas in confined spaces.		
Protection of Fire Fighters	Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies.		

SECTION 6. ACCIDENTAL RELEASE MEASURES

Take proper precautions to ensure your own health and safety before attempting spill control or clean-up. For more specific information, refer to the Emergency Overview on Page 1, Exposure Controls and Personal Protection in Section 8 and Disposal Considerations in Section 13 of this MSDS.

Do not touch damaged containers or spilled material unless wearing appropriate protective equipment. Slipping hazard; do not walk through spilled material. Stop leak if you can do so without risk. For small spills, absorb or cover with dry earth, sand, or other inert non-combustible absorbent material and place into waste containers for later disposal. Contain large spills to maximize product recovery or disposal. Prevent entry into waterways or sewers. In urban area, cleanup spill as soon as possible. In natural environments, seek cleanup advice from specialists to minimize physical habitat damage. This material is miscible in water. Comply with all laws and regulations.

SECTION 7. HANDLING AND STORAGE

Handling	Protect from temperature extremes and direct sunlight. Maintain operating temperatures as low as possible. Do not allow operating temperatures to exceed 66° C (150° F). Loss of water through evaporation during use can reduce safety and performance efficiency. To ensure fire resistance, water content must be maintained above 35%. Product container is not designed for elevated pressure. Do not pressurize, cut, weld, braze solder, drill, or grind on containers. Do not expose product containers to flames, sparks, heat or other potential ignition sources. Empty containers may contain product residues that can ignite with explosive force. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers and/or waste residues of this product.
Storage	Keep container tightly closed and dry. Protect against physical damage. Do not store with strong oxidizing agents. Keep away from heat, flame and all other potential ignition sources. Do not store at temperatures above 49° C (120° F) or in direct sunlight. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers or waste residues of this product.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of mists and/or vapors below the recommended exposure limits (see below). An eye wash station and safety shower should be located near the work-station.
Personal Protective Equipment	Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to OSHA regulations. The following pictograms represent the minimum requirements for personal protective equipment. For certain operations, additional PPE may be required.



Eye Protection	Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. Wear goggles if splashing or spraying is anticipated. Wear goggles and face shield if material is heated above 125°F (51°C). Have suitable eye wash water available.
Hand Protection	Use gloves constructed of glycol-resistant materials such as butyl rubber or polyvinyl chloride (PVC). Use heat-protective gloves when handling product at elevated temperatures.
Body Protection	Use clean protective clothing if splashing or spraying conditions are present. Protective clothing may include long-sleeve outer garment, apron, or lab coat. If significant contact occurs, remove oil-contaminated clothing as soon as possible and promptly shower. Launder contaminated clothing before reuse or discard. Wear heat protective boots and protective clothing when handling material at elevated temperatures.
Respiratory Protection	If elevated airborne concentrations above applicable workplace exposure levels are anticipated, a NIOSH-approved organic vapor respirator equipped with a dust/mist prefilter should be used. Protection factors vary depending upon the type of respirator used. Respirators should be used in accordance with OSHA requirements (29 CFR 1910.134).
General Comments	Use good personal hygiene practices. Wash hands and other exposed skin areas with plenty of mild soap and water before eating, drinking, smoking, use of toilet facilities, or leaving work. DO NOT use gasoline, kerosene, solvents, or harsh abrasive skin cleaners.

Occupational Exposure Guidelines

Substance	Applicable Workplace Exposure Levels
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CITGO FR-40 XD Hydraulic Fluid

Diethylene glycol

AIHA WEEL (United States).

TWA: 10 mg/m³ 8 hour(s).

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES (TYPICAL)

Physical State	Liquid.	Color	Fluorescent, Pink.	Odor	Musty, ammonia-type odor
Specific Gravity	AP 1.1 (Water = 1)	pH	Not applicable.	Vapor Density	AP 2.75 (Air = 1)
Boiling Range	AP 130°C (AP 266°F)			Melting/Freezing Point	AP -30°C (AP -22°F)
Vapor Pressure	AP 7 mm of Hg (@ 20°C)			Volatility	AP 590 g/l VOC (w/v)
Solubility in Water	Easily soluble in cold water.			Viscosity (cSt @ 40°C)	41
Flash Point	Open cup: 149°C (300°F) (Cleveland.). (After water component evaporates.)				
Additional Properties	No Additional Information.				

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability	Stable.	Hazardous Polymerization	Not expected to occur.
Conditions to Avoid	Not considered to be reactive. Avoid strong bases, strong acids, strong oxidizing agents and materials reactive with hydroxyl compounds.		
Materials Incompatibility	Strong acids, alkalis, and oxidizers such as liquid chlorine and oxygen.		
Hazardous Decomposition Products	No additional hazardous decomposition products were identified other than the combustion products identified in Section 5 of this MSDS.		

SECTION 11. TOXICOLOGICAL INFORMATION

For other health-related information, refer to the Emergency Overview on Page 1 and the Hazards Identification in Section 3 of this MSDS.

Toxicity Data	Diethylene glycol
	ORAL (LD50): Acute: 12565 mg/kg [Rat]. 13300 mg/kg [Mouse]. 2690 mg/kg [Rabbit].
	DERMAL (LD50): Acute: 11890 mg/kg [Rabbit].

The major hazard from diethylene glycol occurs following the ingestion of relatively large single doses. Diethylene glycol can cause central nervous system depression and hydropic degenerative lesions in the liver and kidney. Anuria from tubular degeneration can prove fatal within a few days. In a 1937 case study, 105 fatalities occurred among 353 people who ingested a solution of sulfanilamide in an aqueous mixture containing 72% diethylene glycol. The symptoms included nausea, dizziness, and pain in the kidney region. In a few days, oliguria and anuria, with death resulting from uremic poisoning. (Amdur, Doull and Klaasen, 1991). Autopsies revealed that the principal signs of intoxication were in the kidneys and liver (cortical necroses, nephrosis with severe vacuolization of the tubular epithelium, liver congestion and fatty degeneration. (AIHA, 1999)

Reproductive toxicity was noted in a mouse continuous breeding study with large doses of diethylene glycol in drinking water. In addition, health effects including liver and kidney disease were noted in studies with pregnant rats receiving undiluted diethylene glycol. The relevance of these large dose studies to human health is not certain.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity	Diethylene Glycol:
	LC50 Fathead Minnows, >100 ppm/96 hrs (Static Test Environment)
	LC50 <i>Daphnia Magna</i> , 0.3 - 1 ppm/96 hrs (Static Test Environment)
	No Effect Level, <i>Selenastrum Capricornutum</i> , 100 ppm (Static Test Environment)
Environmental Fate	This product is miscible in water and is expected to readily disperse in marine environments.


SECTION 13. DISPOSAL CONSIDERATIONS

Hazard characteristic and regulatory waste stream classification can change with product use. Accordingly, it is the responsibility of the user to determine the proper storage, transportation, treatment and/or disposal methodologies for spent materials and residues at the time of disposition.

Conditions of use may cause this material to become a "hazardous waste", as defined by federal or state regulations. It is the responsibility of the user to determine if the material is a "hazardous waste" at the time of disposal. Transportation, treatment, storage, and disposal of waste material must be conducted in accordance with RCRA regulations (see 40 CFR 260 through 40 CFR 271). State and/or local regulations may be more restrictive. Contact your regional US EPA office for guidance concerning case specific disposal issues. Empty drums and pails retain residue. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose this product's empty container to heat, flame, or other ignition sources. DO NOT attempt to clean it. Empty drums and pails should be drained completely, properly bunged or sealed, and promptly sent to a reconditioner.

SECTION 14. TRANSPORT INFORMATION

The shipping description below may not represent requirements for all modes of transportation, shipping methods or locations outside of the United States.

US DOT Status	Not regulated by the U.S. Department of Transportation as a hazardous material.		
Proper Shipping Name	Not regulated.		
Hazard Class	Not regulated.	Packing Group	Not applicable.
		UN/NA Number	Not regulated.
Reportable Quantity	A Reportable Quantity (RQ) has not been established for this material.		
Placard(s)		Emergency Response Guide No.	Not applicable.
		MARPOL III Status	Not a DOT "Marine Pollutant" per 49 CFR 171.8.

SECTION 15. REGULATORY INFORMATION

TSCA Inventory	This product and/or its components are listed on the Toxic Substances Control Act (TSCA) inventory.
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CITGO FR-40 XD Hydraulic Fluid

SARA 302/304 Emergency Planning and Notification	The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to Subparts 302 and 304 to submit emergency planning and notification information based on Threshold Planning Quantities (TPQs) and Reportable Quantities (RQs) for "Extremely Hazardous Substances" listed in 40 CFR 302.4 and 40 CFR 355. No components were identified.
SARA 311/312 Hazard Identification	<p>The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to this subpart to submit aggregate information on chemicals by "Hazard Category" as defined in 40 CFR 370.2. This material would be classified under the following hazard categories:</p> <p>Acute (Immediate) Health Hazard, Chronic (Delayed) Health Hazard</p>
SARA 313 Toxic Chemical Notification and Release Reporting	This product contains the following components in concentrations above <i>de minimis</i> levels that are listed as toxic chemicals in 40 CFR Part 372 pursuant to the requirements of Section 313 of SARA: No components were identified.
CERCLA	The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center concerning release of quantities of "hazardous substances" equal to or greater than the reportable quantities (RQ's) listed in 40 CFR 302.4. As defined by CERCLA, the term "hazardous substance" does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically designated in 40 CFR 302.4. This product or refinery stream is not known to contain chemical substances subject to this statute. However, it is recommended that you contact state and local authorities to determine if there are any other reporting requirements in the event of a spill.
Clean Water Act (CWA)	Discharges or spills of this material onto or in waters of the United States, adjoining shorelines, or into conduits leading to surface waters of the US without proper Federal or State permits should be reported to the National Response Center at (800) 424-8802.
California Proposition 65	<p>This material may contain the following components which are known to the State of California to cause cancer, birth defects or other reproductive harm, and may be subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):</p> <p>Ethylene oxide: <0.0001% 1,4-Dioxane: <0.0001% Propylene oxide: <0.0001%</p>
New Jersey Right-to-Know Label	New Jersey RTK: 648325001
Additional Remarks	No additional regulatory remarks.

SECTION 16. OTHER INFORMATION

Refer to the top of Page 1 for the HMIS and NFPA Hazard Ratings for this product.

REVISION INFORMATION

Version Number	1.1
Revision Date	10/1/2009

ABBREVIATIONS

AP: Approximately	EQ: Equal	>: Greater Than	<: Less Than
NA: Not Applicable	ND: No Data	NE: Not Established	

ACGIH: American Conference of Governmental Industrial Hygienists

AIHA: American Industrial Hygiene Association

IARC: International Agency for Research on Cancer

NIOSH: National Institute of Occupational Safety and Health

NPCA: National Paint and Coating Manufacturers Association

EPA: US Environmental Protection Agency

CITGO FR-40 XD Hydraulic Fluid

HMIS: Hazardous Materials Information System

OSHA: Occupational Safety and Health Administration

NTP: National Toxicology Program

NFPA: National Fire Protection Association

DISCLAIMER OF LIABILITY

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***** END OF MSDS *****



Houghton International Inc.

Revision Date : 05/14/2010

Material Safety Data Sheet

HOUGHTO-SAFE 620

1. Chemical Product and Company Identification

Product Name	HOUGHTO-SAFE 620	Emergency Phone Number	24 HOUR - (800) 424-9300 (CHEMTREC)
Company Name	Houghton International Inc. Madison & Van Buren Aves Valley Forge, PA 19482	Emergency Phone Number - Canada	24 HOUR - 613-996-6666 (CANUTEC)
Company Name	Houghton Canada Inc. 115 Walker Drive, Unit B Brampton, ON L6T 5P5 Phone: 905-494-3770	FAX	(610) 666-1376
Website	www.houghtonintl.com	Customer Service	(888) 459-9844
Telephone	(610) 666-4000		

2. Hazardous Ingredients

Component	Cas No	% by Weight	Hazards
Diethylaminoethanol	100-37-8	<1	TLV: 2 ppm (skin) PEL: 10 ppm (skin)
Diethylene Glycol	111-46-6	30-50	TLV: N/E PEL: N/E

N/E - Not Established; N/A - Not Applicable; Mfr - Manufacturer Recommendation

3. Hazards Identification

Primary Entry Routes	EYES, SKIN, INHALATION
Acute Effects	
Inhalation	INHALATION OF MISTS MAY CAUSE IRRITATION OF THE UPPER RESPIRATORY TRACT.
Eye	MAY CAUSE EYE IRRITATION.
Skin	PROLONGED OR REPEATED SKIN CONTACT MAY CAUSE IRRITATION.
Ingestion	AVOID INGESTION. MAY CAUSE NAUSEA, DIZZINESS, DIARRHEA, VOMITING. REPEATED OVEREXPOSURE MAY LEAD TO LIVER AND KIDNEY DAMAGE.
Carcinogenicity	THIS PRODUCT DOES NOT CONTAIN ANY COMPONENT REPORTABLE AS A CARCINOGEN UNDER 29 CFR 1910.1200.

**Material Safety Data Sheet
HOUGHTO-SAFE 620****3. Hazards Identification - continued**

Medical Conditions
Aggravated by LongTerm
Exposure

PRE-EXISTING SKIN AND RESPIRATORY CONDITIONS MAY BE AGGRAVATED
BY EXPOSURE.

Chronic Effects

SEE EFFECTS ABOVE.

HMIS:

Health	1
Flammability	0
Physical Hazard	0

* indicates that there may be chronic health effects present

4. First Aid Measures

Inhalation	IF INHALED, REMOVE TO A SOURCE OF FRESH AIR.
Eye Contact	FLUSH EYES WITH WATER FOR 15 MINUTES. CONSULT PHYSICIAN.
Skin Contact	WASH SKIN WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING AND LAUNDER BEFORE REUSING. CONSULT PHYSICIAN IF IRRITATION PERSISTS.
Ingestion	IF INGESTED, GIVE LIQUIDS TO DILUTE. INDUCE VOMITING. CONSULT PHYSICIAN.
Note to Physicians	NO SPECIFIC ANTIDOTE KNOWN. BASED ON INDIVIDUAL REACTIONS OF THE PATIENT, THE PHYSICIAN'S JUDGMENT SHOULD BE USED TO CONTROL SYMPTOMS AND CLINICAL CONDITIONS.

N/A - Not Applicable

5. Fire Fighting Measures

Flash Point	N/A - PRODUCT CONTAINS WATER.
Autoignition Temperature	N/D
LEL	N/D
UEL	N/D
Extinguishing Media	PRODUCT CONTAINS WATER. IF WATER IS REMOVED, USE CARBON DIOXIDE, DRY CHEMICAL OR FOAM.

**Material Safety Data Sheet
HOUGHTO-SAFE 620****5. Fire Fighting Measures - continued**

Unusual Fire or Explosion
Hazards

CLOSED CONTAINERS MAY SWELL AND RUPTURE WHEN EXPOSED TO EXTREME HEAT. USE WATER SPRAY TO COOL CONTAINERS EXPOSED TO FIRE AND HEAT.

Fire Fighting Instructions

WEAR PROTECTIVE GEAR DURING FIREFIGHTING.

NFPA:

Health	1
Flammability	0
Reactivity	0
Special	N/A

N/A - Not Applicable; ND - Not Determined; > - Greater Than; < - Less Than

6. Accidental Release Measures

Spill or Release Procedures

FOR SMALL SPILLS, APPLY DRY ABSORBENT MATERIAL AND SWEEP UP THOROUGHLY. FOR LARGER SPILLS, RECOVER AND REUSE IF POSSIBLE. FLUSH AREA WITH WATER AND MOP UP THOROUGHLY.

7. Handling and Storage

Storage and Handling
Requirements

STORE AWAY FROM STRONG OXIDIZERS. KEEP CONTAINERS CLOSED WHEN NOT IN USE. EMPTY CONTAINERS MAY RETAIN PRODUCT RESIDUE. ALL PRECAUTIONS APPLY TO EMPTY CONTAINERS. AVOID CONTACT WITH EYES, SKIN AND CLOTHING. USE WITH ADEQUATE VENTILATION. WASH THOROUGHLY AFTER HANDLING.

8. Exposure Controls/Personal Protection

Engineering Controls

PROVIDE GENERAL AND/OR LOCAL EXHAUST VENTILATION TO MINIMIZE AIRBORNE CONCENTRATIONS AND REDUCE EXPOSURE.

Personal Protective Equipment

Eye/Face Protection

WEAR SAFETY GOGGLES OR SAFETY GLASSES WITH SIDE SHIELDS.

Skin Protection

USE GLOVES AND LONG SLEEVES TO MINIMIZE SKIN EXPOSURE. USE APRON OR OVERALLS IF SPLASHING IS POSSIBLE.

**Material Safety Data Sheet
HOUGHTO-SAFE 620****8. Exposure Controls/Personal Protection - continued**

Respiratory Protection	IF THE EXPOSURE LIMITS ARE EXCEEDED, USE AN AIR PURIFYING RESPIRATOR.
Other	EYEWASH AND SAFETY SHOWER RECOMMENDED.
Comments	USE OF GLOVES AND OTHER SKIN PROTECTION DEPENDS ON THE DURATION OF EXPOSURE AND THE TASK BEING PERFORMED. IF NECESSARY, USE CHEMICALLY RESISTANT GLOVES SUCH AS NEOPRENE, NITRILE OR EQUIVALENT MATERIALS.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, or applying cosmetics.

9. Physical and Chemical Properties

Appearance	CLEAR RED FLUID	Water Solubility	COMPLETE
Odor	AMINE ODOR	Boiling Point	220°F / 104°C
Vapor Pressure (mmHg)	N/D	Freezing/ Melting Point	N/D
Vapor Density (Air = 1)	N/D	Evaporation Rate (BuAc = 1)	< 1
Specific Gravity (Water = 1)	1.07 - 1.09		
pH (Neat)	9.5 - 10.1		

N/D - Not Determined; N/A - Not Applicable; > - Greater Than; < - Less Than

10. Stability and Reactivity

Stability	THIS PRODUCT IS STABLE AT ROOM TEMPERATURE IN CLOSED CONTAINERS UNDER NORMAL STORAGE AND HANDLING CONDITIONS.
Chemical Incompatibilities	AVOID CONTACT WITH STRONG OXIDIZERS.
Hazardous Decomposition Products	THERMAL: OXIDES OF CARBON AND NITROGEN
Hazardous Polymerization	HAZARDOUS POLYMERIZATION WILL NOT OCCUR.

**Material Safety Data Sheet
HOUGHTO-SAFE 620****11. Toxicological Information**

NO DATA AVAILABLE

12. Ecological Information

NO DATA AVAILABLE

13. Disposal Considerations

Disposal

FOLLOW PERTINENT REGULATIONS FOR DISPOSAL. IT IS THE RESPONSIBILITY OF THE PRODUCT USER TO DETERMINE, AT THE TIME OF DISPOSAL, WHETHER A MATERIAL CONTAINING THE PRODUCT OR DERIVED FROM THE PRODUCT SHOULD BE CLASSIFIED AS A HAZARDOUS WASTE. (40 CFR 261.20-24)

RCRA Hazardous Waste
Number

N/A

14. Transportation Information

Proper Shipping Name

NOT HAZARDOUS UNDER DOT, AIR OR IMO REGULATIONS.

TDG

NOT REGULATED UNDER THE CANADIAN TRANSPORTATION OF DANGEROUS GOODS REGULATION.

15. Regulatory Information

TSCA Section 8(b)

ALL OF THE COMPONENTS IN THIS PRODUCT ARE ON THE TSCA INVENTORY.

DSL

ALL OF THE COMPONENTS IN THIS PRODUCT ARE ON THE CANADIAN DSL. THIS PRODUCT HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CPR AND THE MSDS CONTAINS ALL OF THE INFORMATION REQUIRED BY THE CPR.

CERCLA Reportable
Quantity

NONE

SARA Title III, Section 313

THIS PRODUCT CONTAINS NO TOXIC CHEMICAL SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372.

**Material Safety Data Sheet
HOUGHTO-SAFE 620****15. Regulatory Information - continued**

SCAQMD

THIS PRODUCT IS NOT REGULATED UNDER CALIFORNIA'S SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT'S RULE 1144.

Ozone Depleting
Substances

THIS PRODUCT WAS NOT MANUFACTURED, DOES NOT CONTAIN, AND WAS NOT PACKAGED USING ANY CLASS I OR CLASS II OZONE DEPLETING SUBSTANCE AS DEFINED BY THE CLEAN AIR ACT.

WHMIS

D2B

16. Other Information

Prepared By

GARY CARL

Title

MANAGER, PRODUCT SAFETY

Disclaimer: The information presented herein has been compiled from sources considered to be dependable and is accurate as of the date issued. However, since data, safety standards, and government regulations are subject to change and the conditions of handling and use are beyond our control, Houghton International makes no warranty regarding the accuracy of such data or its suitability for any purchaser's use or for any consequence of its use. The data in this MSDS relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. Safe handling and use remains the responsibility of the purchaser and the purchaser has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. Houghton International assumes no responsibility for injury to the recipient or to third persons or for any damage to any property and the recipient assumes all such risks.



MATERIAL SAFETY DATA SHEET

Product Name	FYRQUEL 220	
Product id	7030	
Revision date	08/12/2008	Revision: 1

1. Identification of the substance & the company

Chemical name	Butylated triphenyl phosphate ester based preparation
Chemical family	Aryl phosphate
Type of product and use	Fire-resistant hydraulic fluid
Supplier	ICL Supresta, Inc. 622 Emerson Road - Suite 500 St Louis, Missouri 63141, USA Tel:(314)983-7884 Fax:(314)983-7607
Emergency Telephone	Chemtrec (800)424-9300

2. Hazards identification

Emergency overview	<i>Inhalation of vapor or mist may cause mild respiratory tract irritation. May cause mild skin and eye irritation.</i>
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NFPA Ratings (Scale 0-4)	Health = 1, Fire = 1, Reactivity = 0
HMIS Ratings (Scale 0-4)	Health = 1, Fire = 1, Reactivity = 0.

3. Composition / information on ingredients

Components	CAS No.	Weight %
t-Butylphenyl diphenyl phosphate	56803-37-3	30 - 35
Bis(t-butylphenyl)phenyl phosphate	65652-41-7	30 - 35
Tri(t-butylphenyl) phosphate	78-33-1	10 - 15
Triphenyl phosphate	115-86-6	15 - 25

MATERIAL SAFETY DATA SHEET

Product Name	FYRQUEL 220	
Product id	7030	
Revision date	08/12/2008	Revision: 1

4. First-aid measures

Eye contact	Holding the eyelids apart, flush eyes promptly with copious flowing water for at least 20 minutes. Get medical attention immediately.
Skin contact	Remove contaminated clothing. Wash skin thoroughly with mild soap and plenty of water for at least 15 minutes. Wash clothing before re-use. Get medical attention if irritation occurs.
Inhalation	In case of inhalation, remove person to fresh air. Keep him quiet and warm. Apply artificial respiration if necessary and get medical attention immediately.
Ingestion	If swallowed, wash mouth thoroughly with plenty of water. Get medical attention immediately. ***** NOTE: Never give an unconscious person anything to drink. *****
Notes to the physician	Treat symptomatically and supportively. No specific antidote.

5. Fire - fighting measures

Suitable extinguishing media	Material is not combustible. Use extinguishing media appropriate to surrounding fire conditions.
Fire fighting procedure	Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA). Contain runoff to prevent entry into water or drainage systems.
Unusual fire and explosion hazards	When heated to decomposition, may release poisonous and corrosive fumes of Carbon Dioxide, Carbon Monoxide and Phosphorus Oxides. The material is not sensitive to ignition from static discharge.

6. Accidental release measures

Personal precautions	Wear appropriate safety clothing and eye/face protection (see Section 8)
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MATERIAL SAFETY DATA SHEET

Product Name	FYRQUEL 220	
Product id	7030	
Revision date	08/12/2008	Revision: 1

Methods for cleaning up Soak up with sand or other suitable absorbant and dispose of as solid waste. Collect in suitable and properly labeled containers. Ventilate area and wash spill site after material pickup is complete.

Environmental precautions Prevent product from entering drains, ditches and rivers.

7. Handling and storage

Handling Avoid bodily contact. Keep containers tightly closed.

Storage Store in a dry, cool, well-ventilated area away from incompatible materials (see "materials to avoid").
Maximum recommended storage temperature of 65°C (149°F)
Crystallizes at temperatures below 4.4°C (40°F).

8. Exposure controls / personal protection

Exposure Limits :

Components	ACGIH-TLV Data	OSHA (PEL) Data
t-Butylphenyl diphenyl phosphate 56803-37-3	Not determined	Not determined
Bis(t-butylphenyl)phenyl phosphate 65652-41-7	Not determined	Not determined
Tri(t-butylphenyl) phosphate 78-33-1	Not determined	Not determined
Triphenyl phosphate 115-86-6	3 mg/m ³	3 mg/m ³

Ventilation requirements Ventilation must be sufficient to maintain atmospheric concentration below recommended exposure limit.

Personal protective equipment:

- | | |
|----------------------------|--|
| - Respiratory protection | In case of insufficient ventilation wear suitable respiratory equipment. |
| - Hand protection | Protective gloves |
| - Eye protection | Chemical safety goggles |
| - Skin and body protection | Body covering clothes and boots |

MATERIAL SAFETY DATA SHEET

Product Name	FYRQUEL 220	
Product id	7030	
Revision date	08/12/2008	Revision: 1

Hygiene measures Safety shower and eye bath should be provided. Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking.

9. Physical and chemical properties

Appearance	Yellowish liquid
Odor	Slight
Melting point/range	Not determined
Boiling point/range	>400°C
Pour point	-17.77°C (0 °F)
Flash point	246°C (475°F) (closed cup)
Flammable/Explosion limits	Not explosive/Not flammable
Ignition temperature	554.44° C (1030° F)
Auto-ignition temperature	Not self-ignitable
Vapour pressure	1.08x10 ⁽⁻³⁾ Pa (20°C)
Viscosity	220 SUS @ 38°C (100°F)
Solubility:	
- Solubility in water	< 0.1 g/100 ml
Density	1.13 - 1.17 g/cm³ (20°C)
Partition coefficient (n-octanol/water)	Log Kow - 4.85

10. Stability and reactivity

Stability	Stable under normal conditions
Materials to avoid	Acids, alkalies
Conditions to avoid	Exposure to moisture
Hazardous decomposition products	Carbon dioxide and carbon monoxide Phosphorus oxides
Hazardous polymerization	Not expected to occur

11. Toxicological information

Note: Toxicological data have not been determined specifically for this product. Information given is based on data on the components and the toxicology of similar products.

Acute toxicity:	
- Rat oral LD50	> 5000 mg/kg
- Rabbit dermal LD50	> 2000 mg/kg
- Rat inhalation LC50	> 3.1 mg/l

MATERIAL SAFETY DATA SHEET

Product Name	FYRQUEL 220	
Product id	7030	
Revision date	08/12/2008	Revision: 1

- Eye irritation (rabbit)	Mild irritant
- Dermal irritation (rabbit)	Mild irritant
Sub-chronic toxicity:	
- NOEL	100 ppm (13 weeks oral rat)
Chronic toxicity	No data available
Mutagenicity	No evidence of genotoxic or mutagenic activity was noted in Ames tests, the mouse lymphoma and chromosome aberration tests.
Carcinogenicity	Not classified by IARC Not included in NTP 11th Report on Carcinogens Not classified as a carcinogen by USA OSHA
Reproductive toxicity	Butylated triphenyl phosphate did not demonstrate reproductive toxicity. In a rat reproduction study, male and female animals received either 50, 250 or 1000 mg/kg/day for several weeks after which they mated. There were no reproductive toxicity observed at any dose level. Diagnostic pathology confirmed no alterations to the reproductive organs. There was no effect on mating index, litter size, survival of the offspring or on any other measured parameter.
Teratogenicity	Not teratogenic when administered orally up to 1000 mg/kg
Neurotoxicity	No signs of acute delayed neurotoxicity when administered orally to hens at 23 g/kg

12. Ecological information

Aquatic toxicity :	
- 96 Hour-LC50, Fish	> 1.0 mg/l (Sheepshead minnow)
- 96 Hour-EC50, fish	> 2.0 mg/l (Rainbow Trout)
- LC50, Crustacea	0.39 mg/l (Mysid shrimp, 96-hours)
Persistence and degradability:	
- Hydrolysis	Hydrolysis rates for triphenyl phosphate, a product component are: at pH 9.5: half-life: 0.23 days at pH 8.2: half-life: 7.5 days
Biodegradation	Readily biodegradable
Bioaccumulative potential	Triaryl phosphate esters, including triphenyl phosphate, exhibit low aqueous solubility, have moderate potential for bioconcentration and readily undergo biodegradation.

MATERIAL SAFETY DATA SHEET

Product Name	FYRQUEL 220	
Product id	7030	
Revision date	08/12/2008	Revision: 1

Germany, water endangering classes (WGK) 2

13. Disposal considerations

Waste disposal Observe all federal, state and local environmental regulations when disposing of this material

14. Transportation information

UN No.	3082
DOT	<p>Proper shipping name: Environmentally hazardous substance, liquid , n.o.s (triphenyl phosphate, tert-butylated triphenyl phosphate mixtures containing 10% to 48% triphenyl phosphates)</p> <p>Class: 9 - Miscellaneous Hazardous Material</p> <p>Label: 9</p> <p>Packing Group: III</p> <p>Not regulated for surface and air transport in non-bulk (<119 gallons) packagings. (contains triphenyl phosphate which is a Marine Pollutant per 49CFR 172.101 Appendix B)</p>
IMO	<p>Proper shipping name: Environmentally hazardous substance, liquid, n.o.s (triphenyl phosphate, tert-butylated triphenyl phosphate mixtures containing 10% to 48% triphenyl phosphates)</p> <p>Class: 9 - Miscellaneous Dangerous Substances and articles</p> <p>Label: 9</p> <p>Marking: MARINE POLLUTANT (PP)</p> <p>Packing Group: III</p>
ICAO/IATA	<p>Proper shipping name: Environmentally hazardous substance, liquid , n.o.s (triphenyl phosphate, tert-butylated triphenyl phosphate mixtures containing 10% to 48% triphenyl phosphates)</p> <p>Class: 9</p> <p>Hazard label(s): Miscellaneous</p> <p>Packing group: III</p>

15. Regulatory information

USA Reported in the EPA TSCA Inventory.

MATERIAL SAFETY DATA SHEET

Product Name	FYRQUEL 220	
Product id	7030	
Revision date	08/12/2008	Revision: 1

- SARA 313	This product does not contain a chemical listed at or above de minimis concentrations.
- Massachusetts right-to-know list	Listed (Triphenyl phosphate)
- New Jersey right-to-know list	Listed (Triphenyl phosphate)
- Pennsylvania right to know list	Listed (Triphenyl phosphate)
- Rhode Island right-to-know list	Listed (Triphenyl phosphate)
- California-Prop 65	This product does not contain any ingredient known to the State of California to cause cancer or reproductive toxicity as listed under the State drinking Water and Toxic Enforcement Act of 1986.
- Waste Classifications	This material does not meet RCRA's characteristic definition of ignitability, corrosivity, or reactivity, and is not listed in 40CFR 261.33.
- Workplace Classification	This product is considered hazardous under the OSHA Hazard Communication Standard (29CFR 1910.1200).
Canada	Listed in DSL
-WHMIS hazard class	Non-controlled
EU	Reported in EINECS
Japan	Listed in ENCS
Australia	Listed in AICS
New Zealand Inventory	Listed in NZIoC
China inventory	Listed
Korea	Listed in ECL
Philippines	Listed in PICCS

MATERIAL SAFETY DATA SHEET

Product Name	FYRQUEL 220	
Product id	7030	
Revision date	08/12/2008	Revision: 1

16. Other information

Health, Safety & Environment Policy

We will strive to ensure that our operations and products meet the needs of the present global community without compromising the ability of future generations to meet their needs

We accept that the success of our business is dependent on the supply of products and services that will benefit society whilst ensuring human safety and protection of the environment and natural resources

Within the framework of our commitment to the Responsible Care program, we will provide a healthy and safe work environment for employees and will responsibly manage our products at all stages of their life cycle in order to protect human health and the environment whilst maintaining high production standards of operation

TO MEET THIS COMMITMENT WE WILL:

Comply with or exceed applicable national and international regulatory requirements and other requirements to which we subscribe

Communicate openly and actively encourage dialogue with employees, customers and community concerning our products and operations

Implement documented management systems consistent with and for promotion of the Responsible Care ethics

Develop and supply products that can be manufactured, transported, used and disposed of safely whilst best meeting the needs of our customers

Regularly assess, continually improve and responsibly manage health, safety and environmental risks associated with products and processes throughout their life-cycles

Share knowledge and expertise with others and seek to learn from and incorporate improved practices into our own operations

Educate and train employees, contractors and customers to improve their HSE performance

Communicate up-to-date information to enable our workers, customers and other interested parties to handle our products in a safe and environmentally responsible manner

Endeavor to work with customers, suppliers, distributors and contractors to foster the safe use, transport and disposal of our chemicals

Support Product Stewardship programs in cooperation with customers, distributors and transporters

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, Bromine Compounds Ltd. makes no representations as to the completeness or accuracy thereof.

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MATERIAL SAFETY DATA SHEET

Product Name	FYRQUEL 220	
Product id	7030	
Revision date	08/12/2008	Revision: 1

Prepared By	HSE Division in ISRAEL telephone: +/972-8-6297830 telefax: +/972-8-6297832 www.icl-ip.com e-mail:msdsinfo@icl-ip.com
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End of safety data sheet



Product Name: MOBIL PYROGARD 53

Revision Date: 20Mar2008

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MATERIAL SAFETY DATA SHEET

SECTION 1

PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: MOBIL PYROGARD 53

Product Description: Synthetic Ester

Product Code: 201560106008, 602110-00, 971281

Intended Use: Fire-resistant hydraulic fluid

COMPANY IDENTIFICATION

Supplier:

EXXON MOBIL CORPORATION

3225 GALLOWES RD.

FAIRFAX, VA. 22037 USA

24 Hour Health Emergency

609-737-4411

Transportation Emergency Phone

800-424-9300

ExxonMobil Transportation No.

281-834-3296

MSDS Requests

713-613-3661

Product Technical Information

800-662-4525, 800-947-9147

MSDS Internet Address

<http://www.exxon.com>, <http://www.mobil.com>

SECTION 2

COMPOSITION / INFORMATION ON INGREDIENTS

Reportable Hazardous Substance(s) or Complex Substance(s)

Name	CAS#	Concentration*
TRIPHENYL PHOSPHATE	115-86-6	15 - 25%

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

SECTION 3

HAZARDS IDENTIFICATION

This material is not considered to be hazardous according to regulatory guidelines (see (M)SDS Section 15).

POTENTIAL HEALTH EFFECTS

Low order of toxicity. Excessive exposure may result in eye, skin, or respiratory irritation. High-pressure injection under skin may cause serious damage.

ENVIRONMENTAL HAZARDS

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

NFPA Hazard ID:

Health: 1

Flammability: 1

Reactivity: 0

HMIS Hazard ID:

Health: 1

Flammability: 1

Reactivity: 0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

Product Name: MOBIL PYROGARD 53

Revision Date: 20Mar2008

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SECTION 4	FIRST AID MEASURES
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INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

Seek immediate medical attention. Do not induce vomiting.

SECTION 5	FIRE FIGHTING MEASURES
------------------	-------------------------------

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Pressurized mists may form a flammable mixture.

Hazardous Combustion Products: Incomplete combustion products, Oxides of carbon, Phosphorus oxides, Smoke, Fume

FLAMMABILITY PROPERTIES

Flash Point [Method]: >243C (470F) [ASTM D-92]

Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D

Autoignition Temperature: 554°C (1030°F)

SECTION 6	ACCIDENTAL RELEASE MEASURES
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Product Name: MOBIL PYROGARD 53

Revision Date: 20Mar2008

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NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do it without risk. Do not touch or walk through spilled material. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Material will sink. Remove material, as much as possible, using mechanical equipment.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Remove debris in path of spill prior to oiling and remove contaminated debris from shoreline and water surface and dispose of according to local regulations. Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7

HANDLING AND STORAGE

HANDLING

Avoid breathing mists or vapors. Prevent small spills and leakage to avoid slip hazard.

Static Accumulator: This material is not a static accumulator.

STORAGE

Store in a cool, dry place with adequate ventilation. Keep away from incompatible materials, open flames, and high temperatures. Do not store in open or unlabelled containers. Keep container tightly closed and dry.

SECTION 8

EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Source	Form	Limit / Standard			Note	Source
TRIPHENYL PHOSPHATE		TWA	3 mg/m3		N/A	OSHA Z1
TRIPHENYL PHOSPHATE		TWA	3 mg/m3		N/A	ACGIH

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

Product Name: MOBIL PYROGARD 53

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ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No protection is ordinarily required under normal conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

Chemical resistant gloves are recommended.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

Chemical / oil resistant clothing if contact with material is likely.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

See Sections 6, 7, 12, 13.

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.

GENERAL INFORMATION

Physical State: Liquid

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Color: Blue
Odor: Characteristic
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 20 C): 1.13 - 1.17
Flash Point [Method]: >243C (470F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: 554°C (1030°F)
Boiling Point / Range: N/D
Vapor Density (Air = 1): N/D
Vapor Pressure: [N/D at 20 °C] | < 0.013 kPa (0.1 mm Hg) at 38C
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): N/D
Solubility in Water: Negligible
Viscosity: 41.8 cSt (41.8 mm²/sec) at 40 C
Oxidizing Properties: See Sections 3, 15, 16.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: -18°C (0°F)

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers, Strong Acids, Strong Bases

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Route of Exposure	Conclusion / Remarks
Inhalation	
Toxicity (Rat): LC50 > 3.1 mg/l	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: No end point data.	Elevated temperatures or mechanical action may form vapors, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs. Based on test data for structurally similar materials.
Ingestion	
Toxicity (Rat): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Skin	
Toxicity (Rat): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar

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	materials.
Irritation: No end point data.	Negligible irritation to skin at ambient temperatures. Based on test data for structurally similar materials.
Eye	
Irritation: No end point data.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials.

Additional information is available by request.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC

3 = IARC 1

5 = IARC 2B

2 = NTP SUS

4 = IARC 2A

6 = OSHA CARC

SECTION 12

ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Expected to be very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Components -- Expected to be readily biodegradable.

BIOACCUMULATION POTENTIAL

Components -- Has the potential to bioaccumulate.

SECTION 13

DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity or reactivity and is not formulated with

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contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14

TRANSPORT INFORMATION

LAND (DOT)

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Triphenyl phosphate, Triphenyl phosphate/tert-Butylated Triphenyl phosphate mixture containing 10% to 48% of Triphenyl phosphate)

Hazard Class & Division: 9

ID Number: 3082

Packing Group: III

Marine Pollutant: MP: 0 %weight PP: 70 %weight

ERG Number: 171

Label(s): 9

Transport Document Name: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Triphenyl phosphate, Triphenyl phosphate/tert-Butylated Triphenyl phosphate mixture containing 10% to 48% of Triphenyl phosphate), 9, PG III, MARINE POLLUTANT

Footnote: This material is not regulated under 49 CFR in a container of 119 gallon capacity or less when transported solely by air or land transportation.

LAND (TDG)

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Triphenyl phosphate, Triphenyl phosphate/tert-Butylated Triphenyl phosphate mixture containing 10% to 48% of Triphenyl phosphate)

Hazard Class & Division: 9

UN Number: 3082

Packing Group: III

Marine Pollutant: MP: 0 %weight PP: 70 %weight

Special Provisions: 16

SEA (IMDG)

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Triphenyl phosphate, Triphenyl phosphate/tert-Butylated Triphenyl phosphate mixture containing 10% to 48% of Triphenyl phosphate)

Hazard Class & Division: 9

EMS Number: F-A, S-F

UN Number: 3082

Packing Group: III

Marine Pollutant: MP: 0 %weight PP: 70 %weight

Label(s): 9

Transport Document Name: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Triphenyl phosphate, Triphenyl phosphate/tert-Butylated Triphenyl phosphate mixture containing 10% to 48% of Triphenyl phosphate), 9, PG III, MARINE POLLUTANT

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AIR (IATA) : Not Regulated for Air Transport**SECTION 15****REGULATORY INFORMATION****OSHA HAZARD COMMUNICATION STANDARD:** When used for its intended purposes, this material is not classified as hazardous in accordance with OSHA 29 CFR 1910.1200.**NATIONAL CHEMICAL INVENTORY LISTING:** KECI, ENCS, IECSC, AICS, DSL, PICCS, EINECS, TSCA**EPCRA:** This material contains no extremely hazardous substances.**SARA (311/312) REPORTABLE HAZARD CATEGORIES:** None.**SARA (313) TOXIC RELEASE INVENTORY:** This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.**The Following Ingredients are Cited on the Lists Below:**

Chemical Name	CAS Number	List Citations
TRIPHENYL PHOSPHATE	115-86-6	1, 4, 13, 16, 17, 18, 19

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16**OTHER INFORMATION**

N/D = Not determined, N/A = Not applicable

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Revision Changes:

Section 14: Transport Document Name was modified.

Section 15: National Chemical Inventory Listing was modified.

Section 14: IMO Technical Name - All was modified.

Section 14: IDG Technical Name - All was modified.

Section 01: Product Code was modified.

Section 06: Notification Procedures - Header was modified.

The information and recommendations contained herein are, to the best of ExxonMobil's knowledge and belief, accurate and reliable as of the date issued. You can contact ExxonMobil to insure that this document is the most current available from ExxonMobil. The information and recommendations are offered for the user's consideration and examination. It is the user's responsibility to satisfy itself that the product is suitable for the intended use. If buyer



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repackages this product, it is the user's responsibility to insure proper health, safety and other necessary information is included with and/or on the container. Appropriate warnings and safe-handling procedures should be provided to handlers and users. Alteration of this document is strictly prohibited. Except to the extent required by law, re-publication or retransmission of this document, in whole or in part, is not permitted. The term, "ExxonMobil" is used for convenience, and may include any one or more of ExxonMobil Chemical Company, Exxon Mobil Corporation, or any affiliates in which they directly or indirectly hold any interest.

Internal Use Only

MHC: 0, 0, 0, 0, 0, 1

PPEC: C

DGN: 2007583XUS (1014538)

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MATERIAL SAFETY DATA SHEET

Print date: 08/04/2009

Version: 2

Revision date: 08/04/2009

1. COMPANY AND PRODUCT IDENTIFICATION

Product name: QUINTOLUBRIC® 822-450
Product code: 002437-21

Supplier:
Quaker Chemical Corporation
Quaker Park One
901 Hector Street
Conshohocken, PA 19428
610-832-4000
E-mail: she@quakerchem.com

Emergency telephone number:
* 24 HOUR TRANSPORTATION:
**CHEMTREC: 1-800-424-9300
703-527-3887 (Call collect outside of US)
* 24 HOUR EMERGENCY HEALTH & SAFETY:
**QUAKER CHEMICAL CORPORATION: (800) 523-7010(
Within US only)
Outside of US call (703) 527-3887

2. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS

This product does not contain any hazardous ingredients as defined under 29 CFR 1910.1200.

3. HAZARDS IDENTIFICATION

Emergency Overview

This product may cause irritation of the eyes, skin, mucous membranes and respiratory tract.
May be harmful if swallowed.

Signal word: CAUTION

Principle routes of exposure: Eyes, skin and inhalation.

Eye contact: Contact with eyes may cause irritation

Skin contact: Prolonged and/or repeated contact may cause irritation and redness.

Inhalation: Vapors and/or aerosols which may be formed at elevated temperatures may be irritating to eyes and respiratory tract.

Ingestion: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Physico-chemical properties: No hazards resulting from material as supplied.

4. FIRST AID MEASURES

General advice:	Take off all contaminated clothing immediately. Wash off with soap and water. If symptoms persist, call a physician.
Eye contact:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Skin contact:	Rinse immediately with plenty of water for at least 15 minutes. If a person feels unwell or symptoms of skin irritation appear, consult a physician.
Ingestion:	If swallowed, seek medical advice immediately and show this container or label. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.
Inhalation:	Move to fresh air in case of accidental inhalation of vapors. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Consult a physician.
Note to physician:	Treat symptomatically.
Medical condition aggravated by exposure:	Dermatitis.

5. FIRE-FIGHTING MEASURES

Flash Point (°C): >288	Flash point (°F): >550	Flash Point Method: COC
Flammable limits in air - lower (%): Not determined	Flammable limits in air - upper (%): Not determined	
Suitable extinguishing media:	Use dry chemical, CO2, water spray or 'alcohol' foam.	
Unusual hazards:	None known	
Special protective equipment for fire-fighters:	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.	
Specific methods:	Water mist may be used to cool closed containers.	

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Do not breathe vapour/dust.
Environmental precautions:	Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system.
Methods for cleaning up:	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Sweep up and shovel into suitable containers for disposal.

7. HANDLING AND STORAGE

Handling

Technical measures/precautions:	Provide sufficient air exchange and/or exhaust in work rooms.
--	---

Safe handling advice: In case of insufficient ventilation, wear suitable respiratory equipment. Do not breathe vapors or spray mist. Wear personal protective equipment. Avoid contact with skin and eyes. Wash thoroughly after handling.

Storage

Technical measures/storage conditions: Store at room temperature in the original container

Incompatible products: No special restrictions on storage with other products

Safe storage temperature: 40-100 ° F

Shelf life: 12 months

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure adequate ventilation.

Personal Protective Equipment

General: Eye Wash and Safety Shower

Respiratory protection: If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, a NIOSH/MSHA certified respirator with organic vapor/P100 filter should be worn.

Hand protection: Neoprene gloves

Skin and body protection: Long sleeved clothing

Eye protection: Safety glasses with side-shields.

Hygiene measures: Avoid contact with skin, eyes and clothing.



9. PHYSICAL AND CHEMICAL PROPERTIES:

Physical state: Liquid

Color: Translucent Amber

Odour: Mild, Ester-like

Vapour density: Not determined

Vapour pressure: Not determined

VOC Content Product (lb/gal) 0.002 lb/gal (EPA 24)

Solubility: Insoluble

Evaporation rate: Not determined

Flash Point (°C): >288

Flash point (°F): >550

Decomposition temperature: Not determined

Auto-ignition temperature (°C): Not determined

Density @ 15.5 ° C (g/cc) : 0.92

Bulk density @ 60 ° F (lb/gal): 7.68

Partition coefficient (n-octanol/water, log Pow): Not determined

9. PHYSICAL AND CHEMICAL PROPERTIES:

Explosive properties:

- upper limit: No data available
- lower limit: No data available

10. STABILITY AND REACTIVITY

Stability:

Stable under recommended storage conditions.

Conditions to avoid:

None known

Materials to avoid:

Strong oxidizing agents

Hazardous decomposition products:

Carbon oxides, Nitrogen oxides (nox), Sulphur oxides, Oxides of phosphorus

Polymerisation

Not applicable

11. TOXICOLOGICAL INFORMATION

Oral toxicity (rats): Practically non-toxic (LD50>10ml/kg). Based on testing of the product or a similar product.

Inhalation toxicity (rats): practically non-toxic (LC50>200ml/kg). Based on testing the product or a similar product.

Eye irritation (rabbits): Essentially a non-irritant (Draize score = 0). Based on testing of the product or a similar product.

Skin irritation (rabbits): Slightly irritating (Primary Irritation Index = 1.46). Based on testing of the product or a similar product.

Human Patch Skin Study: Not an irritant or a sensitizer (Modified Shelanski). Based on testing of the product or a similar product.

12. ECOLOGICAL INFORMATION

Persistence and degradability: Environmental Fate and Effects: Under the modified Sturm Test (40 CFR 796.3620), this product is readily biodegradable.

Mobility: No data available

Bioaccumulation: No data available

Ecotoxicity effects: No data available

Aquatic toxicity: Aquatic Toxicity: Acute LC/EC50 (fish) - this product is non-toxic (LC50 > 2000ppm) based on testing of this product or a similar product.

Component Information

13. DISPOSAL CONSIDERATIONS

13. DISPOSAL CONSIDERATIONS

Waste from residues/unused products:	Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.
Contaminated packaging:	Do not re-use empty containers
Methods for cleaning up:	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Sweep up and shovel into suitable containers for disposal.

14. TRANSPORT INFORMATION

U. S. DEPARTMENT OF TRANSPORTATION:

Proper shipping name: Not Regulated

TDG (CANADA):

Proper shipping name: Not Regulated

IMDG/IMO:

Proper shipping name: Not Regulated

IATA/ICAO:

Proper shipping name: Not Regulated

15. REGULATORY INFORMATION

CANADIAN REGULATIONS:

Canada - WHMIS Classification Information: This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

Canadian Product Classification: None Required

**Product Classification
Graphic(s):**

Component Classification Data:

U.S. FEDERAL REGULATIONS:

OSHA Hazard Communication Standard: This product is considered non-hazardous under the OSHA Hazard Communication Standard.

Mine Safety and Health Administration MSHA Approval No. 30-20-3; QUNITOLUBRIC® 822-450

Factory Mutual Approval FM Approval Industrial Fluid Approval Date: 05/18/2006

CERCLA/SARA - Hazardous Substances and their Reportable Quantities: No components are listed

CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs: No components are listed

SARA (311, 312) hazard class: This product possesses the following SARA Hazard Categories:
Immediate Health (Acute): No
Delayed Health (Chronic): No
Flammability: No
Pressure: No
Reactivity: No

RCRA Status: Not Regulated

U.S. STATE REGULATIONS
(RTK):

California Proposition 65 Status: No components are listed

INVENTORY STATUS:

United States TSCA - Sect. 8(b) Inventory: This product complies with TSCA

Canada DSL Inventory List - This product complies with DSL

EC EINECS/ELINCS/NLP list: Compliance has not been determined

Inventory - Japan - Existing and New Chemical Substances (ENCS): Compliance has not been determined.

16. OTHER INFORMATION

Sources of key data used to compile the data sheet: Material safety data sheets of the ingredients.

Prepared by: Quaker Chemical Corporation -Safety, Health and Environmental Affairs Group - US

Reason for revision: This data sheet contains changes from the previous version in section(s) 4, 5, 6 and 15

HMIS classification:

Health:
1

Flammability:
1

Reactivity:
0

Personal Protection:
B

HMIS Use Dilution

Health
--

Flammability
--

Reactivity
--

Personal Protection
--

NFPA rating:

Health:
1

Flammability:
1

Reactivity:
0

Special:
NA

* Indicates possible chronic health effect

Personal protection recommendations should be reviewed by purchasers. Workplace conditions are important factors in specifying adequate protection.

New Jersey Right-to-Know regulations: Under NJ RTK, the ingredients have been listed as trade secret as follows: TSRN 80100025-5000P (ester); TSRN 80100025-5001P (additive); TSRN 80100025-5002P (polymer); TSRN 80100025-5003P (additive); TSRN 80100025-5004P (additive); TSRN 80100025-5005P (ester). The TSRN 80100025-5005P only applies to QUINTOLUBRIC 822-300 & QUINTOLUBRIC 822-450.

Factory Mutual Research Corporation: The QUNITOLUBRIC 822 series products are Factory Mutual System Approved as less hazardous hydraulic fluids.

United States Department of Agriculture (USDA): The QUINTOLUBRIC 822 series of products are approved for use as lubricants with non-food use (H2).

Disclaimer

This product's safety information is provided to assist our customers in assessing compliance with safety/health/environmental regulations. The information contained herein is based on data available to us and is believed to be accurate. However, no warranty of merchantability, fitness for any use, or any other warranty is expressed or implied regarding the accuracy of this data, the results to be obtained from the use thereof, or the hazards connected with the use of the product. Since the use of this product is within the exclusive control of the user, it is the user's obligation to determine the conditions for safe use of the product. Such conditions should comply with all regulations concerning the product. Quaker Chemical Corporation ("Quaker") assumes no liability for any injury or damage, direct or consequential, resulting from the use of this product unless such injury or damage is attributable to the gross negligence of Quaker.

End of Safety Data Sheet



Product Name: MOBIL PYROGARD D
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MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: MOBIL PYROGARD D
Product Description: Petroleum Emulsion
Product Code: 602011-00, 970673
Intended Use: Hydraulic fluid

COMPANY IDENTIFICATION

Supplier: EXXON MOBIL CORPORATION
3225 GALLOWS RD.
FAIRFAX, VA. 22037 USA

24 Hour Health Emergency 609-737-4411
Transportation Emergency Phone 800-424-9300
ExxonMobil Transportation No. 281-834-3296
MSDS Requests 713-613-3661
Product Technical Information 800-662-4525, 800-947-9147
MSDS Internet Address <http://www.exxon.com>, <http://www.mobil.com>

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

No Reportable Hazardous Substance(s) or Complex Substance(s).

SECTION 3 HAZARDS IDENTIFICATION

This material is not considered to be hazardous according to regulatory guidelines (see (M)SDS Section 15).

POTENTIAL HEALTH EFFECTS

Excessive exposure may result in eye, skin, or respiratory irritation. Low order of toxicity. High-pressure injection under skin may cause serious damage.

NFPA Hazard ID:	Health: 1	Flammability: 0	Reactivity: 0
HMIS Hazard ID:	Health: 1	Flammability: 0	Reactivity: 0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use

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mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5

FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use foam, dry chemical, or carbon dioxide (CO₂) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: The organic portion of this product will burn if heated to high temperatures. Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Pressurized mists may form a flammable mixture.

Hazardous Combustion Products: Oxides of carbon, Smoke, Fume, Sulfur oxides, Aldehydes, Incomplete combustion products

FLAMMABILITY PROPERTIES

Flash Point [Method]: N/A

Flammable Limits (Approximate volume % in air): LEL: N/A UEL: N/A

Autoignition Temperature: N/D

SECTION 6

ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. U.S. regulations require reporting releases of this material to the environment which exceed the reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

SPILL MANAGEMENT

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Land Spill: Stop leak if you can do it without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Seek advice of a specialist. This product emulsifies, disperses or is miscible in water.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7

HANDLING AND STORAGE

HANDLING

Prevent small spills and leakage to avoid slip hazard.

Static Accumulator: This material is a static accumulator.

STORAGE

Do not store in open or unlabelled containers.

SECTION 8

EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits/standards for materials that can be formed when handling this product: When mists / aerosols can occur, the following are recommended: 5 mg/m³ - ACGIH TLV, 10 mg/m³ - ACGIH STEL, 5 mg/m³ - OSHA PEL.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of

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respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Work conditions can greatly effect glove durability; inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

See Sections 6, 7, 12, 13.

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.

GENERAL INFORMATION

Physical State: Liquid

Form: Milky

Color: White

Odor: Characteristic

Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.93

Flash Point [Method]: N/A

Flammable Limits (Approximate volume % in air): LEL: N/A UEL: N/A

Autoignition Temperature: N/D

Boiling Point / Range: > 316°C (600°F)

Vapor Density (Air = 1): N/D

Vapor Pressure: [N/D at 20 °C]

Evaporation Rate (n-butyl acetate = 1): N/D

pH: 10

Log Pow (n-Octanol/Water Partition Coefficient): N/D

Solubility in Water: Readily

Product Name: MOBIL PYROGARD D
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Viscosity: 100 cSt (100 mm²/sec) at 40 °C
Oxidizing Properties: See Sections 3, 15, 16.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: -30°C (-22°F)
DMSO Extract (mineral oil only), IP-346: < 3 %wt

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Route of Exposure	Conclusion / Remarks
Inhalation	
Toxicity: No end point data.	Not determined.
Irritation: No end point data.	Negligible hazard at ambient/normal handling temperatures. Based on assessment of the components.
Ingestion	
Toxicity (Rat): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Skin	
Toxicity (Rabbit): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Irritation (Rabbit): Data available.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
Eye	
Irritation (Rabbit): Data available.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.

Additional information is available by request.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC

3 = IARC 1

5 = IARC 2B

Product Name: MOBIL PYROGARD D

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2 = NTP SUS

4 = IARC 2A

6 = OSHA CARC

SECTION 12

ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Base oil component -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL

Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

SECTION 13

DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning PRECAUTIONARY LABEL TEXT: Empty containers may retain residue and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to refill or clean container since residue is difficult to remove. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

SECTION 14

TRANSPORT INFORMATION

Product Name: MOBIL PYROGARD D
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LAND (DOT) : Not Regulated for Land Transport

LAND (TDG) : Not Regulated for Land Transport

SEA (IMDG) : Not Regulated for Sea Transport according to IMDG-Code

AIR (IATA) : Not Regulated for Air Transport

SECTION 15	REGULATORY INFORMATION
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OSHA HAZARD COMMUNICATION STANDARD: When used for its intended purposes, this material is not classified as hazardous in accordance with OSHA 29 CFR 1910.1200.

NATIONAL CHEMICAL INVENTORY LISTING: AICS, EINECS, ENCS, KECI, PICCS, TSCA

EPCRA: This material contains no extremely hazardous substances.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

SARA (313) TOXIC RELEASE INVENTORY: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The Following Ingredients are Cited on the Lists Below:

Chemical Name	CAS Number	List Citations
2-METHYL-4 ISOTHIAZOLIN-3-ON	2682-20-4	9
5-CHLORO-2-METHYL-2H-ISOTHIAZOL-3-ONE	26172-55-4	9
PHENOL, DODECYL-,HYDROGEN PHOSPHORODITHIOATE, ZINC SALT.	54261-67-5	15

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16	OTHER INFORMATION
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N/D = Not determined, N/A = Not applicable

Product Name: MOBIL PYROGARD D

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THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Revision Changes:

Section 06: Accidental Release - Spill Management - Water was modified.

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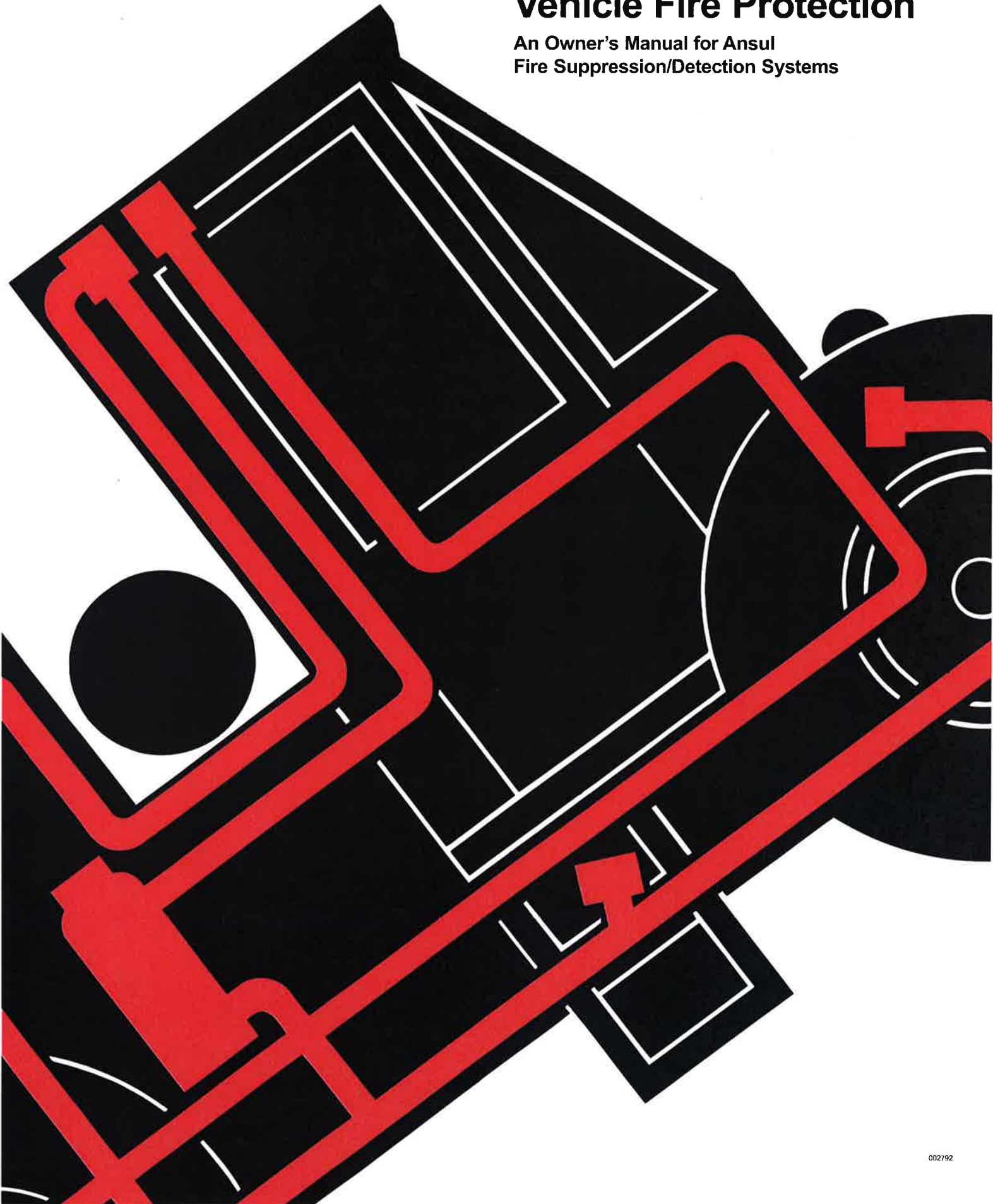
PPEC: A

DGN: 2007571XUS (554277)

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Vehicle Fire Protection

An Owner's Manual for Ansul
Fire Suppression/Detection Systems



Off-road vehicles do have fires

Statistics show that on-road vehicles burn.....with alarming frequency. These vehicles are susceptible to fire for several reasons. They often operate steady for several hours at a time (sometimes around the clock). They use flammable liquids – lubricating oil, gasoline, diesel oil, greases and hydraulic fluids – in their normal operation. They also generate heat – from engine blocks, manifolds, turbochargers and brake systems – which can ignite these flammable liquids and debris.

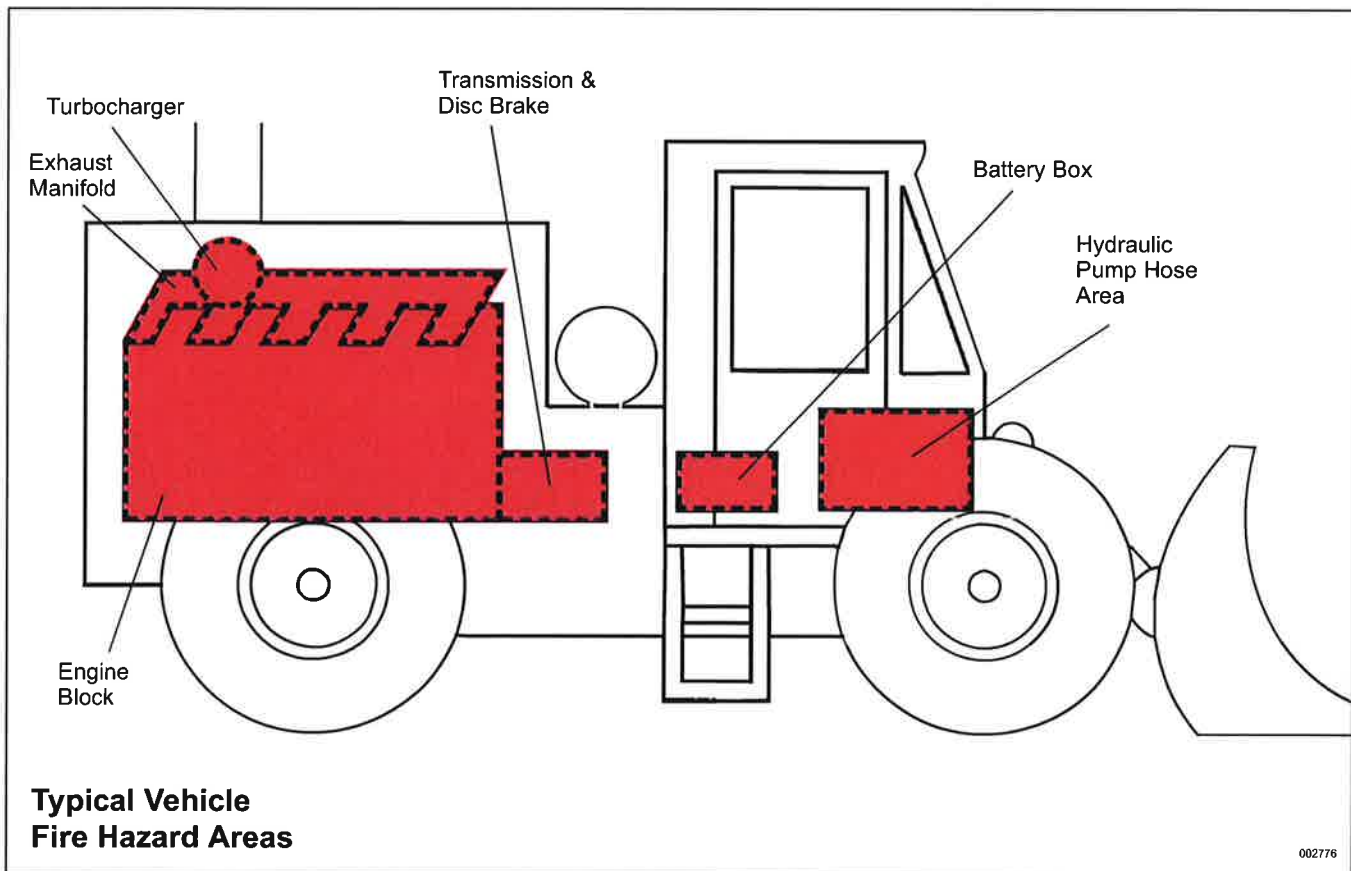
Since the passage of the federal and state clean air acts, many vehicles, including most busses operated by mass transit authorities and state agencies, have been converting to cleaner burning fuels such as LPG, LNG, and CNG instead of gasoline or diesel fuel. Use of these fuels is an essential component of improving our environment, but their use raises the possibility of dangerous gas leaks.

When fire breaks out, it can result in expensive repair or replacement of valuable equipment, costly downtime or loss of business continuity. Worse yet, it can mean serious personal injury to vehicle operators or passengers.

Insurance companies are well aware of these facts. That's why insurance rates are skyrocketing.

As the owner of a vehicle equipped with an Ansul Fire Detection/Suppression System, you've taken an important step in facing the fire problem. You are dramatically reducing your potential fire loss and helping to ensure personnel safety.

This owner's guide has been provided to help you understand how your Ansul Fire Detection/Suppression System works, your responsibilities for fire prevention and maintenance, and what to do in case of fire. In no way is this guide intended to provide detailed installation instructions. A copy of the complete Installation, Recharge, Inspection, and Maintenance Manual for the Ansul Fire Detection and Suppression System is available upon request from Ansul. Should you have any questions, contact Ansul or your nearest authorized Ansul products distributor.



SAFETY PRECAUTIONS

The fire system described in these materials is a suppression system only and is not designed or intended to extinguish all fires, particularly when unusual amounts of combustible materials and an ample oxygen supply are present. It is extremely important that alternative firefighting equipment be available in case the system does not totally extinguish a fire.

Use extreme care to prevent the accumulation of debris, combustible materials and fluids which could intensify the fire or cause it to spread to areas where there was no previous potential for fire.

If modifications are made to the equipment being protected or if the fire detection and/or suppression system is disconnected for any reason, make certain the fire equipment is immediately inspected and tested by an Ansul-authorized vehicle systems distributor.

If an automatic fire detection and actuation system has not been supplied or has been disconnected, system actuation and discharge will not occur unless the fire suppression system is manually actuated. Reliance on a manual release system usually results in a slower reaction to fire.

Your role in protecting your vehicle from fire

Your Ansul Fire Suppression System is custom-designed to protect specific hazard areas on your vehicle. It's been carefully engineered for reliability and built to the highest quality standards. Every component has been tested to ensure long life and dependable performance.

With proper maintenance, your Ansul Fire Suppression System should give you years of fire protection.

The main purpose of the manual, however, is to explain the most basic form of fire protection – fire prevention. It outlines steps you can take to prevent a disastrous fire. Precautions which can greatly reduce the risk of serious fire damage.

Fire prevention on vehicles relies upon two basic factors:

1. Inspection and preventative maintenance at points where fires are most likely to start – engine blocks, electrical systems, turbochargers, exhaust manifolds and brake systems.
2. Regular cleaning of all areas where flammable materials such as fuel, oil, grease, hydraulic fluid and combustible debris may collect.

Vehicle Fire Prevention Maintenance

The following is a suggested daily maintenance outline which can help reduce the risk of fire on your vehicle.

CAUTION: Take care during vehicle maintenance, cleaning, or welding. To avoid unintentionally setting off the system and the discharge of agent, do not cut, pinch, or apply heat exceeding 200 °F (93 °C) to the detection lines of the system.

1. Check all oil, hydraulic fluid and gas lines for cuts, abrasions or undue wear. Replace as needed.



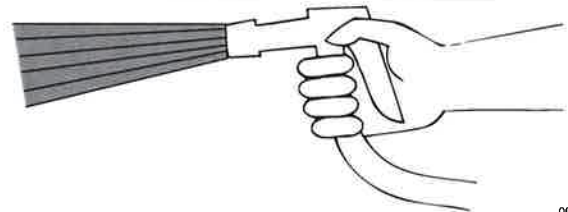
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2. Inspect all oil, hydraulic and gas line fittings for tightness. Clean off all residue and tighten.



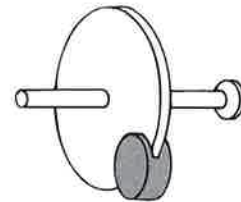
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3. Inspect and clean engine area. Depending upon the operation of the vehicle, use water or steam to clean it. Schedule cleaning for the end of the work shift when heat buildup may occur after the engine is shut down.



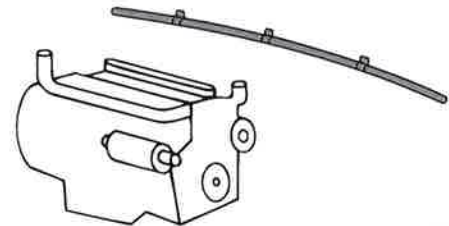
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4. Check braking system for proper adjustment – especially if brakes overheat when not engaged.



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5. Check all possible ignition points (engine block, exhaust manifolds, turbochargers, etc.). Make sure oil, hydraulic fluid and gas lines are not in contact with these ignition points.



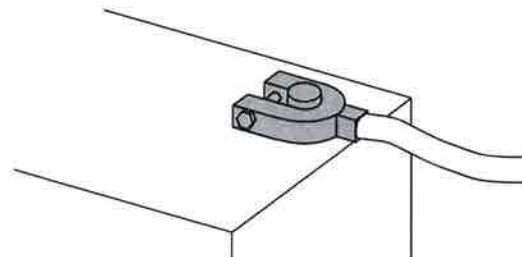
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6. Clean vehicle of all combustible debris – dry vegetation, grain particles, coal dust, etc. Also, remove any oil and fuel drippings.



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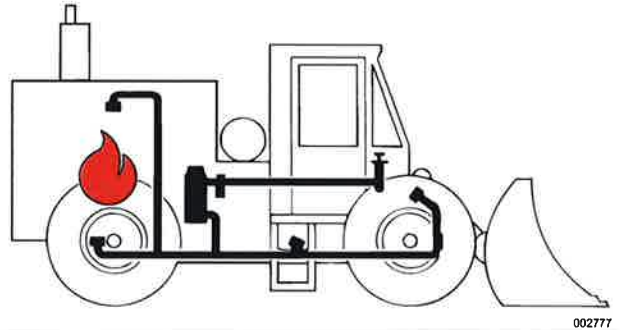
7. Check all electrical lines and connections for tight fit, wear or abrasion. Replace any defective electrical equipment or wiring.



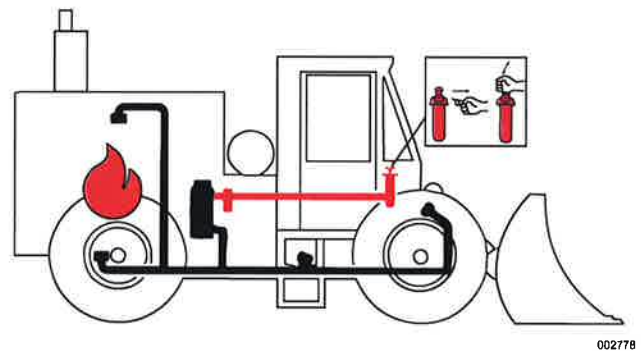
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How your Ansul Fire Suppression System works . . . manually

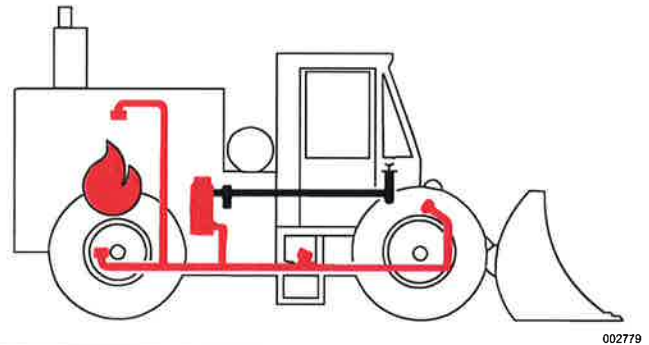
1. A fire starts in the protected area.



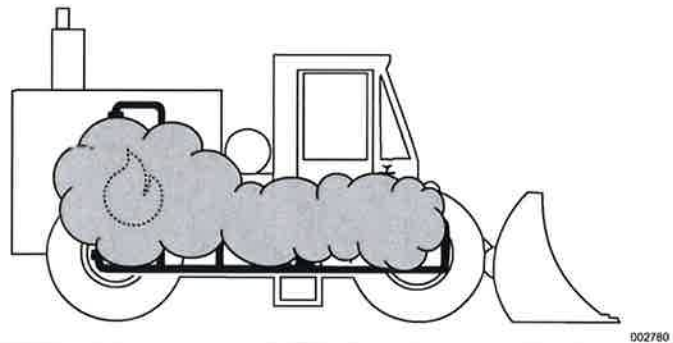
2. Equipment operator pulls the ring pin and strikes the plunger on the manual actuators. Pressure from the actuator causes the Ansul Fire Suppression System to actuate.



3. Expellant gas pressure "fluidizes" the dry chemical extinguishing agent and propels it through distribution hose.



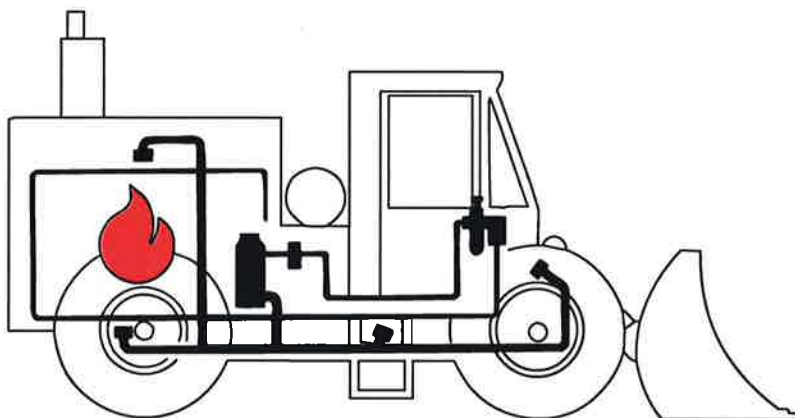
4. Dry chemical extinguishing agent is discharged through fixed nozzles into protected areas, suppressing the fire.



**And you can have automatic 24 hour protection with
Ansul CHECKFIRE Detection and Actuation Systems . . .**

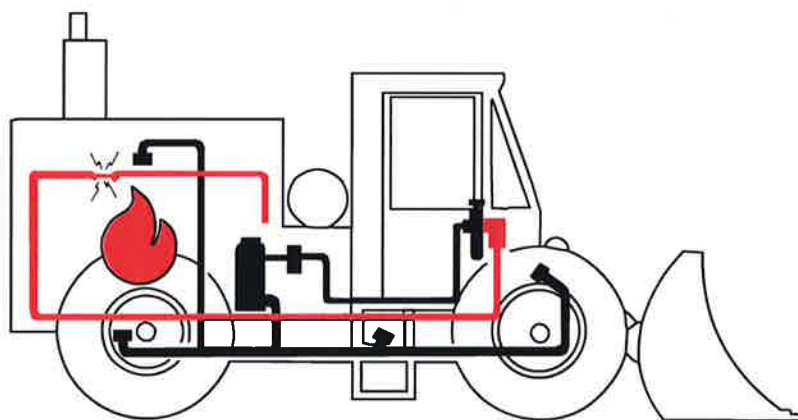
How the system works with optional CHECKFIRE Electric Detection and Actuation

1. A fire starts in the protected area.



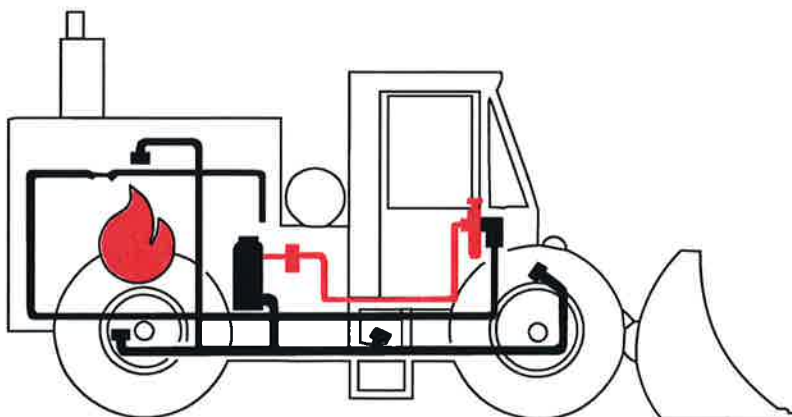
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2. Linear or spot detectors signal the system control module indicating that a fire has started in the protected area.



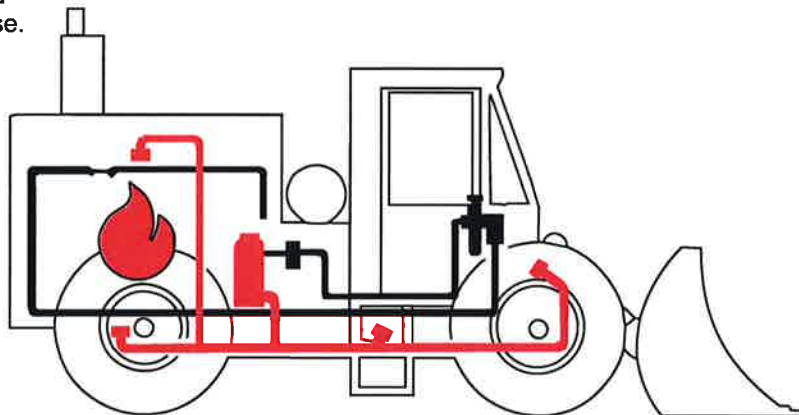
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3. The Control Module actuates the fire suppression system. The module will also provide time delay, shut down functions and activation of auxiliary vehicle components in accordance with your installation.



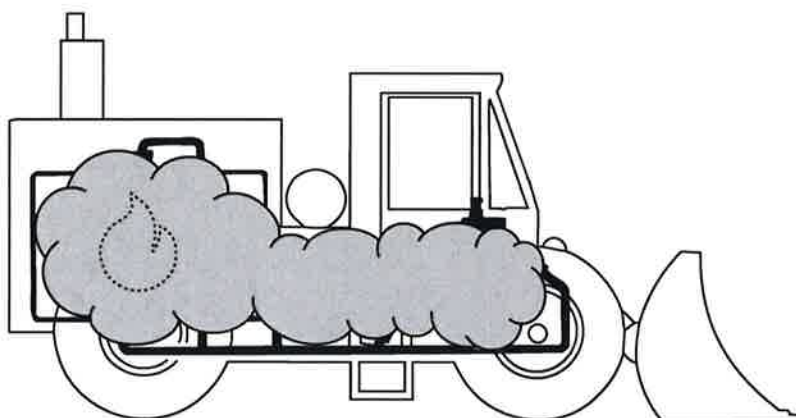
002783

-
- 4.** Expellant gas pressure “fluidizes” the dry chemical extinguishing agent and propels it through the distribution hose.



002784

-
- 5.** Dry chemical extinguishing agent is discharged through fixed nozzles into protected areas, to suppress the fire.



002785

Optional LVS (Twin Agent) Fire Suppression System

Along with dry chemical fire suppression system protection, some vehicles, because of their size, require an additional type of system. This type of system is called a twin agent system. An Ansul LVS, Liquid Agent System, is designed to discharge wet chemical into the protected hazard areas after the dry chemical discharge has ended. The addition of the wet chemical produces a cooling effect onto the flammable fuel and the surrounding surface areas. The wet chemical can flow into hard to reach areas where fuels may have flowed into.

Make sure your Ansul Fire Suppression System is

The Ansul Fire Suppression System is your second line of fire defense in case your fire prevention efforts are not enough. However, in order to perform properly, your Ansul System requires periodic inspection and maintenance.

Nozzles

BLOW-OFF CAPS IN PLACE (IF SUPPLIED)



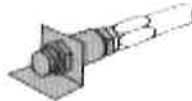
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NOZZLES NOT CLOGGED OR COVERED WITH DEBRIS



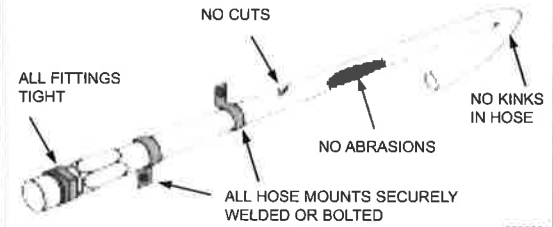
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NOZZLES TIGHT IN BRACKETS



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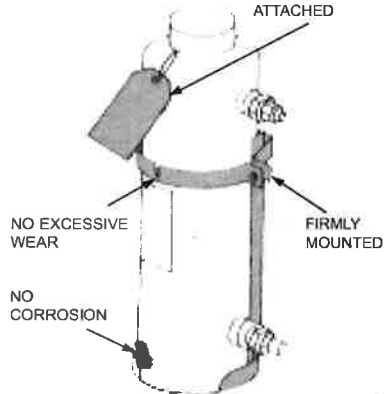
System Hydraulic Hose



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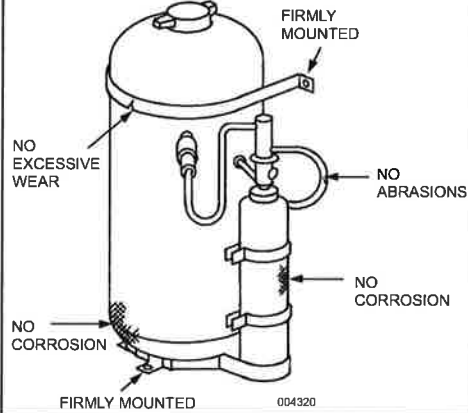
Agent Tank A-101

AUTHORIZED ANSUL DISTRIBUTOR CERTIFICATION TAG ATTACHED



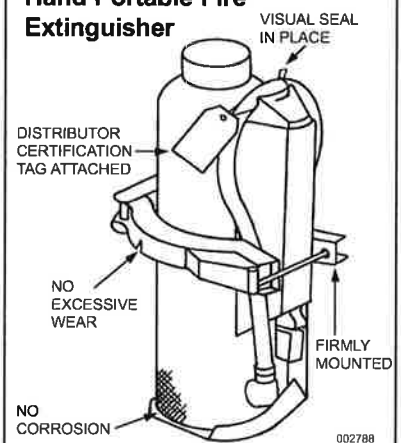
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Agent Tank LVS or LT-A-101-125/250



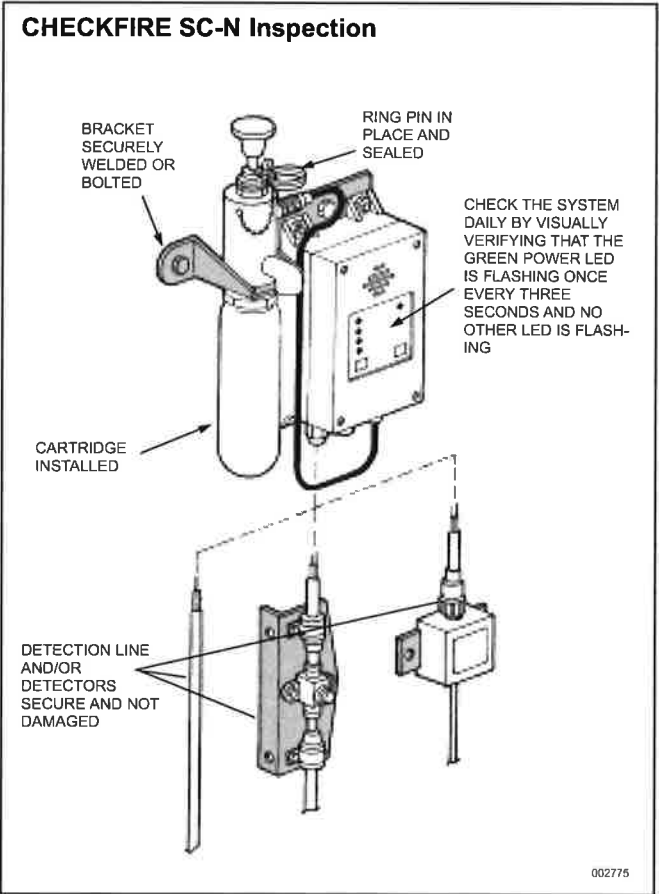
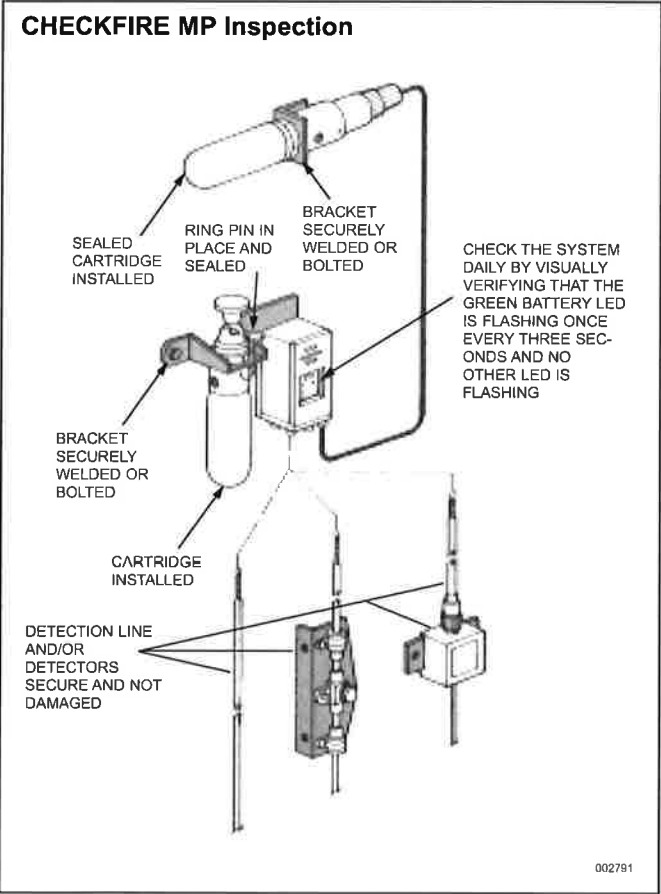
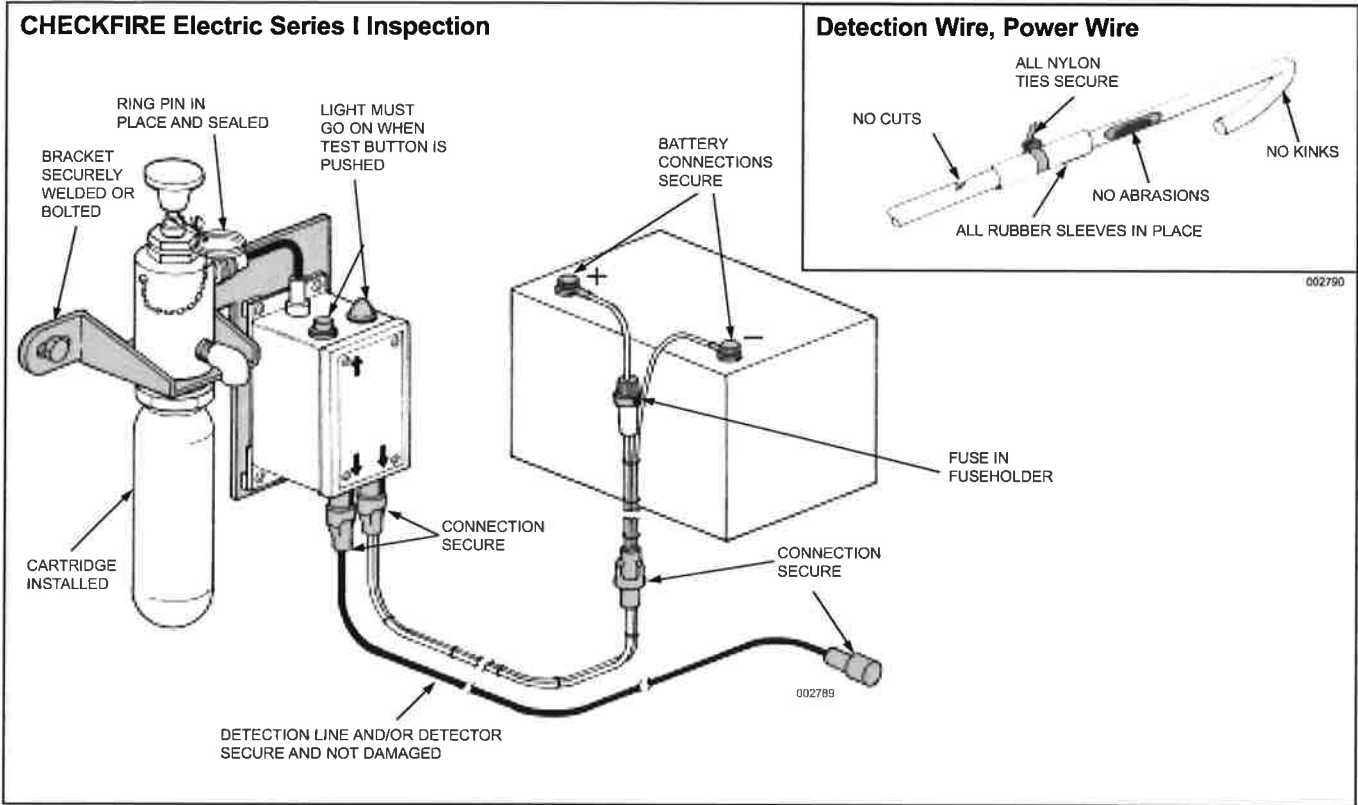
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Hand Portable Fire Extinguisher



002788

kept in good working order.



Provide for vehicle modification

Your Ansul Fire Suppression System was custom designed and installed on your vehicle to protect specific hazard areas from fire. Should you add accessory equipment to your vehicle at a later date, or make major mechanical modifications, you may be reducing the capabilities of the Ansul Fire Suppression System.

When such modifications are made, contact your Ansul distributor. He can reevaluate your Ansul System to ensure it protects all hazard areas from fire.

Provide for periodic maintenance

Periodic maintenance is essential to ensure that your Ansul Fire Suppression System is operational. Contact your Ansul distributor for periodic follow-up, in-depth inspection and maintenance.

Protect against fires outside of the hazard area

Hand portable fire extinguishers are an effective way to suppress fires which may occur away from the vehicle, or in areas not protected by the Ansul Fire Suppression System. Your Ansul distributor can recommend the proper size, type and placement of hand portable extinguishers and train your personnel in their operation, inspection and maintenance.

Should fire occur in an area not protected by the Ansul Fire Suppression System, a hand portable fire extinguisher should be employed as follows:

- 1.** Shut off the vehicle's engine and set brakes.
- 2.** Evacuate the vehicle and secure a hand portable fire extinguisher.
- 3.** Approach the fire from the upwind side.
- 4.** Actuate the hand portable fire extinguisher per instructions printed on the extinguisher's nameplate.
- 5.** Once the fire is extinguished, stand by in case the fire reflash.

ATTACHMENT 6
WP 12-9 WIPP EMERGENCY MANAGEMENT PLAN
136 PAGES

WP 12-9
Revision 42

WIPP Emergency Management Plan

Cognizant Department: Emergency Management and Security

Approved By: David Stuhan



An AECOM-led partnership with B&W and AREVA

WIPP Emergency Management Plan
WP 12-9, Rev. 42

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CHANGE HISTORY SUMMARY

REVISION NUMBER	DATE ISSUED	DESCRIPTION OF CHANGES
31	10/12/10	<ul style="list-style-type: none"> Editorial revision to remove the reference to attachment F of the HWFP.
32	01/10/11	<ul style="list-style-type: none"> Added provisions for performance of a Baseline Needs Assessment. Added a new subsection to describe the continuity of Operations Plan.
33	05/23/12	<ul style="list-style-type: none"> Added information to better clarify items and to be consistent with the requirements of DOE Order 151.1C. Changes include: <ul style="list-style-type: none"> Updated the Acronyms list. Updated the references noted in 1.1. Added bullet for wildland fire to subsection 1.4.2.6. Revised 10th bullet for subsection 3.5 for firefighting support. Added subsection 5.3.5, Hazardous Biological agent or Toxins Emergency. Revised rem amount to subsection 8.6. Added information for wildland firefighting to 1st bullet subsection 12.1. Added 2nd paragraph under subsection 12.3.2. Added last sentence to last paragraph under subsection 12.4. Added last part of 1st paragraph to subsection 14.2 beginning "Building evacuation...annually." Revised subsection 14.4.
34	12/27/12	<ul style="list-style-type: none"> Removed second bullet from subsection 3.5 regarding the Joint Powers Agreement. Removed reference to the alternate on-site Emergency Operation Center in subsection 4.12. Added an appendix to identify exercises that validate EM program elements over a 5 year period. Added a description of the gates on north and south access road in step 8.1 and a description of the gated area on the south access road in section 8.5. Section 13.2 training table now states that only JIC Manager(s) are to complete NIMS training. Editorial changes in accordance with MD 1.1.

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REVISION NUMBER	DATE ISSUED	DESCRIPTION OF CHANGES
35	02/27/13	<ul style="list-style-type: none"> Modified section 1.5 to clarify the basis for emergency planning is based on DSA worst case accidents and malevolent acts, which are bounded by DSA worst case accidents. Modified section 1.7 to describe the basis for the WIPP EPZ. Modified section 3.1 to further clarify offsite interfaces including requests for assistance to close roads in the event whose consequences extend beyond 300 meters from the WIPP release point. Modified subsection 6.3.1 to address requests for traffic control assistance. Modified section 8.1 to further clarify road closures in the event of a WIPP emergency whose consequences extends beyond 300 meters from the WIPP release point. Added section 12.5 to address procurement of emergency response equipment and services to maintain or test emergency response equipment. Added required reading of the Emergency Planning Hazards Assessment to the training table in 13.2. Also added the consequence assessment team to the table.
36	09/30/13	<ul style="list-style-type: none"> Added bullets in section 1.5 for beyond design basis natural phenomena events and aircraft crash events. Added in sections 2.2 and 2.3 references to additional incident command structures for the different event types that could occur at WIPP including external agency interface and support. Clarified in subsection 2.4.1 the capabilities of response personnel and how response may be addressed when the primary response group is already engaged and a second event occurs. Updated section 4.2 to correct that there is currently only one fully equipped pumper engine at WIPP and that a backup pumper is acquired from local volunteer agencies or municipalities when the WIPP pumper is taken out of service for testing, maintenance, or repair. Added Attachment 1, Incident Command Structure for Specific WIPP Events.
37	10/23/13	<ul style="list-style-type: none"> Administrative updates to address WIPP Form opportunities for improvement.
38	11/05/13	<ul style="list-style-type: none"> Editorial revision to update CFRs under step 1.1.

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REVISION NUMBER	DATE ISSUED	DESCRIPTION OF CHANGES
39	12/18/13	<ul style="list-style-type: none"> • Administrative updates throughout document to address WIPP Form opportunities for improvement and other minor editorial issues. • Updated section 2.4 to identify entry requirements for emergency response personnel. • Added in subsection 12.3.2 information regarding performance metrics.
40	05/02/14	<ul style="list-style-type: none"> • Updated Figure 2.2 – Unified Command. • Updated in subsection 12.1, requirements for ERO training. • Deleted in subsection 13.2, “All personnel receive training for their routine work assignments.” • Added in subsection 13.4, requirements for personnel who receive training off-site or online. • Updated references throughout.
41	11/03/14	<ul style="list-style-type: none"> • Complete rewrite. Major changes include: <ul style="list-style-type: none"> - Incorporated National Incident Management System principles, concepts, and terminologies. - Organized content to more closely align with DOE G 151.1-3, Appendix A.
42	11/02/15	<ul style="list-style-type: none"> • Merged CBFO Emergency Management Plan into NWP/WIPP Emergency Management Plan. • Updated organization terminology. • Adjusted EOC structure to include new and updated positions.

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ACRONYMS AND ABBREVIATIONS

AEGL	Acute Exposure Guideline Level
ASO	Assistant Safety Officer
BLM	Bureau of Land Management
CAT	Consequence Assessment Team
CBFO	U.S. Department of Energy Carlsbad Field Office
CBRNE	chemical, biological, radiological, nuclear, or explosive
CFR	Code of Federal Regulations
CH	Contact-Handled
CM	Crisis Manager
CMC	Carlsbad Medical Center
CMR	Central Monitoring Room
CMRO	Central Monitoring Room Operator
COA	Continuous Ongoing Assessment
COOP	Continuity of Operations Program
COW	Chief Office Warden
DBE	Design Basis Earthquake
DBT	Design Basis Tornado
DCM	Deputy Crisis Manager
DOE	U.S. Department of Energy
DOE-HQ	DOE Headquarters
DSA	Documented Safety Analysis
EAL	Emergency Action Level
EC	Emergency Coordinator
EM	Office of Environmental Management
EM&S	Emergency Management and Security Department
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
EPHA	Emergency Planning Hazards Assessment
EPHS	Emergency Planning Hazards Survey
EPI	Emergency Public Information
EPZ	Emergency Planning Zone
ERAP	Emergency Readiness Assurance Plan
ERO	Emergency Response Organization
ERPG	Emergency Response Planning Guidelines
ERT	Emergency Response Team
FB	Fire Brigade
FBI	Federal Bureau of Investigation
FEMA	Federal Emergency Management Administration
FMD	Facility Manager Designee

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FSM	Facility Shift Manager
GE	General Emergency
HAZMAT	Hazardous Materials
HP	Health Physics
HQ	Headquarters
HSPD	U.S. Department of Homeland Security Presidential Directive
HWFP	WIPP Hazardous Waste Facility Permit
IAP	Incident Action Plan
IART	Incident/Accident Response Team
IC	Incident Commander
ICP	Incident Command Post
ICS	Incident Command System
IH	Industrial Hygiene
IMT	Incident Management Team
JIC	Joint Information Center
LEPC	Local Emergency Planning Committee
LRMC	Lea Regional Medical Center
LWA	Land Withdrawal Area
MRT	Mine Rescue Team
NARAC	National Atmospheric Release Advisory Center
NFPA	National Fire Protection Association
NIMS	National Incident Management System
NMASIC	New Mexico All Source Intelligence Center
NMDPS	New Mexico Department of Public Safety
NMDHSEM	New Mexico Department of Homeland Security and Emergency Management
NNSA	National Nuclear Security Administration
NWP	Nuclear Waste Partnership LLC
OAT	Operational Assistance Team
OE	Operational Emergency
OENRC	Operational Emergency Not Requiring Classification
OERC	Operational Emergency Requiring Classification
OW	Office Warden
PA	Protective Actions
PAC	Protective Action Criteria
PAG	Protective Action Guide
PAO	Public Affairs Officer

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PAR	Protective Action Recommendations
PAS	Public Address System
PIO	Public Information Officer
PPA	Property Protection Area
PPE	Personal Protective Equipment
RAP	Radiological Assistance Program
RCRA	Resource Conservation and Recovery Act
RCT	Radiological Control Technician
rem	Roentgen Equivalent in Man/Mammal
RH	Remote-Handled
RRCC	Regional Response Coordination Center
RWC	Regional Watch Center
SAE	Site Area Emergency
SFO	Senior Federal Official
SME	Subject Matter Expert
SOC	Security Operations Center
SWB	Skeen Whitlock Building
TEEL	Temporary Emergency Exposure Limit
TIA	Timely Initial Assessment
TRU	Transuranic
TRUPACT	Transuranic Packaging Transporter Model
UFE	Underground Facility Engineer
WHB	Waste Handling Building
WIPP	Waste Isolation Pilot Plant

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1.0 INTRODUCTION

This Waste Isolation Pilot Plant (WIPP) Emergency Management Plan consolidates the U.S. Department of Energy (DOE) Carlsbad Field Office (CBFO) and Nuclear Waste Partnership LLC (NWP) Emergency Management Programs. CBFO provides overall direction and oversight of the WIPP Emergency Management Program. NWP, as the Management and Operating Contractor for the WIPP, provides for the safety of employees, contractor personnel, visitors, and members of the general public during emergency conditions at the WIPP. The management of emergency situations focuses on minimizing the risk of personnel injury and minimizing the exposure of employees, the environment, and the public to radioactive or hazardous substances/wastes to a level that is as low as reasonably achievable. The Emergency Management Program also addresses emergency response at the Skeen Whitlock Building (SWB) and other facilities in Carlsbad occupied by CBFO and NWP personnel.

1.1 Purpose of the Emergency Plan

The purpose of the WIPP Emergency Management Plan (EMP) is to provide the CBFO with an effective and efficient Emergency Management Program. The EMP documents the Emergency Management Program, commensurate with the identified hazards under the cognizance of NWP, and provides guidance and requirements for emergency planning, preparedness, response, mitigation, readiness assurance, and recovery activities in order to maintain acceptable levels of protection for the safety and health of employees, responders, and the public, property, and environment. The plan also provides a framework for the program to integrate with existing city, county, state, tribal, and federal emergency systems and assist with their emergency management and planning processes.

The EMP provides an organized process for handling significant incidents, emergency events or potential events that could threaten human health or the environment, Operational Emergencies Not Requiring Classification (OENRCs), and Operational Emergencies Requiring Classification (OERCs) with adequate emergency response and recovery capabilities through comprehensive preparedness activities. The EMP capabilities include the following:

- Provide maximum protection for onsite and offsite personnel who could be affected by an emergency at WIPP.
- Ensure protection of national security, the environment, critical infrastructure, facilities, and equipment.
- Minimize the impact of an emergency on facility and site operations and security.
- Provide clear, timely, and technically accurate site-related emergency information to the public and public officials; federal, state, and county agencies/organizations; DOE Headquarters (HQ); and the media.

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- When requested and in accordance with mutual aid agreements with offsite agencies (e.g., Memoranda of Understanding, Memoranda of Agreement, Mutual Aid Agreements, Agreements in Principle), provide emergency assistance to the State of New Mexico and New Mexico counties and communities in planning and responding to an emergency occurring outside the boundaries of WIPP.
- Facilitate emergency planning with offsite authorities by providing a technical-based assessment of hazards, to include those hazards related to transportation.
- Provide full compliance with the National Incident Management System (NIMS) per U.S. Department of Homeland Security Presidential Directive (HSPD)-5, *Management of Domestic Incidents*.

The technical basis for WIPP emergency planning, preparedness, response, recovery, and readiness assurance activities is DOE Order DOE O 151.1C, *Comprehensive Emergency Management System*. The plan also implements requirements from the New Mexico Environment Department NM4890139088-TSF, *WIPP Hazardous Waste Facility Permit* (HWFP), including the Resource Conservation Recovery Act (RCRA) Contingency Plan. Additional driving documents include other DOE orders and guides, applicable federal regulations, and state and local laws, regulations, and ordinances.

1.2 Scope/Applicability

This document addresses and applies to the management of Operational Emergencies (OEs) or significant incidents that could potentially occur onsite at WIPP or at outlying locations. The term “onsite” refers to operations on the WIPP site only, and “offsite” refers to community responders outside the responsibility of WIPP such as law enforcement, fire department, and other Emergency Management agencies.

The term “outlying locations” refers to work locations and/or facilities under the cognizance of the WIPP, NWP, or CBFO that are outside the boundaries of the WIPP (e.g., the SWB). Individual facilities or activities may not implement programs in a manner inconsistent with the requirements contained herein unless documented approval is obtained from the DOE/CBFO.

WIPP Emergency Management and Security (EM&S) Department is responsible for coordinating emergency management activities at all outlying locations.

This document is not intended for:

- Management of and recovery from incidents that are within the scope of normal operations
- Events identified under DOE O 232.2, *Occurrence Reporting and Processing of Operations Information*, as Significance Categories 1, 2, 3, 4, or R
- Energy emergencies

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Continuity of Operations Program (COOP) information is contained in other documents, but is integrated into the Emergency Management Program framework.

The WIPP Emergency Planning Hazards Assessment (EPHA) analyzed event scenarios taken from Documented Safety Analysis (DSA) worst case accidents, malevolent acts which are bounded by the DSA accidents, and standard workplace hazards. As a result, the EMP applies to response actions relative to the following categories of emergencies:

- Aircraft crash
- Beyond design basis natural phenomena events
- Earthquakes/seismic events
- Medical emergencies
- Public Health Emergencies
- Radiological or hazardous material emergencies
- Security emergencies (malevolent acts)
- Severe weather emergencies including extreme straight line winds, tornados, and snow load
- Structural fires/waste container fires
- Underground emergencies
- Waste container breaches (surface and underground)

The Emergency Response Organization (ERO) staff (comprised of federal employees and contractors) falls under the Emergency Management Program and is required to adhere to this document to ensure a comprehensive and consistent emergency management capability. The title Emergency Operations Center (EOC) is applicable to ERO EOC functions and not applicable to the EOC daily operations.

This plan is implemented through various document types including plans, administrative emergency management procedures, emergency response procedures, and standard operating guides.

1.3 Concept of Operations

The Emergency Management Program is based on the emergency management activities (mitigation, preparedness, response, recovery) required under an Operational Emergency Base Program and an Operational Emergency Hazardous Material Program. Thus, preparedness and response activities are based on a graded approach commensurate with the identified hazards.

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This plan identifies lines of authority, the responsibilities of emergency response personnel, the responsibilities of ERO positions, and the WIPP manpower/equipment resources available to deal with emergencies.

1.3.1 Integrated Safety Management System

The Integrated Safety Management System is implemented through Core Functions and Applicable Principles embedded in the EMP. The Core Functions include the following:

- Define Work Scope – This plan is implemented when an OE is declared or a significant incident occurs that requires the ERO activation for incident response, management, coordination, and/or recovery.
- Analyze Hazards – The EPHA and the Emergency Planning Hazards Survey (EPHS) are addressed in the EMP and define the hazards at the WIPP site.
- Develop/Implement Controls – The EMP outlines the responsibilities of the personnel in the ERO and the general actions that they perform when the EMP is implemented.
- Perform Work – The work is performed using the emergency procedures and actions that are developed based on the EMP.
- Feedback/Improvement – Critiques are conducted after drills, exercises, and actual events to discuss, record, and act upon the items that did not occur or the items that could/should be improved in order to enhance the WIPP emergency management capabilities.

1.3.2 Emergency Management Plan Basis

The EPHS and the EPHA, if required, form the scientific basis for emergency planning, preparedness, and response activities, and are part of the safety basis documentation for this facility. EPHSs and EPHAs are developed by WIPP contractors and other tenants performing work under the cognizance of WIPP. The EPHSs and EPHAs conform to the requirements of DOE O 151.1C.

1.3.3 Emergency Planning Hazards Survey

The EPHS is the formal mechanism used to determine the scope and extent of the Base Program and is required for each facility under the cognizance of WIPP. An EPHS documents the results of the hazard survey and identifies and qualitatively assesses regional and facility-specific hazards and the associated emergency conditions that may trigger a response. An EPHS also identifies the emergency conditions (e.g., fires, workplace accidents, natural phenomenon); describes potential health, safety, or environmental impacts; and summarizes the applicable planning and preparedness requirements. If hazardous materials (HAZMAT) are identified in the EPHS, then a HAZMAT screening process (as defined in DOE O 151.1C) is conducted to determine the need for an EPHA. The HAZMAT screening process must identify all

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HAZMAT in a facility/activity that requires further analysis, to include radioactive materials and chemicals.

If the screening process identifies at least one type of HAZMAT requiring further analysis, then the EPHS must indicate that an EPHA is needed for that facility/activity. If the quantitative analysis indicates that all events would be classified as less than an Alert, then an EPHA is not required. The results of the HAZMAT screening process and the quantitative analysis may be incorporated directly into the EPHS or may be incorporated by reference in the EPHS.

HAZMAT are any solid, liquid, or gaseous materials that are toxic, flammable, radioactive, infectious, corrosive, chemically reactive, or unstable upon prolonged storage in quantities that could pose a threat to life, property, or the environment. Oil, as defined in Title 33 United States Code (USC) Chapter 26 Section 1321, *Oil and Hazardous Substance Liability*, is “oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil.” Consistent with federal law, oil is not included in the definition of HAZMAT used in this document.

The EPHS is updated every 3 years and whenever significant changes to the site or to HAZMAT inventories occur. Changes to the site that result in a reduction of hazards with no adverse effect on safety or emergency preparedness or response may be included in the next scheduled review and update of the document. The CBFO makes appropriate submissions to DOE HQ Program Secretarial Officer(s) and the Director, Office of Emergency Operations in accordance with DOE O 151.1C.

1.3.4 Emergency Planning Hazards Assessment

The EPHA provides the technical basis for elements of the Operational Emergency Hazardous Material Program. The EPHA is a quantitative analysis of the consequences of release or loss of control of HAZMAT (either radiological or non-radiological [i.e., chemical and/or biological]). Facilities/activities that handle or store HAZMAT above defined threshold levels whose inadvertent release could result in Protective Action Criteria (PAC) being exceeded, as identified in DOE O 151.1C, are required to conduct an EPHA.

The EPHA also includes a determination of the size of geographic area surrounding the site to which emergency planning will be applied, known as the Emergency Planning Zone (EPZ). Within the EPZ, special planning and preparedness activities are required to reduce the potential health and safety impacts from an event involving HAZMAT. EPHAs are the authorization basis documents for determining and approving the EPZs. EPZs are also approved by facility management.

The WIPP EPHA quantitatively analyzes all significant types of bounding accident scenarios identified in the WIPP Documented Safety Analysis (DSA) and evaluates the consequences. In addition, the EPHA evaluates a malevolent act as the initiator for a release using an appropriate Material At Risk, which is used to estimate the worst-case

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source term. The spectrum of accidents analyzed in the DSA that were determined to be applicable for the WIPP site are used for emergency planning purposes.

The EPHA is reviewed at least every 3 years and updated whenever significant changes to the site/facility or HAZMAT inventories are planned. Emergency Management is a required reviewer for any changes to the Hazardous Materials Management Plan, purchase requisition procedure, and the plan for Safety Basis and Supporting Document Updates. Emergency Management approval of chemicals that exceed the screening criteria and any new storage/use areas or increased storage of National Fire Protection Association (NFPA) flammable, reactive, or oxidizer chemicals is being integrated into the Hazardous Materials Management Plan. Emergency Management is also being added as a reviewer for any safety basis changes.

Based on these reviews/approvals, the EPHA will be revised as needed. Revisions to the EPHA are made according to applicable plans and procedures. Changes to the inventory/facility that result in a reduction of hazards with no adverse effect on safety or emergency preparedness and response may be included in the next scheduled review and update. The CBFO forwards the EPHA to DOE HQ Program Secretarial Officer(s) and the Director, Office of Emergency Operations, as applicable.

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2.0 Site Description

WIPP is a permanent disposal facility for Transuranic (TRU) and TRU mixed waste. In the process of performing this function, the DOE has designed the WIPP as a one-of-a-kind facility to demonstrate many technical and operational principles associated with the permanent disposal of TRU and TRU mixed waste. Operational principles are those associated with receiving, handling, and emplacing TRU and TRU mixed waste. WIPP is also designed to provide a facility in which studies and experiments related to radioactive waste disposal are conducted.

The Land Withdrawal Area (LWA) defines an area of 16 sections totaling 10,240 acres. The LWA (WIPP site boundary) contains the Off-Limits Area and the Exclusive Use Area. Figure 2.1 provides the Site Boundary Area for the WIPP Site. Within the Exclusive Use Area is the 35-acre Property Protection Area (PPA), which is enclosed by a perimeter security fence.

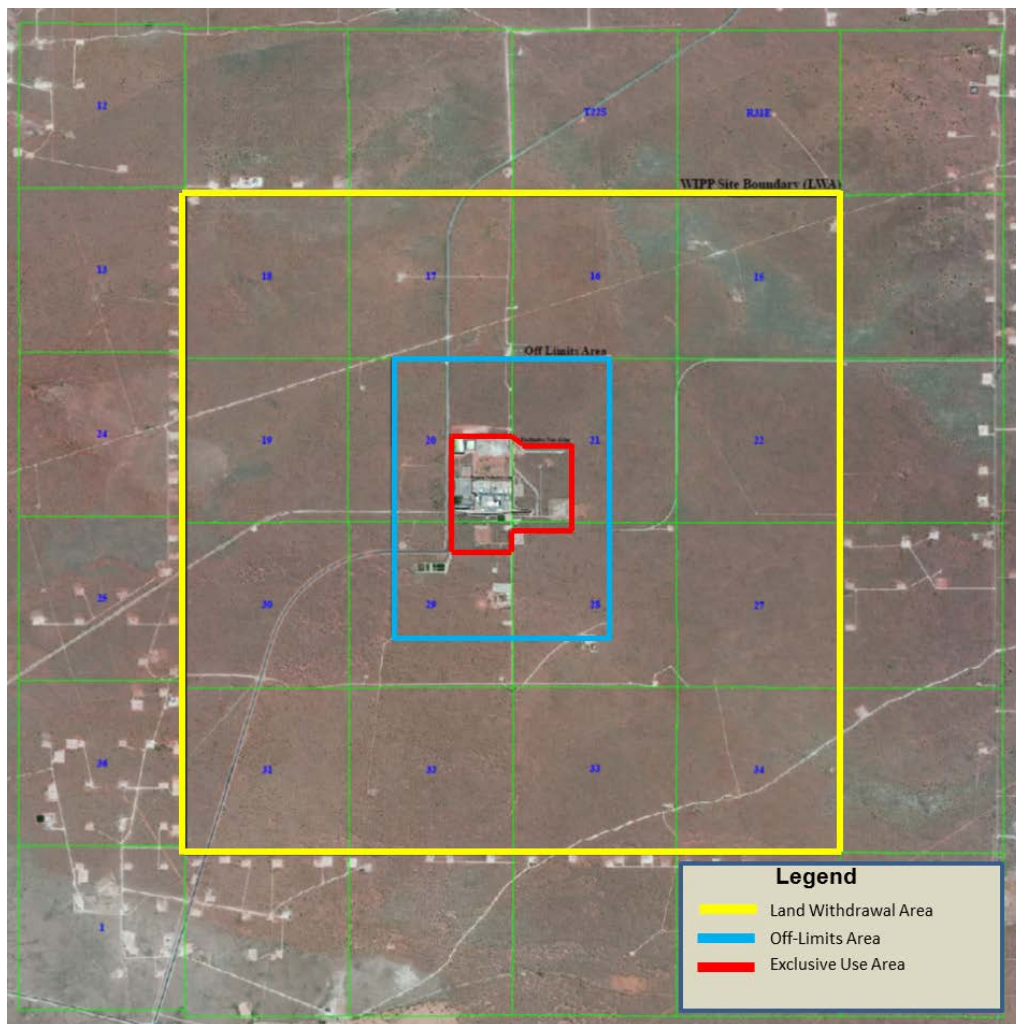


Figure 2.1 - WIPP Site Boundary Area

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2.1 Detailed Facility Description

2.1.1 WIPP Surface Structures

The WIPP facility surface structures accommodate the personnel, equipment, and support services required for the receipt, preparation, and transfer of waste from the surface to the underground facility. The surface structures are located inside the fence line of the PPA.

The Waste Handling Building (WHB, 411) is where the primary surface operations at the WIPP facility are conducted. The WHB is divided into several separate areas:

- Contact-handled (CH) TRU waste handling area
- Remote-handled (RH) TRU waste handling area
- Support areas

WIPP surface support structures house personnel and equipment that support the WIPP mission.

- The Exhaust Filter Building (413) contains banks of high-efficiency particulate air filters that are used to filter potentially contaminated air from the underground in the unlikely event of a release. The underground ventilation system fans are located on the surface adjacent to this building.
- The Support Building (451) provides office space, analytical laboratories, change rooms, and houses the Central Monitoring Room (CMR).
- The Safety and Emergency Services Building (Bldg. 452) provides offices, a dosimetry laboratory, medical facilities, the EOC-WIPP, and the Fire Department (FD) vehicle bay.
- The other surface structures include the warehouse buildings (453 and 455), Engineering Building (486), Guard and Security Building (458), Training Building (489), pump house, trailers, and other auxiliary buildings.

Figure 2.2 provides a map of the WIPP surface structures.

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Figure 2.2 - WIPP Surface Structures

2.1.2 WIPP Underground Structures

The WIPP underground structures are on the disposal horizon and consist of the waste disposal area and the shaft pillar area.

The waste disposal area is located 2,150 feet underground and has two main entries (one for fresh air and one for return air) and a number of waste disposal rooms. The layout of the shafts and entries allows mining and disposal operations to proceed simultaneously.

- A typical disposal panel consists of up to seven disposal rooms. Each room is approximately 33 feet wide, 13 feet high and 300 feet long. The disposal rooms are separated by pillars of salt 100 feet wide and 300 feet long.
- Panel entries at each end of these rooms are also 33 feet wide and 13 feet high. These panel entries are used to dispose of waste, except in the first 200 feet from the main entry, which are of smaller size (22 feet by 14 feet), and are used to install the panel closures.

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The underground support area consists of a workshop and warehouse in the shaft pillar area at the disposal horizon. The shop area consists of a repair bay, welding bay, lubrication bay, electrical shop, warehouse, and several parking areas. An office, electrical substation, lunchroom, and sanitary facilities are also located at the disposal horizon.

Figure 2.3 provides the WIPP underground layout.

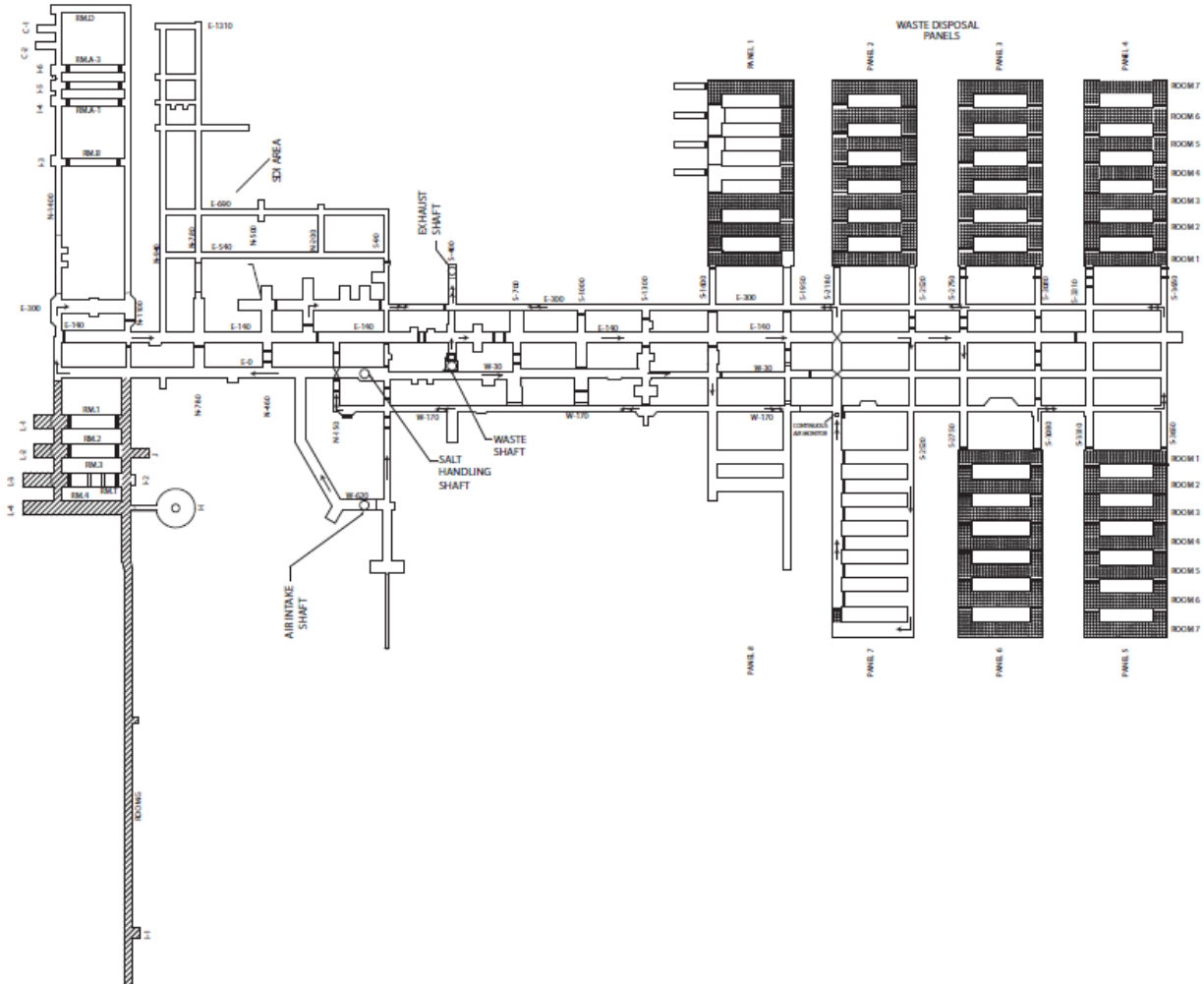


Figure 2.3 - Underground Layout

2.2 Physical Attributes of the Site

2.2.1 Geography

WIPP is located in Eddy County in southeastern New Mexico, 26 miles southeast of Carlsbad. The site is approximately four miles square and covers an area of approximately 10,240 acres. The Pecos River is located approximately 14 miles west of the WIPP facility.

2.2.2 Hydrology

Neither the probable maximum flood for the Pecos River nor floods induced by dam failure represent a risk to the WIPP facility, since the site is located 14 miles from the river and more than 400 feet above the Pecos River flood plain. Protection from flooding caused by intense local precipitation is provided by the diversion of water away from the WIPP facility by a system of peripheral interceptor diversions.

Additionally, grade elevations of roads, tracks, and surface facilities are designed so storm water will not collect on the site under the most severe conditions. Shaft collars prevent surface water from entering the shafts.

2.2.3 Topography and Geology

The land surface in the vicinity of the WIPP facility is a semiarid, windblown plain sloping gently to the west and southwest with an abundance of sand ridges and dunes. The average slope within a three-mile radius is approximately 50 feet per mile from the east to west.

The WIPP facility is in the southwestern portion of the southern Great Plains physiographic region. This province is a broad highland belt that slopes gently eastward from the Rocky Mountains and basin and range province on the north and west to the central lowlands province on the east side. The majority of the terrain in southeastern New Mexico is characterized by slight high ground with a gentle southwesterly slope characterized by caves, fissures, underground streams, clay, and sand dunes. The major permanent drainage of the area is the north-south flowing Pecos River, 14 miles west of the WIPP facility.

Structurally, the WIPP facility is situated at the southwestern margin of the central stable region of North America. It lies within a fairly under formed area, north and west of the Ouachita Tectonic Belt, which is characterized by broad arches, basins, platforms, and shelves. The immediate structural setting of the area around the WIPP facility is the Delaware Basin. Historical structural development of this basin began in the Pennsylvanian period and ceased in the late Permian period of geologic time, when it was filled with evaporates and covered by younger sediments. Since that time, the basin has undergone only broad regional tilting.

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2.2.4 Population Distribution

The area surrounding WIPP has a low population density, with approximately sixteen permanent residents living within a 10-mile radius of the site. The nearest residents live at the J. C. Mills Ranch, approximately 3.5 miles from the center of the site. The area surrounding the site is used primarily for grazing, potash mining, and mineral exploration. No industrial areas, military installations, or airports exist within a five-mile radius of the site.

Figure 2.4 displays the 1-, 2-, 4-, 8-, and 16-km radius rings from WIPP with the mines and ranches they encompass.

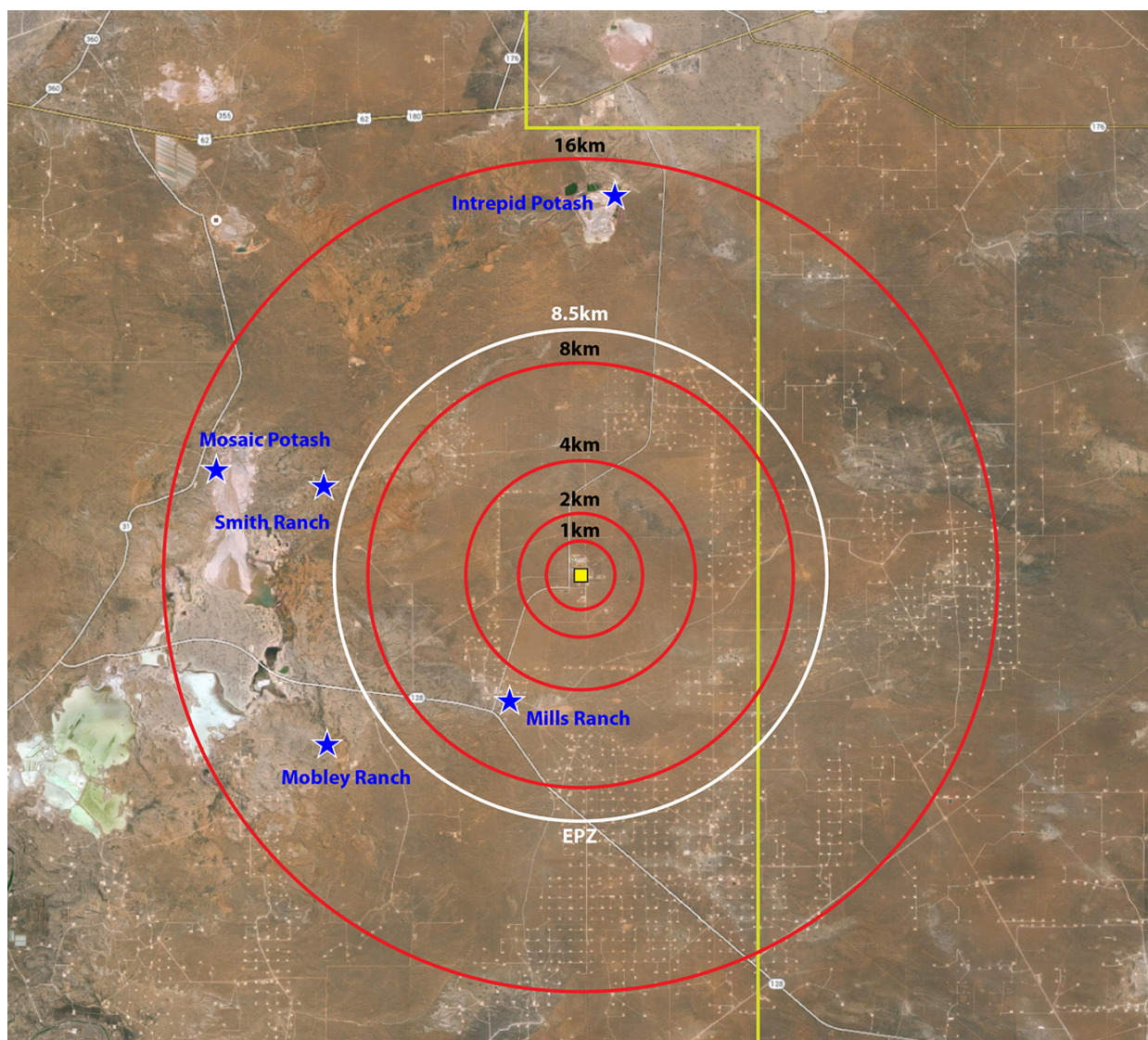


Figure 2.4 - 1-, 2-, 4-, 8-, and 16-km Radius Rings from WIPP

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The following communities lie within a 50-mile radius: Carlsbad, Loving, Otis, White's City, Lakewood, Black River Village, Hobbs, Eunice, and Jal. Figure 2.5 displays the 50-mile radius from WIPP.

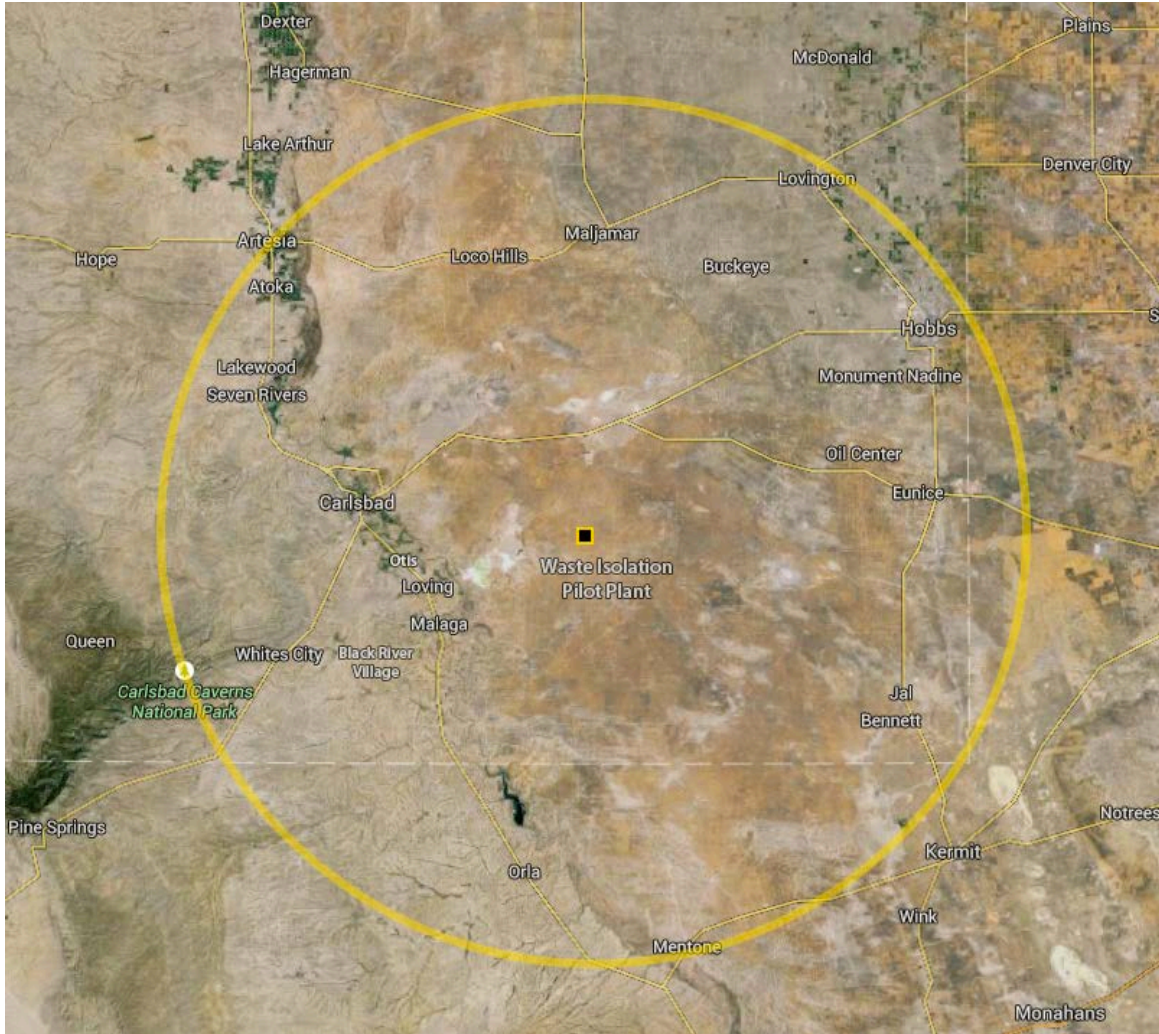


Figure 2.5 - 50-Mile Radius from WIPP

2.2.5 Meteorology

The climate of the region is semiarid, with generally mild temperatures, low precipitation and humidity, and a high evaporation rate. Winds are moderate and most commonly from the southeast. During the winter months, the weather is dominated by a high-pressure system often situated in the central portion of the western United States and a low-pressure system commonly located in north central Mexico. During the summer, the region is affected by a low-pressure system normally situated over Arizona.

2.2.6 Natural Phenomena

The engineering design of the WIPP facility takes into account risks created by various natural phenomena. Specifically, protection against the following hazards is included in the design:

- Earthquakes – The Design Basis Earthquake (DBE) is the most severe credible earthquake that could occur at the WIPP site. DBE structures, systems, and components are designed to withstand a free-field horizontal and vertical ground acceleration of 3.2 feet per second (0.1 g) based on a 1,000-year recurrence period, and will retain their safety functions. (A DBE would be approximately a 6 on the Modified Mercalli Scale.) Structures and components at WIPP designed to withstand the DBE include the WHB, Support Building, Exhaust Filter Building, Transuranic Packaging Transporter Model (TRUPACT)-II Maintenance Facility, RH waste handling system and equipment, and radiation monitoring and alarm systems.
- High winds – The design wind velocity for the WHB is 110 miles per hour at 30 feet above ground level, with a 1000-year mean recurrence interval. The design wind velocity for other WIPP structures is 91 miles per hour with a 50-year mean recurrence interval, except for the Support Building and the Exhaust Filter Building, which is 99 miles per hour with a 100-year mean recurrence interval.
- Tornadoes – The Design Basis Tornado (DBT) is the most severe credible tornado that could occur at the WIPP site. DBT structures, systems, and components at the WIPP site are designed to withstand the 183 mile per hour winds with a translational velocity of 41 miles per hour, a maximum rotational velocity radius of 325 feet, a pressure drop of 0.5 pounds per square inch, and a pressure drop of 0.09 pounds per square inch generated by the DBT, based on a 1,000,000-year recurrence period, and will retain their safety function. (A DBT would be approximately a 4 on the Enhanced Fujita Scale.) The exterior metal siding of the WHB is not credited to withstand tornado driven objects; therefore, the contents of the building could be subject to damage.
- Snow Loading – The design snow loading is derived from the 100-year recurrence snow load of 10 pounds per square foot. Roof snow loads are calculated by multiplying the design snow load by the appropriate coefficients. The WHB, the TRUPACT Maintenance Facility, and the waste hoist tower are designed for a snow load of 27 pounds per square foot.
- Wildland Fire – Wildland fires can occur within the 16 sections of the WIPP site; however, minimal damage is expected within the WIPP PPA due to the PPA being paved or graveled and surrounded by a gravel road, such that fires do not propagate. Combustible loading along the fence is minimized through the combustible loading controls, including vegetation removal and mowing.

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2.2.7 Transportation System

New Mexico Highway 62/180 is approximately 11 miles north of the WIPP site. New Mexico Highway 128 is approximately 3 miles south of the WIPP site. New Mexico Highway 128 connects with New Mexico Highway 31, which leads to Highway 285, and provides access to Carlsbad. New Mexico Highway 128 is used by ranchers, school buses, potash miners, and oil and gas company vehicles. Several dirt roads in the area are maintained for ranching, pipeline maintenance, and access to drilling sites.

The DOE north/south access road to the WIPP site lies between New Mexico Highways 62/180 and 128. This access road is used by WIPP employees, oil and gas company vehicles, and ranchers. No other major roads are located within a five-mile radius.

With the exception of the inactive rail spur that was originally designed to facilitate waste shipment by rail to WIPP, no railroad lines lie within a five-mile radius of the facility.

Transportation of employees to the WIPP site is by company-furnished buses or private vehicles. In the event of a site evacuation requiring employees to use transportation to leave the site, the following transportation is available:

- Buses/Vans – WIPP buses/vans are available for evacuation of personnel. The buses/vans are stationed in the employee parking lot and transport personnel to and from the site daily. The personnel who ride the buses/vans to the site would evacuate the site in the same manner unless otherwise directed by the FSM.
- Private Vehicles – Personnel who travel in private vehicles to the site would evacuate the site in the same manner unless otherwise directed by the FSM.
- WIPP Vehicles – A number of passenger sedans, pickups, and vans are assigned to WIPP. Although these vehicles are not specifically assigned for evacuation purposes, they may be used in an emergency.

2.2.8 Utility System

The WIPP facility has water and electrical utilities provided by outside sources. Water is supplied from a connection with a commercial water system located approximately 30 miles north of the facility that is provided by the City of Carlsbad. An incident affecting the water system could impact critical systems such as fire suppression.

Electrical power is supplied redundantly by the local electric company. The electrical system distributes and controls the electrical power requirements for the equipment and process loads, both on the surface and underground.

Two backup diesel generators are in place that can power selected loads on the surface and underground if site power is lost. Additional information about site utilities is available in the system design documents.

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3.0 Emergency Response Organization

3.1 General Responsibilities

The CBFO Manager is responsible for the overall executive direction of emergency planning, preparedness, response, and recovery for WIPP. The CBFO Manager appoints qualified individuals to serve as CBFO Senior Federal Officials to maintain situational awareness and oversight in the EOC when activated. The CBFO Manager and NWP Project Manager designate members and serve as part of the Policy Group.

The CBFO Emergency Management Program Manager provides oversight and the WIPP EM&S Department Manager is responsible for a compliant Emergency Management Program. The CBFO Emergency Management Program Manager provides program coordination including technical assistance and emergency resources. The CBFO Emergency Management Program Manager coordinates with NWP Emergency Management to ensure training and qualification of federal staff assigned to the ERO.

During normal operations, management responsibility belongs to the NWP President and Project Manager, who reports to the CBFO.

Certain emergency management decision-making authorities cannot be delegated, must be performed in a timely manner, and may pass from one authority level to a more senior position after activation of the ERO and official transfers of command and control occur.

For the purpose of this plan, “timely” means fast enough for response activities to be effective in protecting worker and public health and safety.

3.2 Organization Structure

DOE Headquarters provides strategic policy direction for emergency management, provides assistance and guidance to CBFO, and evaluates the broad impacts of an emergency across the DOE Complex. Headquarters also coordinates with other federal agencies at the national level, providing information to representatives of the executive and legislative branches of the federal government, and responding to inquiries from the national media.

The Headquarters Watch Office serves as the point of contact for receipt of all emergency notifications and reports. Accordingly, the Headquarters Watch Office receives, coordinates, and disseminates emergency information to Headquarters elements and program office emergency points of contact, the White House Situation Room, and other federal agencies. The Director, Office of Emergency Operations, is the single point of contact and control for all emergency management activities, and issues all policy, requirements, and guidance for the DOE Emergency Management System.

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CBFO oversees the facility response and provides assistance and guidance to the facility management. CBFO also provides information to Headquarters and coordinates with other federal agencies on a local level. NWP manages the response to the emergency and incident management actions necessary to restore the facility to a safe condition.

3.2.1 Operations

The on-shift Facility Operations crew falls under the supervision of the Facility Shift Manager (FSM). The FSM is responsible for facility operations at the WIPP site. Operations are conducted in accordance with approved operating procedures and good operating practices. Specific on-shift responsibilities are listed below:

- The FSM is in charge of plant operations and is the senior shift representative responsible for maintaining the facility in a safe configuration during normal and abnormal situations. The FSM is the individual responsible for emergency management functions until formally transferred to the EOC Crisis Manager (CM) or Deputy Crisis Manager (DCM). The FSM remains the primary RCRA Emergency Coordinator (EC) in accordance with the RCRA Contingency Plan. In the event that the FSM is unable to assume or maintain these duties, the Facility Shift Engineer will assume these duties.
- The Central Monitoring Room Operator (CMRO) is the coordination point for site activities and the focal point for all communications between the surface and underground facilities. The CMRO reports directly to the FSM.
- The Facility Operations Roving Watch is responsible for carrying out the orders and directions of the FSM within the WIPP facility. The Roving Watch conducts an in-depth tour of the entire facility at least once per shift and makes reports directly to the FSM regarding plant equipment status and operation.
- The Underground Facility Engineer (UFE) is responsible for the activities in the underground. During an emergency event, the UFE may be called upon to perform tasks or verify conditions in the underground at the direction of the FSM.

3.2.2 Radiological Control

Upon notification of a potential for a radiological release, or when unexpected radiological conditions are encountered, the Radiological Control Manager, with support from the Radiological Control Technicians (RCTs), is responsible for site radiological monitoring and assessment activities. The responsibilities include personnel protection including decontamination, equipment contamination surveys, and radiological control. They provide guidance for the evaluation of radiological incidents and support the Incident Commander (IC) as technical advisors.

RCTs are responsible for monitoring, sampling, and ensuring that the capability (e.g., procedures, equipment) to perform these responsibilities is maintained in a state of readiness.

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3.2.3 Emergency Response Organization

The purpose of the ERO is to respond to emergencies at WIPP site and facilities in a timely, efficient, and effective manner, and implement immediate PAs and emergency response to ensure the safety and health of workers and the public, and protect property, the environment, and national security. The ERO adheres to applicable ERO procedures, maintained by NWP for WIPP.

Staff for positions within the ERO comes from NWP and the CBFO. Minimum qualifications, duties, and responsibilities are assigned to each position in the ERO according to applicable procedures. Assurance that qualified personnel are available 24 hours a day, 7 days a week (24/7) to perform emergency response functions is achieved by having between two and four individuals able to fill each EOC position and be assigned to the weekly on-call watchbill.

EM&S maintains a list of qualified ERO personnel, including names and contact numbers, that rotate weekly in on-call positions and whose assistance might be needed in resolving, investigating, and mitigating an abnormal event or emergency. During their week on-call, these personnel will be available 24 hours a day by pager, telephone, or cellular phone; must be able to respond in a timely manner; and must remain fit for duty.

The response of the ERO is based on the NIMS approach to integrated emergency response. NIMS represents a core set of doctrines, concepts, principles, terminologies, and organizational processes to enable effective, efficient, and collaborative incident management at all levels. It is not an operational incident management or resource allocation plan.

The WIPP ERO has adopted a tiered organizational structure, as defined in the DOE O 151.1C guides, for responding to OEs using the NIMS approach. Each tier provides management, direction, and support of emergency response activities with specific roles and responsibilities during an emergency as follows:

- Tier I - Field Emergency Response, Incident Command Function
- Tier II - Initial Notifications, Communications, Incident Management
- Tier III - Incident Management, Coordination, Planning, Offsite Interface

Figure 3.1 shows the tiered incident management structure.

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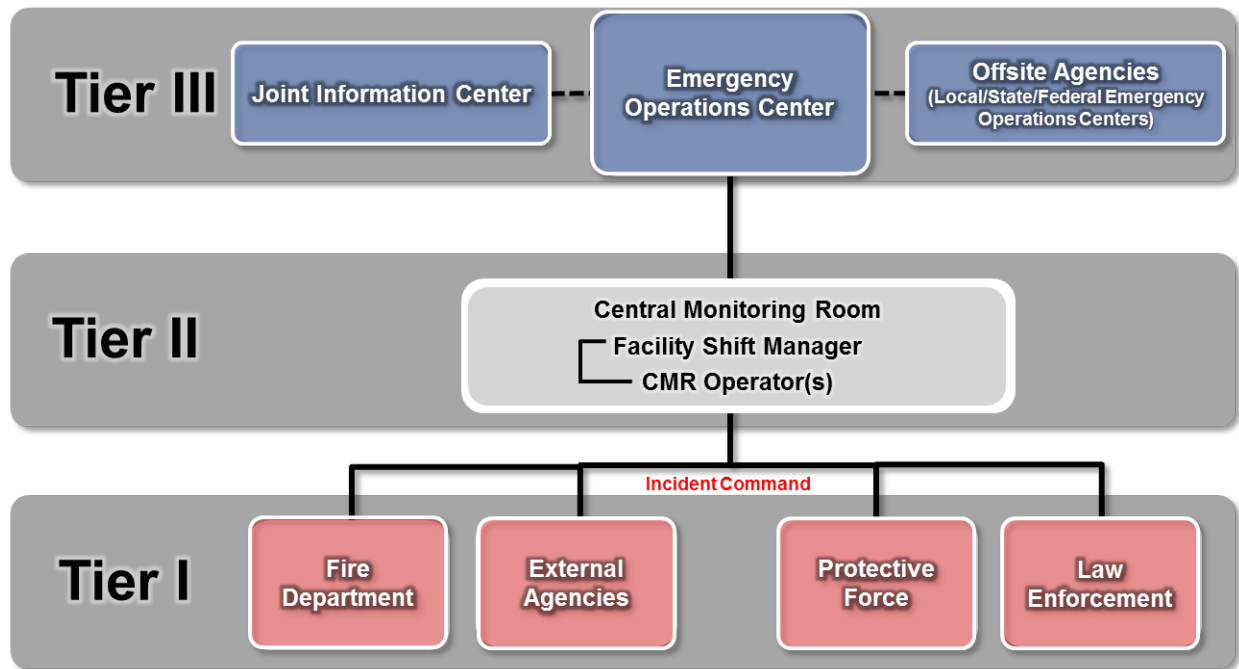


Figure 3.1 - Tiered Emergency Response Organization Structure

3.2.3.1 Tier I

Tier I is comprised of four main groups or teams whose field responders support the incident command function. These are the FD, Protective Force, Law Enforcement, and other offsite first-responder agencies. Tier I is also referred to as the Field ERO and may include members of the Emergency Response Team (ERT), RCTs, Industrial Hygiene (IH), etc. Tier I is considered active when any or all of the four entities are on-scene and have established Incident Command. Table 3.1 summarizes WIPP Tier I facility-level and Incident Command-level roles and responsibilities.

Table 3.1 - WIPP Site Tier I Responder Roles and Responsibilities

Position	Duties and Responsibilities
IC (FD, WIPP Protective Force)	<ul style="list-style-type: none"> Establishes an ICP and manages incident operations, personnel, and resources and develops incident objectives and the overall Incident Action Plan (IAP) for all aspects of field emergency response. Initiates requests for mutual aid from community response organizations, as needed. Ensures that a well-defined Unified Command is in place once achievable.
Industrial Hygienist	<ul style="list-style-type: none"> Provides expertise and support to the IC for chemical events. Conducts HAZMAT surveys; establishes hot lines/cold zones; performs decontamination.
Offsite First Responders, as needed	<ul style="list-style-type: none"> May consist of Explosive Operations Division, Special Weapons and Tactics, air ambulance, HAZMAT, FD, etc.
Onsite Responders	<ul style="list-style-type: none"> Support objectives of the Unified Command. May consist of people from FD, HAZMAT Team, Mine Rescue Team (MRT).
RCTs	<ul style="list-style-type: none"> Provide expertise and support to the IC for radiological events. Conduct radiological surveys; establish hot lines/cold zones; perform decontamination.

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3.2.3.2 Tier II

Tier II is comprised of the FSM and the personnel supporting the CMR. The FSM may delegate duties and responsibilities to qualified individuals as necessary. Table 3.2 shows the Tier II responders roles and responsibilities.

Table 3.2 - WIPP Site Tier II Responder Roles and Responsibilities

Position	Duties and Responsibilities
CMRO	<ul style="list-style-type: none"> Serves as the primary point to provide notification that an incident has occurred at WIPP. Monitors emergency and non-emergency plant conditions. Ensures safe shutdown of systems, if necessary/able. Makes emergency announcements using the public address system (PAS). Activates the field responders and support groups. Activates the EOC staff, at the direction of the FSM or declaration of an OE.
FSM	<ul style="list-style-type: none"> Assesses the situation and assumes initial responsibility for time urgent categorization/classification of the incident per the categorization and classification procedure. Assumes initial responsibility for support of the incident scene, with the assistance of CMROs, and implements immediate PAs, using emergency procedures and checklists. Makes time urgent emergency notifications/initially requests response resources (e.g., FD, HAZMAT, Protective Force, law enforcement, health and safety, facility engineers). Ensures safe shutdown of systems, if necessary/able. Responds to the CMR and supports the IC to provide technical advice/support/resources. Collects accountability and provides information to the IC, CMR, and EOC, if activated. Maintains communication with the IC, EOC, and CMR. Provides formal turnover of the emergency management decision-making to the CM Remains the FSM provides technical advice/support/resources, and maintains responsibility for balance of plant operations.
Operational Assistance Team (OAT)	<ul style="list-style-type: none"> Provides support to the FSM/CMR.

3.2.3.3 Tier III

Tier III is made up of the EOC, the Joint Information Center (JIC), and offsite agencies standing up their EOCs and/or interfacing with the EOC. Table 3.3 shows the Tier III responders roles and responsibilities.

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Table 3.3 - WIPP Site Tier III Responder Roles and Responsibilities

Position	Duties and Responsibilities
EOC	<ul style="list-style-type: none"> • Take action to protect people, property within site boundaries (but outside the incident scene), and the environment. • Evaluate, coordinate, and manage an emergency response. • Review the PAs/PARs and make changes, if warranted, based on the consequence assessment process and Consequence Assessment Team (CAT) plume models. • Update the event categorization/classification, as necessary. • Coordinate with the FSM regarding emergency effects on plant status, systems, and equipment. • Provide logistical and technical support to response on-scene to include supporting the IC with mutual aid, equipment, and personnel requests. • Coordinate and maintain information flow with DOE HQ; federal agencies; state, local, and tribal governments. • Manage Emergency Public Information (EPI); and employee communications. • Provide communications to offsite response organizations and personnel. • Plan and coordinate field team (chemical/radiological) response as requested by IC. • Plan for recovery activities. • Support responding local law enforcement in areas of special deliberate rescue or assault procedures, critical negotiation demands, and rules of engagement. • Support requests made by partner Emergency Management Organizations when appropriate and assets are available.
JIC	<ul style="list-style-type: none"> • Manage emergency public information with federal, state, and local organizations and spokespersons • Provide news releases, social media responses, briefings, and press conferences • Provide work space for internal and/or external media personnel
Offsite Agencies (EOCs)	<ul style="list-style-type: none"> • If offsite agency EOCs (local, state, or federal) are involved, then they interface primarily through the EOC Offsite Liaison

3.2.3.4 Overall Structure

All three tiers of the ERO work together and communicate through established channels to effectively and efficiently respond to the emergency incident. Any or all of the three tiers may be activated to support local, regional, or national incidents as part of the multiagency coordination system.

Figure 3.2 shows communications between the three tiers.

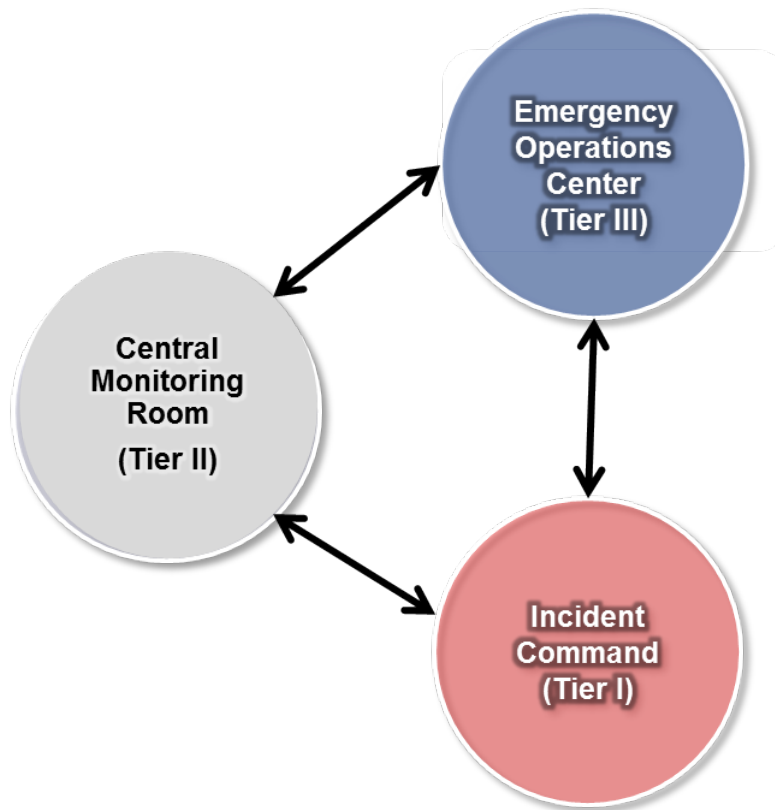


Figure 3.2 - Tier Communications

3.3 Emergency Direction and Control

The ERO is initiated when the CMRO is notified of an incident and deploys emergency response assets according to procedures and notifies the on-shift FSM. When FSM recognizes that an Operational Emergency (OE) or significant incident is imminent, in progress, or has occurred, the FSM assumes the responsibilities for the emergency response functions including the following:

- Categorization and classification of the incident
- Issuing PAs to onsite personnel
- Approving and transmitting emergency notifications to offsite agencies
- Providing protective action recommendations (PARs) to offsite agencies

The FSM may delegate the above stated responsibilities to a qualified individual as necessary.

The CMR assumes the responsibilities for coordinating with the IC, and activating the EOC for all OEs and as directed by the FSM. Once the EOC is staffed and declared operational, a formal transfer of responsibility will occur between the FSM and the EOC CM or DCM.

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If an emergency relocation of the operational EOC becomes necessary due to an immediate situation threatening the safety of the EOC personnel, then the responsibility for emergency management functions may be turned back over to the FSM. When the alternate facility is operational, the CM or DCM will obtain a turnover briefing from the FSM and formally reassume the responsibilities for emergency management functions.

3.3.1 Facility-Level Direction and Control

The FSM is responsible for the overall site and single or multiple facilities, including initial responsibility to deploy first responders to the incident scene. The CMR/FSM will provide first-responders with appropriate information, such as hazards, location of incident, safe route, wind direction, and other incident details as they become available.

The CMR/FSM monitors balance-of-plant conditions and coordinates activities with the IC.

3.3.2 Incident Command Direction and Control

In addition to the facility responders, trained responders who make up part of Tier I and report to the scene of the event include the WIPPF, WIPP Protective Force, and local/state law enforcement. One of these responders assumes responsibility as the IC.

The assignment of the IC is determined based on the type of event, indicators from the initial notification, facility designations, conditions at the scene, or other factors. Once determined, the IC establishes an Incident Command Post (ICP) and informs the CMR of its location. Table 3.4 indicates who assumes the role of IC, incident-dependent.

Table 3.4 - Incident Commander Determination

Organization	Circumstances for Assumption of IC
WIPP FD	<ul style="list-style-type: none"> Assumes the role of IC for structure fires, wildland fires, emergency medical response (mass casualty), mine rescue, and HAZMAT incidents
WIPP Protective Force	<ul style="list-style-type: none"> Assumes the role of IC when there is a security incident or there are other significant security-related interests at the WIPP, until it is determined there is no remaining threat; will be the IC for law enforcement events until local law enforcement arrives on-scene
Local/State Law Enforcement	<ul style="list-style-type: none"> Assumes the role of IC for law enforcement emergencies (e.g., workplace violence, active shooter, criminal acts) at the WIPP
FBI	<ul style="list-style-type: none"> Has overall jurisdictional authority for security/law enforcement incidents occurring at the WIPP and may assume incident command or integrate into the existing command structure once on site

The IC directs activities at the incident scene and uses the Incident Command System (ICS), which provides defined operating characteristics and interactive management components. This NIMS ICS structure allows for the integration of community mutual aid resources to supplement or relieve WIPP response units. Offsite agencies supporting response efforts typically integrate into the ICS forming a Unified Command Structure. Unified Command uses individuals designated by their jurisdictional

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authorities to jointly determine objectives, plans, and priorities and work together to execute them. For more information in ICS, see Support Annex I.

3.4 Emergency Response Operations

The WIPP supports and uses the NIMS during emergency incidents. NIMS will be applied to drills, exercises, and other situations that involve hazards similar to those encountered at actual emergency incidents and to simulate incidents that are conducted for training and familiarization purposes.

The FSM or designee supports the initial emergency response activities at the WIPP site. Taking into consideration the type of incident, the CMRO will dispatch the appropriate responders and implement initial PAs. The FSM or qualified designee will categorize and classify the incident, implement follow-on PAs, and make necessary notifications. The CMRO supports recognition and categorization of OEs. The OAT is also available to the FSM for support.

For any OE or as directed by the FSM, the CMRO activates the EOC. Upon the EOC achieving minimum staffing, the FSM will provide a briefing to the CM or DCM, who will declare the EOC operational and formally assume the roles and responsibilities for emergency management functions in support of the IC and FSM.

The IC may appoint an Operations Section Chief to direct and manage response activities at the scene of the event, and may expand the Incident Command structure to include other general and command staff. The IC may also request support from an Emergency Management professional to assist in setting up the ICP, staging areas, etc.

Figure 3.3 illustrates an example of expanded Incident Command structure with the Operations Section staffed.

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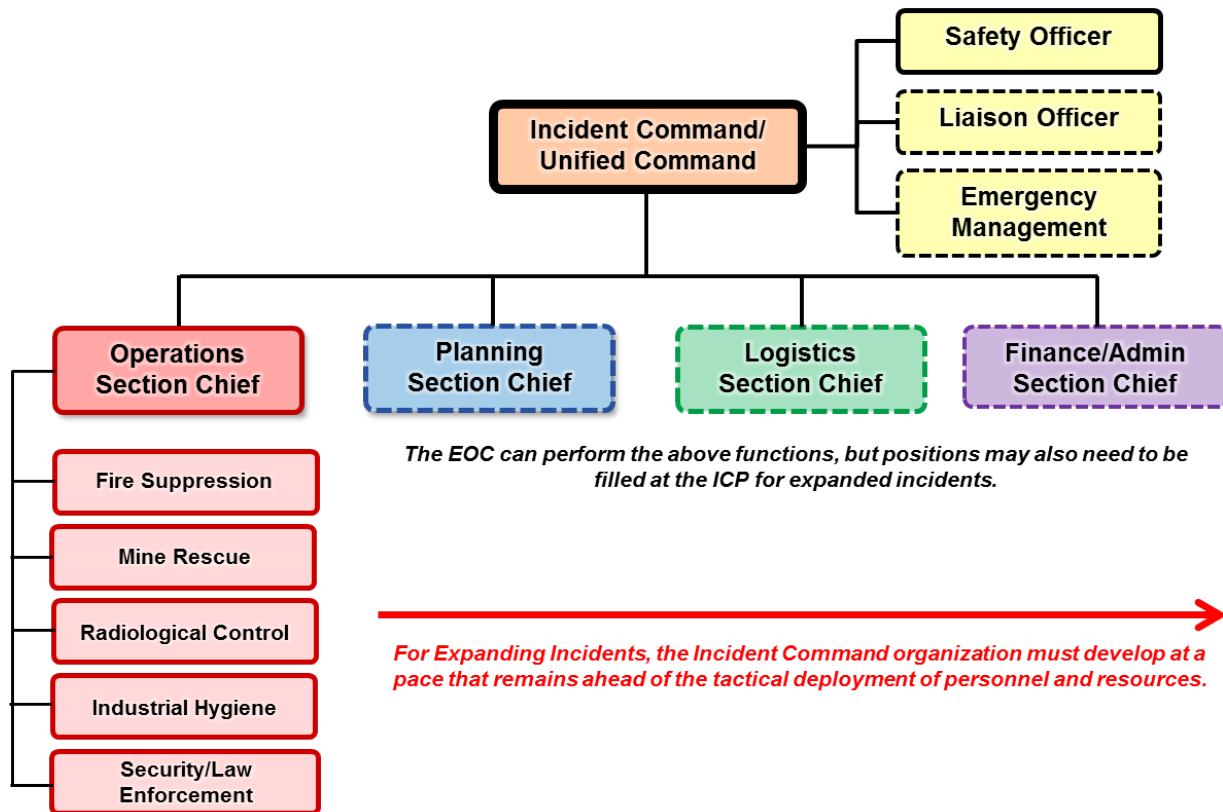


Figure 3.3 – Example Expanded Incident Command Structure

In the event that offsite agencies are requested and respond to the emergency, the IC will incorporate the offsite responders into a Unified Command for the event.

The IC is responsible for the overall coordination and direction of all incident activities, until relieved by another qualified person and formally transferring command. The IC remains solely responsible for the incident response until a unified command structure is established with the local, state, or federal authorities. This includes overall responsibility for the safety and health of all personnel and for other persons operating within the ICS, such as supplemental fire departments and law enforcement agencies responding in accordance with a mutual aid agreement.

3.4.1 EOC Activation and Staffing

The EOC may be activated at three different staffing levels based on the incident and support needed.

- EOC Activation Level 1 – Monitoring team consisting of Emergency Management staff and additional subject matter experts (SMEs) activated at the discretion of the EM&S Manager, Emergency Management Manager, or on-call CM (e.g., for regional monitoring or to support activation of the Incident/Accident Response Team [IART])

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- EOC Activation Level 2 – Minimum staffing positions only for significant events that are not OEs, usually as increased staffing from Level 1 activation or reduced staffing from Level 3 activation (e.g., for the next operational period), activated at the discretion of the FSM, EM&S Manager, Emergency Management Manager, or on-call CM
- EOC Activation Level 3 – Full activation of all EOC positions by the CMR for all OEs and at the discretion of the FSM, EM&S Manager, Emergency Management Manager, or on-call CM

For any OE or as directed by the FSM, CMRO uses the PAS or Communicator! NXT to activate emergency responders who staff the EOC, JIC, and MRTs. Emergency Management staff may also use Communicator! NXT to activate the EOC as directed by the EM&S Manager, Emergency Management Manager, or designee. When ERO personnel call into the Communicator! NXT system, they listen to any further instructions and indicate if they are available to respond and their estimated time of arrival. System reports can be generated with ERO personnel information specific to the response, allowing the CM or DCM to determine the status of their EOC staff members. Tests for the on-call EOC staff are conducted weekly using Communicator! NXT.

EOC activation notices provide information regarding which EOC location to report to (i.e., EOC-SWB, EOC-WIPP, nearest safe EOC location, or alternate safe location), any potential physical or airborne hazards to the personnel responding to the EOC location, and how the hazards are to be avoided (e.g., safe route); or the responders may be directed to call the CMR for detailed instructions.

If the EOC is activated at Level 1, minimum staffing requirements do not apply. When the EOC is activated by the CMRO at Level 2 or 3, the EOC may be declared operational when the minimum staffing positions have arrived at the EOC or have reported in and been integrated virtually. The CM may declare the facility operational if activities of minimum staffing members can temporarily be completed by another staff member.

Based on the event, the CM or DCM may release some staff members that are not in minimum staffing positions and allow them to work at another location and/or remain on call, if needed. The CM or DCM may also authorize reduced EOC staffing levels based on the event and the circumstances.

Depending on the incident, EOC staff may be required to fill their positions for varying lengths of time, and meals, water/drinks, housing, transportation, etc., will be provided as appropriate. Health and safety of the EOC staff members is a priority as well as ensuring that they are fit for duty by providing food and opportunities for rest.

Table 3.5 lists the EOC criteria for activation, estimated times to become operational, and the minimum positions required to be filled prior to being declared operational.

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Table 3.5 - Emergency Operations Center Activation and Minimum Staffing

Facility	When Activated	Operational During Duty Hours	Operational After Duty Hours	Lead/Minimum Staffing
EOC	<ul style="list-style-type: none"> For all OEs At discretion of FSM, EM&S Department Manager, IC, or CM for significant events 	60 minutes	90 minutes	Facility Lead: CM Minimum Staffing: CM or DCM, CBFO SFO, Offsite Liaison, PAO, Operations Section Chief, Planning Section Chief, and CAT

3.4.2 EOC Roles and Responsibilities

The EOC consists of various SMEs who ensure an adequate level of support for the onsite response and recovery activities and provide the EOC with site-specific information relative to offsite interaction and strategic decision-making.

Figure 3.4 shows the ERO structure by position, including the individual EOC positions.

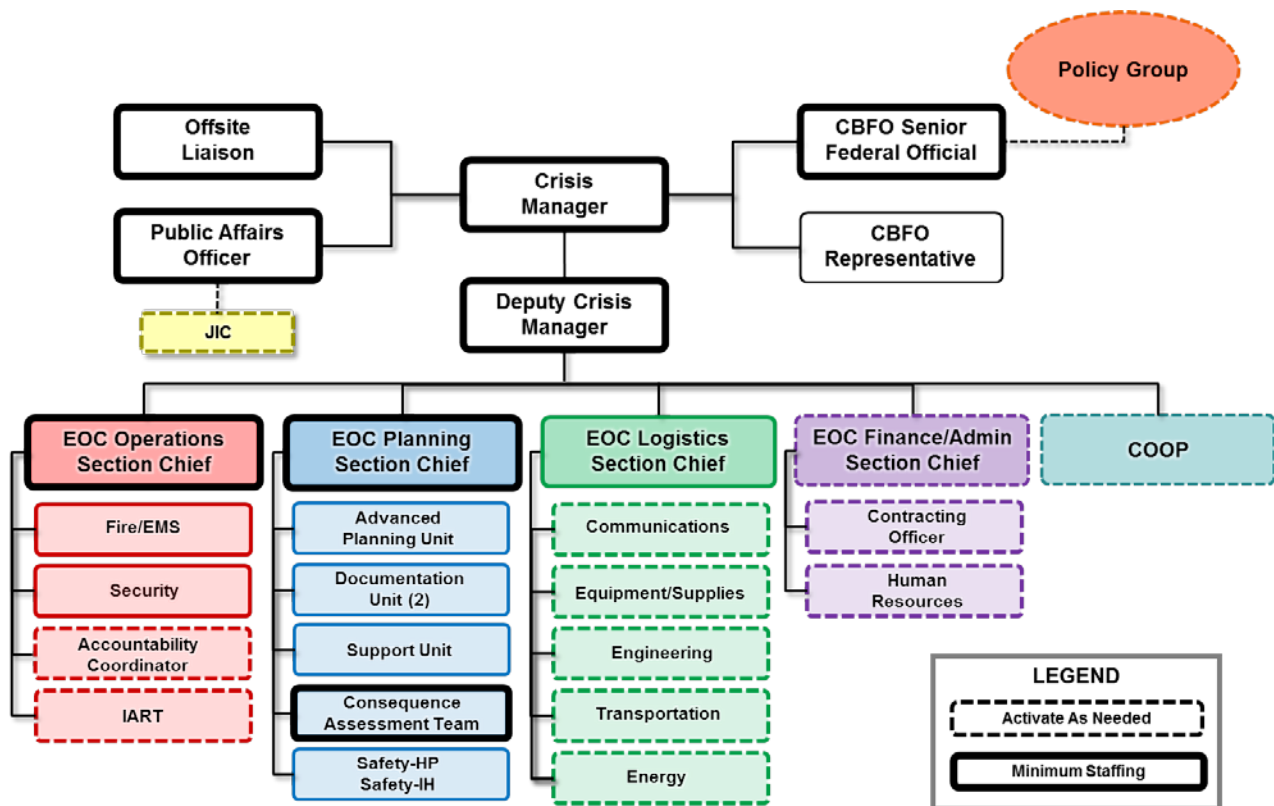


Figure 3.4 – Emergency Operations Center Structure by Position

Each EOC staff member follows a position-specific checklist to ensure all duties from arrival at the EOC through termination of the event are completed. Use of these checklists by the EOC staff is mandatory.

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As needed, EOC staff may request other qualified EOC staff members to report and fill deputy or assistant support positions under their normal EOC positions. Additional personnel may also be requested in the EOC to assist in their areas of expertise (e.g., Transportation Engineering, Site Environmental Compliance/Regulatory and Environmental Services). When the Federal Bureau of Investigation (FBI) responds to a WIPP incident, an FBI liaison will be assigned to the EOC.

Table 3.6 below summarizes some key, general responsibilities for each EOC position. Detailed, specific roles, responsibilities, and tasks are identified in procedures and position-specific checklists. Color coding matches Figure 3.4, as applicable, and the bolded positions are minimum staffing for the EOC to be operational.

The CM and DCM have the same roles and responsibilities as well as the same level of decision-making authority.

Table 3.6 - Emergency Operations Center Positions and Responsibilities

Position	Responsibilities
EOC CM/DCM	<ul style="list-style-type: none"> Responsible for overall operation and management of the EOC and applies span of control principles Declares the EOC operational and formally assumes emergency management decision-making Approves EOC relocation, recovery strategies, and termination
CBFO Senior Federal Official (SFO)	<ul style="list-style-type: none"> Provides oversight for the DOE CBFO Manager in the EOC, supports and assists with issue resolution Provides guidance on DOE interpretation of orders, standards, or policy Initiates and maintains notifications to DOE HQ Program Secretarial Office(s) and designated CBFO managers Declares COOP, if applicable Approves requests for offsite agency support not covered by a pre-existing agreement including other federal agency support Approves release of emergency public information and the Situation Report Notifies the CBFO Manager and coordinates requests for deployment of DOE National Radiological Response Assets with DOE HQ Watch Office Concurs on termination of the incident
CBFO Representative	<ul style="list-style-type: none"> Monitors short- and long-term actual or potential effects on employees, operations, contractors, projects, etc. Reviews public affairs strategies and EOC objectives and priorities. Supports requirements of CBFO SFO
EOC Offsite Liaison	<ul style="list-style-type: none"> Establishes interface with local, state, and federal agencies dependent upon event circumstances Prioritizes initial offsite notifications including PARs and incident information based on actual or potential consequences to the respective jurisdictions Coordinates approval for and the exchange of liaisons Obtains concurrence on termination from participating offsite response organizations

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Position	Responsibilities
EOC Public Affairs Officer (PAO)	<ul style="list-style-type: none"> Develops short and long term public affairs strategies Activates the JIC, if necessary, and coordinates all activities in relation to information exchange Coordinates communications with the JIC Issues and tracks news releases and/or social media response messages May act as the Social Media Writer or request a Social Media Writer report to the EOC
EOC Operations Section Chief	<ul style="list-style-type: none"> Coordinates all activities and functions within the Operations Section Briefs the EOC Staff on incident status Briefs the EOC CM on entry/reentry activities Monitors the status of facility/personnel that have taken PAs Establishes initial and ongoing Operations Section objectives and priorities (EOC Action Plan) and briefs when requested
EOC Fire/EMS	<ul style="list-style-type: none"> Interfaces and coordinates directly with FD response personnel / Incident Command at the scene Identifies available fire protection and EMS resources Informs the IC of any decisions made and/or actions taken by the EOC Coordinates arrangements for FD mutual aid support
EOC Security	<ul style="list-style-type: none"> Communicates with the Security Operations Center (SOC) Determine potential effects to security operations based on the incident Provide a recommendation to change the Security Condition level to the CM Support the on-scene Security Incident Command with resource needs Maintains ongoing interface with offsite security and law enforcement entities involved in the response
EOC Planning Section Chief	<ul style="list-style-type: none"> Coordinates all activities and functions within the Planning Section Establishes initial and ongoing Planning Section objectives and priorities (EOC Action Plan) and briefs when requested Coordinates collection, analysis, consolidation, and distribution of all notifications and reports (e.g., EOC Action Plan, Situation Report), including facilitating approval Directs the development of extended operation schedules Develops the Preliminary Recovery Plan Outline
EOC Advanced Planning Unit	<ul style="list-style-type: none"> Coordinates advanced planning activities with the Planning Section Chief Coordinates development of EOC Action Plan(s) Coordinates relocation activities, extended operations shift cycles, and shift turnover activities, if required
EOC Safety-IH	<ul style="list-style-type: none"> Develops the Field Sampling and Monitoring Plan for IH Mobilizes and directs the IH for field monitoring activities during emergencies that involve a chemical release Validates plume model results during chemical emergencies
EOC Safety-HP	<ul style="list-style-type: none"> Develops the Field Sampling and Monitoring Plan for HP Mobilizes and directs the HP for field monitoring activities during emergencies that involve a radiological release Validates plume model results during radiological emergencies
EOC Documentation Unit	<ul style="list-style-type: none"> Coordinates, collects, analyzes, consolidates, and distributes all notifications and reports (e.g., Situation Report) Maintains status boards, as directed

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Position	Responsibilities
EOC Support Unit	<ul style="list-style-type: none"> Provides administrative assistance to the EOC staff Staffs the Message Center position as needed
EOC CAT	<ul style="list-style-type: none"> Provides consequence assessment support by providing timely initial assessments, generating primary dispersion model products, and distributing them to the ERO Provides distances at which applicable PAC would be exceeded and estimated plume time of arrival, as model allows Provides chemical and radiological material plume modeling interpretations to ERO, Offsite Liaison, and other external agencies, as needed
EOC Logistics Section Chief	<ul style="list-style-type: none"> Coordinates all activities and functions within the Logistics Section Establishes initial and ongoing Logistics Section objectives and priorities (EOC Action Plan) and briefs when requested Identifies and coordinates the acquisition of needed resources, including offsite resources, and allocates existing or known resources Identifies available services to help logistically support an event and verifies that sufficient communication, fleet and equipment, facilities, utility systems, and housing and food resources are available
Finance/Administration Section Chief	<ul style="list-style-type: none"> Coordinates all activities and functions within the Finance/Administration Section Acts as the interface between the Finance/Administration Section and the EOC Command Staff and Section Chiefs Provides a coordinated financial management process for the incident(s) (i.e., tracks incident costs) Interfaces with contracting on allowable costs, reimbursements, etc. Coordinates with Human Resources regarding casualties

3.4.3 Policy Group

In addition to the main EOC positions described above, during a major event CBFO and NWP senior management stakeholders from the federal government and contractors may need to be involved in the overall incident. The Policy Group does not manage the incident. The Policy Group provides a forum for senior management to support the incident with strategic decision-making. Their main role is to focus on policy decisions, the political landscape, and significant expenditures.

The Policy Group is automatically activated for all OEs classified as General Emergencies and may be activated at the request of the CBFO SFO, DCM, and/or CM. The CM appoints a liaison to coordinate between the Policy Group and the EOC. This will assist senior management and stakeholders from the CBFO and NWP in maintaining near real-time situational awareness.

The Policy Group will be provided an operational update briefing schedule to enable their communications with HQ entities, political entities, or other offsite federal partners as necessary. The CM or appointed liaison will remain available to answer specific questions between operational update briefings as needed.

When activated, the Policy Group may meet at the SWB in the EOC Executive Conference Room or another designated location. They may also communicate via teleconference.

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Table 3.7 identifies the typical members of the Policy Group. However, they may request additional support or designate responsibilities to others, based on the event.

Table 3.7 – Policy Group

Organization	Position (or Designee)
CBFO	<ul style="list-style-type: none"> • CBFO Manager • CBFO Deputy Manager • CBFO Spokesperson • CBFO Assistant Managers, as needed • General Counsel, as needed
NWP	<ul style="list-style-type: none"> • President/Project Manager • Deputy Project Manager • Department Managers, as needed • General Counsel, as needed
Other Stakeholders	<ul style="list-style-type: none"> • As needed

3.4.4 Emergency Response Personnel

3.4.4.1 Fire Department

The WIPP FD is made up of NWP employees whose jobs are that of full-time emergency responders. During nonemergency conditions, the FD conducts inspections of facility fire suppression systems and emergency equipment. FD is responsible for keeping the assigned emergency apparatus, including the surface fire truck(s), ambulance, and rescue vehicle, and underground emergency response vehicles, in good operating condition. They are also responsible for the safe operation of the apparatus and the safety of others involved with the apparatus and removing equipment from service, as applicable.

The FD responds to emergencies that threaten lives or property at WIPP (e.g., medical, fire, hazardous material) on the surface and underground. They report information pertaining to emergencies to the FSM, who is responsible for overall operation of the facility. The on-shift FD Lieutenant (senior officer on-scene) typically serves as the IC for medical, fire, and HAZMAT response or the Operations Section Chief for other responses, as needed. The FD can provide support to the MRT, but are not qualified as MRT members.

If there are not sufficient personnel to perform an initial interior attack, or the fire has expanded such that direct attack is unreasonable or impractical, a defensive posture will be assumed until additional firefighters arrive (mutual aid agreement support or WIPP FD/ERTs). For responses to more than one fire or a combination fire/medical event, the FD may request fire/medical support through mutual aid agreements with offsite agencies or rely on the ERT members (normal day shift). The FD may turn over injured personnel to the site nurses (normal day shift), once the injured personnel are out of the hazardous area.

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The WIPP Fire Department Firefighters fulfill the role of the Fire Brigade, the First Line Initial Response Team, and the Emergency Services Technician/Fire Protection Technician as described in the HWFP. FD Firefighters also complete the WIPP Hazardous Material Incident Report as required by the RCRA Contingency Plan.

3.4.4.2 Emergency Response Team

The ERT is an industrial Fire Brigade that consists of volunteer site employees from many departments and supplements the WIPP Fire Department response capabilities on the surface and underground. Managers provide written approval for their personnel to participate on the ERT. This documents that managers understand the time commitment necessary to complete training, qualifications, and certifications. The Fire Brigade is maintained in accordance with NFPA Standards 600 and 1081. This training does not include wildland firefighting. In the event of a wildland fire within the 16 sections of the WIPP LWA, mutual aid agreement support from the Bureau of Land Management (BLM) will be requested.

ERT members are trained as first responders, in firefighting, limited technical rescue, and hazardous material response. The number of responders needed is specific to the emergency situation. Firefighting and HAZMAT response will adhere to the two in–two out rule; technical rescues are situation dependent. The ERT are available during normal dayshifts to provide site support to supplement the FD onsite or the FD in the event that they are unavailable onsite due to an offsite mutual aid agreement support request.

In the event of an emergency, ERT members will leave their normally assigned duties and assume the duties of the ERT. This group is available on any shift, varying in number during normal working hours, to assist the FD during emergency responses. The ERT responds to emergencies that threaten lives or property at WIPP (e.g., medical, fire, hazardous material). The ERT can provide support to the MRT, but are not qualified as MRT members. The ERT continues to fulfill the responsibilities designated for the ERT in the HWFP.

3.4.4.3 Mine Rescue Teams

The MRTs are responsible for underground reentry and rescue. The members of the WIPP MRTs meet the physical fitness requirements specified in 30 Code of Federal Regulations (CFR) Part 49.7, *Physical requirements for mine rescue team*. The MRTs are trained in accordance with 30 CFR Part 49, *Mine Rescue Teams*. MRT training includes breathing apparatus, barricading, first aid, gas detection, search and recovery, ventilation, fire control, and mine mapping. The MRTs participate in mine rescue competitions and site drills to test the effectiveness of training.

Each MRT is composed of five members and one alternate, including a Team Captain. At least one WIPP-based MRT is available at all times when there are personnel underground (except when they are participating in a competition). In an emergency, the FSM will contact the Team Captains, call out the team via Communicator! NXT or

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the PAS, or activate the MRT mutual aid agreements with local or state mines. The ERTs and FD can provide surface support to the MRT, but cannot provide underground support for rehabilitation, barrier erection, or other operations unless a fresh air base has been established by the MRT. The MRT can provide support to the FD/ERT; however, they are not trained in interior attack structural or wildland firefighting, confined space, HAZMAT, high angle rescue, or trench rescue.

3.4.4.4 Operational Assistance Team

The OAT members are designated by the Manager of Facility Operations and provide support to the FSM and the CMRO during the course of an event. The OAT is composed of section/group managers and other personnel with the technical expertise and experience necessary to carry out the mission of assisting during emergency situations.

The availability of designated primary or secondary OAT members is generally limited to normal weekday dayshift hours. Some members of the OAT may be available onsite after normal weekday dayshift hours due to alternate work schedules.

The OAT members are directed by the FSM during an emergency or event in which their assistance is requested. If the EOC has been activated, then some OAT members may fill technical positions in the EOC rather than acting as part of the OAT for that incident.

3.4.4.5 Security

Upon discovery of or notification of a WIPP-related emergency, Protective Force personnel will respond in a manner consistent with the WIPP Security Plan. The Security Manager (or designee) will verify that the necessary security actions have taken place and will further respond to the event.

Security plans procedures and DOE Orders provide guidance on actions that will be taken in each type of credible security emergency. During security or law enforcement events, security will request mutual aid assistance with offsite agencies and will act as the IC.

3.4.5 Federal Support**3.4.5.1 Radiological Assistance Program**

The DOE RAP provides flexible, 24-hour, first-response capability to federal, state, tribal, and local governments for radiological incidents at the direction of the National Nuclear Security Administration. The RAP makes emergency radiological response teams available to any accident location with a number of specialized monitoring instruments to aid in the rapid assessment and mitigation of major radiological incident consequences. The RAP can provide:

- Initial assessment

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- Monitoring/sampling
- Contamination control
- Decontamination

RAP draws upon trained and experienced personnel with specialized competence within the areas of health physics, reactor safety, fire protection, public information and medicine. Selection of team personnel is based on the type and extent of an incident. Several dedicated emergency equipment kits and additional "state of the art" equipment items are available through RAP. Most of the equipment is packaged in portable kits which contain such gear as portable survey instruments, air samplers, grass and soil samplings tools, protective clothing, and miscellaneous items (e.g., rope, tape, warning signs, calculator, and record books). RAP team response time is estimated to be approximately an hour or less.

WIPP supports the regional RAP Team with approximately six people and equipment for responding to offsite radiological emergencies. A DOE RAP Team Leader from the CBFO or another facility will respond to an event with the WIPP RAP Team. The WIPP RAP Team is one of four teams in the DOE Region 4. The other teams are Los Alamos National Laboratory, Sandia National Laboratories, and the Pantex Plant.

RAP teams are deployed in support of the state or local authorities and are not intended to direct actions at the scene or to assume command and control. The team will not represent the state to public media unless requested to assist in this manner.

3.4.5.2 Incident/Accident Response Team

The IART is a CBFO program administered by NWP according to the WIPP IART Plan for the purpose of providing expertise in packaging and transportation to safely expedite the recovery of any Type B TRU waste package involved in an incident/accident. The IART functions as an emergency response asset of the CBFO and receives programmatic and functional direction from CBFO management during emergency responses.

The Director of Office of Program Management National TRU Programs or the on-call CBFO Transportation Manager will activate the IART via the CMRO. The on-call CBFO Transportation Management Team is comprised of three to four individuals on a rotating on-call schedule. The on-call CBFO Transportation Manager is the IART Team Leader. The IART will have two to three alternate members who will respond in the event of an incident/accident.

The IART consists of voluntary members selected from the CBFO and NWP employees for their expertise in leading the IART, packaging engineering, transportation engineering, and public affairs as appropriate. The CBFO External Emergency Management staff provides the administrative functions to maintain the readiness of the team. These duties include maintaining the IART equipment, conducting training, and maintaining records.

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The primary function of the IART is to ensure the safe and uneventful recovery of any package with safety and protection of the team members, emergency responders, the public, and the environment taking priority over all other considerations.

The CBFO will direct and may deploy response personnel and materials for a transportation emergency. At a minimum, a Level 1 EOC will be activated for support of all IART activations. When the EOC is activated for an offsite transportation incident involving a DOE/CBFO shipment to/from WIPP, the IART will implement their plan and integrate into the EOC Operations Section. When the IART is deployed to the field, they will integrate into the existing ICS structure for the incident.

Drivers are trained in the appropriate response for emergency situations. The CBFO has entered into agreements with the Joint Nuclear Accident Coordination Center and the Western Governors' Association for the safe parking for WIPP trucks and their payloads in the event that weather conditions, civil disobedience, or other events interfere with travel.

3.4.5.3 Federal Radiological Monitoring and Assessment Center

The Federal Radiological Monitoring and Assessment Center (FRMAC) gathers radiological information such as plume and deposition predictions, air and ground concentrations, exposure rates and dose projections, assurance of data quality, and current meteorological conditions and weather forecasts. FRMAC provides the results of the data collection, sample analysis, evaluations, assessments, and interpretations to the key decision makers in the affected areas of the emergency. Monitoring continues until all of the surrounding areas where radioactivity was released are fully evaluated.

When a FRMAC is established it operates under the parameters of ICS as defined in the NIMS. The Consequence Management Home Team (CMHT) will be activated immediately during normal business hours (Pacific Time Zone) and will be activated within 2 hours otherwise. The FRMAC deploys as a phased response. The Consequence Management Response Team (CMRT I) is "prepared for deployment" within 4 hours after activation and can reach any location in the United States normally within 6-10 hours, CMRT II is "prepared for deployment" within 12 hours of activation, and additional personnel and equipment for CMRT Augmentation is underway within 24 hours of activation. If required, the full interagency FRMAC can be operational in 24-36 hours after the lead federal agency or state has asked for help. A FRMAC's size is tailored to the event and may consist of as few as 60 or as many as 500 people, depending upon the needs of the emergency situation.

The CMHT supports first responders in collecting and interpreting data while CMRT I is en route to the event scene, provides early data assessment resources before the FRMAC is set up, (i.e., a virtual FRMAC) functions as a conduit for NARAC predictive maps, interpreting early radiological measurements, etc., and provides updates and answers to early responder concerns. It functions as a virtual extension of the FRMAC when a full FRMAC has not yet been, or will not be, deployed. The same products and assistance are available in CMHT as with a full FRMAC with the exception of field

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monitoring capabilities. Advice can be provided regarding worker turn-back levels, monitoring routes, evacuation zones, and so forth. The CMHT maintains reach-back capabilities to agencies with expertise to cover a variety of disciplines to assist with local concerns or needs.

The CMRT I response is a small, rapidly-deploying team focused on obtaining and assessing gross field monitoring measurements. It is capable of sustaining 24-hour operations for up to 72 hours. The CMRT I team is required to deploy with a 4-hours "wheels up" time following notification. The team includes 31 on-call personnel and 2,500 lbs (200 cubic feet) of equipment. This phase will serve as a quick response element to augment the Radiological Assistance Program (RAP). It also provides the core Command and Control for FRMAC contributions from other federal agencies. The team will incorporate all the disciplines necessary to support operations but only on a limited scale. These disciplines include radiation monitoring, sampling, analysis, assessment, health and safety, and support and logistics functions. It is designed for quick response and rapid radiological data collection and assessment in order to provide early health effects advice and timely characterization of the radiological situations to the officials responsible for making and implementing protective actions for the public. Each specific emergency may require a tailored response.

During CMRT II, protective actions focus on accurately defining areas where long-term relocation of the population may be warranted. CMRT II will focus on extensive field monitoring (collection, assessment, compilation, and archiving of data) and initial sample collection and sample processing for characterization and eventual handoff to the Environmental Protection Agency (EPA).

3.4.5.4 Aerial Monitoring Systems

The Aerial Measurement Systems provide fixed wings and helicopters equipped with radiological monitoring instrumentation to locate and track airborne and ground deposited radioactive materials. Information collected is provided to the Data and Assessment Group at FRMAC for organization, evaluation, interpretation and distribution to appropriate emergency management centers or agencies.

3.4.6 National Atmospheric Release Advisory Center

NARAC provides predictive capability based on the Weather Information Display System (WINDS), information on local conditions, and monitoring data generated by FRMAC agencies to predict plume concentrations, ground deposition and potential doses to individual resulting from releases of radioactive materials. This group also contributes to FRMAC monitoring plans to increase efficiency of data collection. Information obtained by the Group is provided to the Data and Assessment Group at FRMAC. The EOC CAT will interface directly with NARAC for plume modeling and other consequence assessment support.

4.0 OFFSITE RESPONSE INTERFACES

4.1 Overview

The purpose of offsite response interfaces is to coordinate emergency management activities to protect the public, responders, workers, and to minimize impact to property and the environment. The offsite interface program identifies mutual aid requirements, establishes mutual aid agreements with jurisdictions possessing necessary resources, and establishes an ongoing dialogue with offsite emergency management agencies and other key stakeholders.

These interfaces support the development of integrated plans and procedures and the planning and conduct of mutual aid-required training, drills, and exercises. The offsite interface effort includes the potential for offsite impacts from site emergencies and the level of assistance that may be required from offsite emergency organizations to support a response.

Appropriate mutual aid agreements between CBFO and local, state, and federal agencies are established to document an assistance commitment and to define the points of contact, mutual expectations, and working relationships.

Interface, collaboration, and information sharing with law enforcement are critical elements of prevention, preparedness, and response. Security is integrated into EOC staffing to interface with local, state, and federal law enforcement agencies. Security information is disseminated based on classification level and the need to know.

4.2 Federal Agencies

4.2.1 Federal Emergency Management Agency

If federal resources are needed that are not covered by existing agreements, then requests can be made through DOE Watch Office and coordinated with the Federal Emergency Management Agency (FEMA) or other federal agency resources.

4.2.2 Regional Watch Center

The FEMA Region 6 Regional Watch Center (RWC) provides 24/7 operations that maintain national situational awareness of potential or developing events that require a coordinated federal response up to and including Incidents of National Significance that occur in its area of responsibility. The RWC provides FEMA Region 6 leadership with critical operational information collection, information analysis, and resource coordination support on a daily basis.

The Region 6 RWC consists of Watch Officers stationed in Denton, TX, to provide continuous coverage for potentially emerging situations. The EOC Offsite Liaison may interface with the RWC for situational awareness and/or provide notification of incident status.

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4.2.3 Regional Response Coordination Center

The FEMA Region 6 Regional Response Coordination Center (RRCC) serves as the agency's immediate all-hazards emergency coordination center in support of regional/national level response and recovery. The RRCC will take responsibility for specific events upon notification from the RWC and Region 6 leadership.

The RRCC is a multi-agency coordination site that integrates operations of FEMA program staff, federal interagency representatives, a U.S. Department of Defense Coordination Element, private sector liaisons, planning, informational analysis, resource management and logistics, and geographical information systems support into a unified team that activates as needed.

4.2.4 Bureau of Land Management

WIPP has a mutual aid agreement with the BLM to provide for timely assistance when requested. The BLM is primarily responsible for wildland firefighting in the area. The WIPP FSM or EOC and the IC determine resource needs and make the request. BLM responders become part of the Unified Command Structure.

4.2.5 Federal Bureau of Investigation

The FBI Albuquerque and/or Roswell Field Office is notified for significant security/law enforcement incidents (terrorism, etc.) at the WIPP facility and responds as applicable. FBI Special Agents may be deployed to support response activities, investigations, and intelligence sharing. The FBI may deploy liaisons to the EOC and ICP. The FBI may assume IC responsibilities during security or law enforcement emergencies or integrate into the existing Unified Command Structure. The EOC is the primary interface between WIPP and the FBI.

4.3 State Government

Initial notifications and interface with the State occurs by the FSM/CMR through the District 3 New Mexico Department of Public Safety (NMDPS) 24-hour Dispatch Center. Subsequent notifications are sent to the NMDHSEM State Duty Officer and EOC, if activated.

The EOC will coordinate through the NMDHSEM for mutual aid requests. NMDHSEM leads the State response to emergencies and disasters and is tasked to lead the conduct of state-level emergency operations. When necessary, the State also assists federal facilities such as WIPP. Direction, control, and coordination are the core functions of the New Mexico Emergency Operations System.

During an emergency activation, the NMDHSEM Response and Recovery Bureau will take steps to analyze the emergency situation and decide how to respond quickly, appropriately, and effectively. The Response and Recovery Bureau will provide direction and coordination for the efforts of involved state agencies, departments and resources. Emergency Management Team members within the Response and

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Recovery Bureau are tasked to supervise and coordinate the response with the efforts of local, federal, and neighboring state entities and voluntary disaster relief organizations and the private sector to make effective and efficient use of resources.

The State of New Mexico Radiological Health will be involved with any offsite radiological monitoring as coordinated by local responders.

The New Mexico Task Force-1 is an urban search and rescue response team designed to provide a coordinated response to disasters in urban environments. Emphasizing the location and extrication of victims trapped in collapsed structures, confined spaces, or trenches in largely populated areas, the task force is capable of responding to state and national disasters including earthquakes, hurricanes, widespread tornadoes, and man-made technological and terrorist events. This team could be requested during a major disaster at WIPP involving major structural collapses.

The New Mexico All Source Intelligence Center (NMASIC) is designed to be a cross-jurisdictional partnership between local, state, and federal agencies - including private sector participation when appropriate. This center provides for one central point in New Mexico for the collection, analysis, and timely dissemination of terrorism-related information. Information is distributed from the NMASIC in the form of daily reports, special reports, and bulletins to numerous agencies representing a multitude of disciplines. The NMASIC will emphasize detection, prevention, and information driven response to protect the citizens and critical infrastructure of New Mexico. This centralized counter-terrorism effort enhances interagency cooperation and expedites information flow. During security/law enforcement incidents at WIPP, communication and coordination of information will occur between the EOC and NMASIC. Routine and imminent threat information will be shared between WIPP emergency management and security officials and the NMASIC to enhance prevention capabilities.

4.4 Local Government

Primary interface with local government agencies is the EOC. Local governments are responsible for the direction and control of the local response associated with emergencies in their respective jurisdictions. Local governments maintain communications with the NMDHSEM or New Mexico State EOC, if activated, to ensure that the State is fully aware of their actions. Local governments have the ultimate responsibility for protecting their citizens and may implement appropriate PARs provided from WIPP.

Counties that could be affected by a WIPP incident include Eddy County and Lea County. Initial notifications and communication with the local counties occurs via the CMR through the respective county emergency dispatch centers, who then notify county emergency management officials. DOE/CBFO has agreements with both counties so that WIPP may request emergency assistance. The county representative may confirm the request or request emergency assistance by calling the CMR.

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The Eddy County Sheriff's Office provides law enforcement assistance for WIPP. Emergency calls to 911 from cell phones on or near the WIPP are routed through local emergency dispatch centers and are coordinated with the CMR at WIPP for onsite emergencies. Local dispatch centers may request mutual aid for incidents on the highway, near the WIPP, through the CMR.

The primary operating facility for DOE/CBFO federal employees is the SWB in Carlsbad, New Mexico. The Carlsbad Fire Department and Carlsbad Police Department are the primary local responders to events at outlying locations.

NWP, on behalf of the DOE/CBFO, collaborates with Eddy County Emergency Management officials, and other community emergency management officials to prevent, prepare for, respond to, and recover from any incident affecting SWB or other outlying facilities.

During local or regional incidents, affected counties may activate their EOCs to coordinate activities and resources and aid jurisdictions that require assistance. Additional interfaces or liaisons may be established with the county EOCs to coordinate response activities and share incident information. Community incidents (e.g., rail car derailment, transportation accident, terrorism) may affect the safety of workers at the WIPP, SWB, or other outlying locations. Coordination and collaboration with local officials is critical for PA decision-making and implementation.

The establishment of an effective interface and coordination among EOCs is a critical element of a regional incident management strategy that provides critical support, resources, and information to those agencies and organizations impacted.

4.4.1 Local Emergency Planning Committees

The Local Emergency Planning Committees (LEPCs) for Eddy and Lea Counties coordinate planning and preparedness activities as required by the U.S. Environmental Protection Agency (EPA), *Superfund Amendments and Reauthorization Act*, Title III, *Emergency Preparedness and Community Right-to-Know Act*, (SARA Title III) and in support of the NMDHSEM.

WIPP is represented by a member of Emergency Management on the Eddy County LEPC, which meets monthly. The purpose of the LEPC is to participate in carrying out Eddy County LEPC responsibilities pursuant to Public Law 99-499, SARA Title III, and related regulations.

4.5 Mutual Aid Agreements

Mutual aid agreements between CBFO and local offsite organizations or jurisdictions have been established to provide support to WIPP during emergency incidents. Mutual aid agreements are developed, maintained, and reviewed by NWP Emergency Management with final review and approval by the CBFO according to procedures.

Existing WIPP mutual aid agreements are listed in Table 4.1.

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Table 4.1 - WIPP Mutual Aid Agreements

Agreement Agency	Agency Capabilities Provided
Intrepid Potash, Inc. Mosaic Potash	<ul style="list-style-type: none"> • MRTs in the event of a mine disaster • This provision ensures that NWP will have two MRTs available at all times when miners are underground, as required by DOE O 5480.4, <i>Environmental Protection, Safety, and Health Protection Standards</i>, which requires compliance with 30 CFR §49.2(a), <i>Availability of Mine Rescue Teams</i>.
Carlsbad Medical Center (CMC)	<ul style="list-style-type: none"> • Emergency Radiological Treatment Center provides for the treatment of persons with radiological contamination who have incurred injuries beyond the treatment capabilities at the WIPP site. • WIPP provides transport of the patient(s) to the treatment center for decontamination and medical treatment.
Lea Regional Medical Center (LRMC)	<ul style="list-style-type: none"> • Emergency Radiological Treatment Center provides for the treatment of persons with radiological contamination who have incurred injuries beyond the treatment capabilities at WIPP. • WIPP provides transport of the patients to the treatment center for decontamination and medical treatment.
Eddy County Commission	<ul style="list-style-type: none"> • Actual assistance of the parties in furnishing firefighting and fire protection for the Eddy County Fire District and the WIPP site. • Upon request to a representative of the Eddy County Fire Department by the WIPP, firefighting equipment and personnel of an Eddy County Fire Department will be dispatched to any specified location within WIPP. • WIPP will dispatch emergency equipment to an offsite incident when requested by Eddy County authorities.
City of Hobbs, New Mexico	<ul style="list-style-type: none"> • Mutual ambulance, medical, fire, rescue, and hazardous material response services. • Use of WIPP radio frequencies by the city during emergencies. • Mutual security and law enforcement services, within the appropriate jurisdiction limits of each party.
City of Carlsbad, New Mexico	<ul style="list-style-type: none"> • Coordination of emergency services activities to be engaged in by the city and WIPP during times of declared emergency. • Services covered by this agreement include ambulance and medical services, fire, rescue, and hazardous material response.
U.S. Department of the Interior, represented by the BLM, Roswell Office	<ul style="list-style-type: none"> • Fire management program that will ensure a timely, well-coordinated, and cost-effective response to suppress wildfires within the LWA. • Responsibilities concerning cultural resources, grazing, wildlife, mining, gas and oil production, realty/lands/rights-of-way, and reclamation.
NMDPS	<ul style="list-style-type: none"> • Mutual emergency management support. • Access to the State EOC, warning networks. • Access control on state highways.
NMDHSEM	<ul style="list-style-type: none"> • Mutual emergency management support. • Access to state law enforcement, public works, transportation assets.
Sheriff of Eddy County	<ul style="list-style-type: none"> • Law enforcement support.
U.S. Department of Defense	<ul style="list-style-type: none"> • Temporary parking (safe haven) of TRU waste shipments at military installations.

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The organizations that have committed to potentially respond to the WIPP site are invited to attend an annual all hazards and offsite interface briefing. This briefing will encompass the following topics:

- WIPP layout and activities
- WIPP hazards
- Personnel dosimetry
- WIPP Emergency Management Program
- Offsite interface for emergency response

4.6 Offsite Medical Facilities

Contaminated patients who have incurred injury or illness beyond the treatment capabilities at WIPP will be transported to the CMC or the LRMC. Prior to transport, patients will be treated and decontaminated to the extent allowed by the nature of their injuries or illness. Medical treatment of the injured or ill personnel will not be hampered by radiological controls.

During transport, precautions will be taken to control the spread of contamination from the patient while still allowing for stabilization efforts. Radiological Control personnel will be dispatched to provide radiological support during the transportation and treatment of the contaminated personnel and during the post-incident recovery of the facility and transport vehicle(s) or may be sent to the hospital directly.

4.6.1 Offsite Response Requests

When the CMR receives a request for offsite mutual aid assistance, the CMRO will obtain approval from the FSM and take actions to dispatch the requested WIPP responders. The FSM notifies the DOE Facility Representative and provides general information regarding the request and response. Subsequent notifications may also be made to Responsible Managers to ensure they are aware of the response offsite.

The north and south access roads are considered the WIPP emergency response corridor and will be treated as an automatic response without a request for mutual aid assistance from another agency. WIPP Fire Department and Protective Force will be immediately dispatched consistently for all incidents on the north and south access roads. The only exception is when WIPP emergency responders are fully committed to an onsite incident and resource limitations would not allow for an additional safe response offsite.

In the event that offsite assistance is required at WIPP, the FSM will identify the agencies to be contacted, as listed below in Table 4.2.

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Table 4.2 - Offsite Assistance Agency Requests

Offsite Assistance	Offsite Agencies Contacted
Mine Rescue	<ul style="list-style-type: none"> • Mosaic • Intrepid
Medical Response	<ul style="list-style-type: none"> • Carlsbad Fire Department • Hobbs Fire Department
Hospital Services	<ul style="list-style-type: none"> • CMC - Carlsbad • Lea Regional Medical Center – Hobbs
Fire Fighting Response	<ul style="list-style-type: none"> • Carlsbad Fire Department • Department of the Interior - BLM (wildfires) • Hobbs Fire Department • Loving Fire Department
Law Enforcement Response	<ul style="list-style-type: none"> • Carlsbad Police Department • Eddy County Sheriff's Office • FBI • Hobbs Police Department • Lea County Sheriff's Office • New Mexico State Police
Traffic and Access Control Assistance	<ul style="list-style-type: none"> • Eddy County Sherriff's Office • Lea County Sherriff's Office • New Mexico State Police

5.0 Emergency Facilities and Equipment**5.1 Emergency Facilities**

The CBFO Emergency Management Program Manager has the overall responsibility to ensure the availability of facilities and resources for emergency response. The EM&S Manager manages emergency facilities, equipment/systems, and resources.

WIPP maintains a number of emergency facilities as described below. The emergency facilities are inspected and maintained in accordance with applicable procedures.

5.1.1 Central Monitoring Room

The primary CMR is located in the Support Building (451) and is the coordination point for site activities and communications between the surface and underground facilities. The CMR contains instrumentation and equipment for reading underground and surface operations parameters, including radiation monitors and alarms. The CMR also has the capability of controlling some plant functions. Notifications to personnel and onsite or offsite responders are also made from the CMR.

5.1.2 Alternate Central Monitoring Room

The alternate CMR is a dedicated area within the SOC in the Guard and Security Building (458). Capabilities at the alternate location are currently limited and include access to landline telephones, mine pager phones, and Central Monitoring System access (once logged in).

5.1.3 Security Operations Center

The SOC is located in the Guard and Security Building (458) at the WIPP and is a dedicated facility staffed 24/7 to monitor, process, validate, and respond to all security alarms and incidents occurring at the WIPP.

5.1.4 Fire Station and Vehicle Bays

The FD vehicles and equipment are deployed from the FD vehicle bays located in the Safety and Emergency Services Building (452). Emergency medical facilities are located in Room 120 the same building, adjacent to the bays, and are used to care for injured or ill personnel.

5.1.5 Emergency Operations Centers

The EOC-SWB is a dedicated, state-of-the-art facility located on the first floor of the SWB at 4021 National Parks Highway in Carlsbad, New Mexico.

The EOC-WIPP is a dedicated facility located Room 108 on the first floor of the Safety and Emergency Services Building (452). This location may also be used as a fixed ICP, area command, and other contingency needs.

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The EOC locations may be secured at the direction of the CM, allowing access for approved personnel only. During normal operations, the EOC locations may be used as a location for ERO training and emergency management activities.

In addition to serving the needs of WIPP, the EOC locations may also be used to provide assistance to the City of Carlsbad, Eddy County, Lea County and the State of New Mexico if requested as part of the mutual aid agreements with these entities.

5.1.6 Joint Information Center

The JIC is a non-dedicated facility located in Rooms T111 and T112 of the SWB in Carlsbad, New Mexico. Access to the rooms is controlled when the JIC is activated. During normal operations, the rooms function as conference rooms.

5.1.7 Decontamination Facilities

A decontamination trailer is available at WIPP with hot and cold running water. It has decontamination equipment available that includes towels, soap, shampoo, modesty garments, gloves, bags, etc.

5.1.8 Medical Facilities

Medical facilities staffed by Site Health Services are located in Room 121 the Safety and Emergency Services Building (452). There is a dedicated facility with day-shift staff trained at the advanced life support level that responds to occupational-related injuries or illness.

5.1.9 Response Facility Locations

Figure 5.1 shows the locations of the major Emergency Response Facilities at WIPP.

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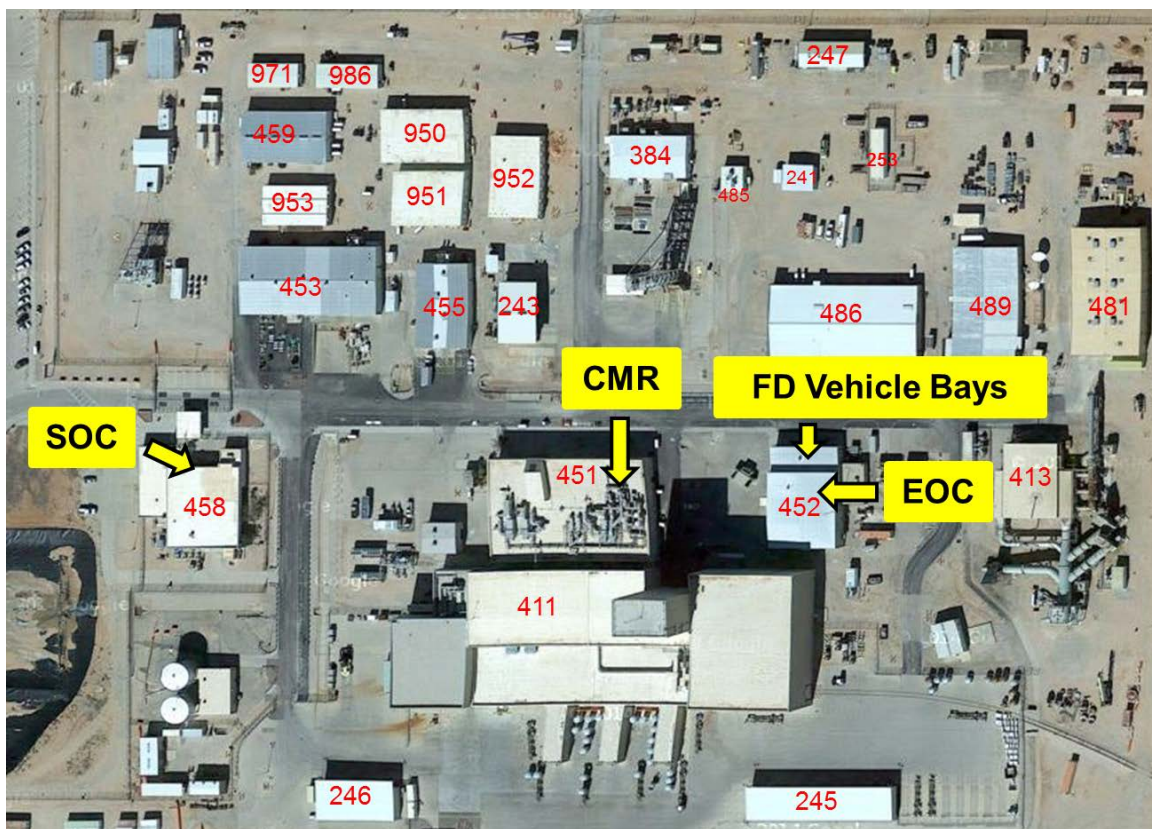


Figure 5.1 – WIPP Emergency Response Facilities

Figure 5.2 shows the locations of the Emergency Response Facilities at SWB.

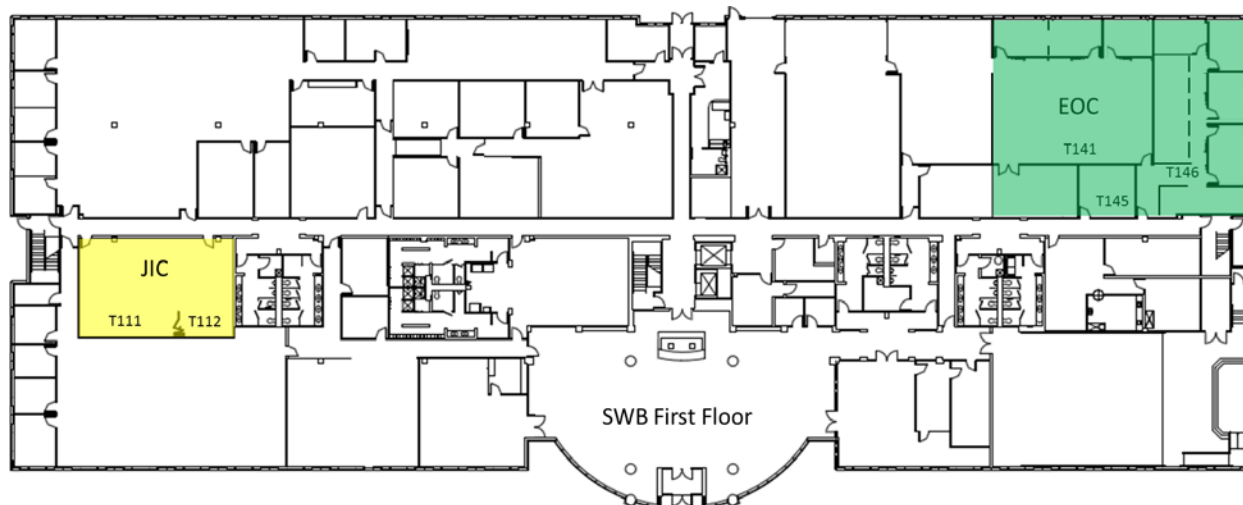


Figure 5.2 – SWB Emergency Response Facilities

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5.2 Emergency Equipment

WIPP maintains various types of emergency equipment, as described below. The emergency equipment is inspected and maintained by the FD, RCTs, ERTs, MRT members and emergency management staff in accordance with applicable procedures. A detailed list of WIPP emergency equipment is contained in the WIPP RCRA Contingency Plan.

5.2.1 Communications Systems and Equipment

Multiple independent communication/notification systems and equipment are used at the WIPP site to notify onsite populations and offsite authorities. Many of the communication systems are used daily for routine activities. Other systems are used only during emergencies and require formal testing on specified frequencies to ensure operability. Emergency communications equipment is on various frequencies depending on the equipment and its purpose.

The plant monitoring and communications systems include onsite and plant-to-offsite coverage and are designed to provide immediate instructions to ensure personnel safety, facility safety and security, and efficient operations during normal and emergency conditions. WIPP communications systems and equipment for use in emergency situations are detailed in the WIPP Emergency Management Communications Plan. Plant monitoring and communications systems include the following:

- **Landline phones** – The phone system includes a private automatic branch exchange network providing conventional onsite and offsite telephone services with touch tone capability. Major uses of this system include the reporting of occurrences and communications between the response centers (i.e., CMR, SOC, both EOC locations, and JIC). The telephones are also used by the response venues to communicate with other personnel at the WIPP site or SWB, as well as external agencies.
- **Mine pager phones** – The mine pager phone system is an independent, hard-wired, battery-powered system for communications throughout the underground areas and between the surface and underground. Mine pager phones are located throughout the underground and in surface structures to support daily operations and emergencies. Surface locations include, but are not limited to, the hoists, the CMR, the FSM desk in the Support Building, the EOC, and the mine rescue room of the Safety Building.
- **Public Address System** – The WIPP PAS and alarm systems provide for the initiation of surface and underground evacuation alarms and PAS announcements from the CMR and local stations. The plant PAS and alarm systems include the site wide PAS, intercom installations, and the site notification system for remote locations. These alarms are supplied with backup power if the offsite power supply fails. The PAS master control console is located in the CMR, with limited paging stations located throughout the facility. The PAS

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paging station channels are described in the Conduct of Operations Communications Program. An Emergency Announcement System is also available at SWB.

- **Underground evacuation signal system** – The underground evacuation signal is separate from the PAS and includes electric horns and strobe lights. An underground evacuation signal is initiated automatically by an underground fire alarm signal via the Central Monitoring System or manually by the CMRO or from pushbuttons in the salt handling shaft hoist house and waste shaft hoist control room. The underground evacuation signal may be reset from any of the three manual push button stations.
- **Radios** – Radio systems (UHF/VHF) include two-way and paging onsite and offsite radio systems. These systems include base stations in the CMR, SOC, EOC, and mobile and portable units. The radio channels are described in the Conduct of Operations Communications Program.
- **Cellular Telephones** – Business and/or personal cellular telephones may be used by the ERO as an alternate method of communication between response venues and with onsite and offsite personnel. Cellular service is intermittent across the WIPP site. There is currently no cellular service available in the EOC-WIPP; personnel would have to step outside the building to use cellular telephones (if safe to do so).
- **Satellite Telephones** – Satellite telephones are available for use by the ERO as an alternate method of communication with offsite authorities in the event that the landline telephones are unavailable.
- **Pagers** – A paging system is available as one of several methods for notification if the ERO participant cannot be reached in their normal work/home location. The pagers, activated by the CMR can be activated individually or as a group. They are tested weekly, with random tests conducted during all hours.
- **E-mail** – Business e-mail accounts are used to provide information to personnel and offsite agencies as well as between response venues.
- **Facsimile Machines** – Fax machines are installed in the CMR, both EOC locations, SOC, and JIC. They are used to provide hardcopy information during the emergency to internal responders as well as offsite agencies. These facsimile machines are tested monthly to ensure they are functional.
- **Communicator! NXT** – This communication system attempts to contact personnel in a predefined group and provide them with specific instructions (e.g., report to the EOC or JIC). The Communicator! NXT utilizes a variety of data feeds to notify selected personnel through pager, work/home/cellular telephones, or any combination of these methods. Personnel receiving the message are requested to call the system for further instructions. Tests are conducted weekly.
- **WebEOC** - WebEOC is a web-based emergency management system that provides access to real-time emergency event information that can be simultaneously shared among the ERO during the response and recovery

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phases of an emergency. Additional communications features include real-time chat and messaging. The system has connected workstations in the EOC, CMR, JIC, and SOC. WebEOC is used to process unclassified data only. WebEOC is approved to protect information up to and including Official Use Only. Select WebEOC boards can be shared with DOE HQ and other external agencies through WebFusion, as needed and approved. WIPP Emergency Management has a user name and password to access Eddy County WebEOC during incidents of interest.

- **Social Media** – Social media (e.g., Twitter) is used primarily by the JIC to disseminate incident and response information to personnel, the public, and the media.

5.2.2 Central Monitoring System

The Central Monitoring System, located in the CMR, collects and monitors real-time site data, automatically and manually, during normal and emergency conditions. The underground and surface data monitored by the Central Monitoring System are gathered, processed, stored, logged, and displayed. The data are collected continuously from approximately 1,500 remote sensors.

5.2.3 Decontamination Equipment

In addition to equipment in the decontamination trailer, eight basic decontamination kits contained in bright orange bags are available in the following locations:

- Guard and Security Building (458) in the lobby
- Training Building (489) in the lobby
- Engineering Building (486) along the east wall
- Safety and Emergency Services Building (452) at the entrance to the EOC
- Trailer 950 in the northeast cube
- Trailer 952 in the main hallway
- Support Building (451) in the Lamp Room
- Waste Handling Building (411) in the Site Generated Waste Room

These decontamination kits contain the following personal protective equipment (PPE):

- Respirators with t-bars and cartridges
- Anti-contamination suits and hoods
- Shoe covers, boot covers, and boot liners
- Gloves and glove liners

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The kits also contain the following supplies to conduct minor decontamination and survey in the field:

- Masking tape and vinyl tape
- Large area wipes
- ICAM and Bladewerx filters
- Trash bags and zip-lock bags
- Smears

5.2.4 Onsite Alarms

There is an alarm system employed at WIPP to notify personnel of situations that require their action to protect themselves. In some cases an announcement over the PAS will follow the alarm and provide specific actions or information regarding actions to be taken by the personnel in the facility.

- **Yelp** - A tone used to notify personnel to evacuate. Underground, strobe lights will flash in addition to the tone (this also serves as the fire alarm underground).
- **Gong** - A tone used to gain the attention of personnel to provide direction necessary for personnel protection. This is used at the discretion of the FSM.
- **Fire Alarm** - A ringing bell and flashing lights are provided in surface structures if there is a fire in a surface building. Underground, if a manual fire pull station is activated, then a local area ringing bell is sounded and CMR receives an automatic notification.

5.2.5 Mine Rescue Team Equipment

All required mine rescue and safety equipment is stored and maintained in a state of readiness at the mine rescue station. A list of MRT equipment is available in the RCRA permit.

5.2.6 Transportation Equipment

Several types of transportation equipment are available for emergency use and to aid in the swift and safe evacuation of personnel, including buses, pickup trucks, sport utility vehicles, vans, sedans, and personnel vehicles.

5.2.7 Fire Department Equipment

The WIPP site includes two fully-equipped engines, a rescue unit, an ambulance with capabilities to respond to onsite and offsite emergencies on the surface. The surface emergency equipment is stationed in the FD Vehicle Bays located in the Safety and Emergency Services Building (452).

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Underground Fire Department equipment includes an ambulance, a fire suppression vehicle, and a rescue unit.

5.2.8 Emergency Power Equipment

WIPP has two diesel back-up generators onsite for surface power. They are started when needed according to procedures. SWB is limited to primary power capabilities.

6.0 EMERGENCY CATEGORIZATION AND CLASSIFICATION**6.1 Operational Emergency Definitions**

DOE O 151.1C defines events categorized as OEs as major unplanned or abnormal events or conditions that: involve or affect DOE/EM facilities and activities by causing or having the potential to cause serious health and safety or environmental impacts; require resources from outside the immediate/affected area or local event scene to supplement the initial response; and require time-urgent notifications to initiate response activities at locations beyond the event scene.

Incidents that can be controlled by employees or maintenance personnel in the immediate/affected facility or area are not OEs. Incidents that do not pose a significant hazard to safety, health, and/or the environment and that do not require a time-urgent response are not OEs.

OEs may or may not require further classification based on the type and severity of the incident, as discussed below.

6.1.1 Operational Emergencies Requiring Classification

OEs require classification as an Alert, Site Area Emergency (SAE), or General Emergency (GE), in order of increasing severity, when events occur that represent a specific threat to workers and the public due to the release or potential release of significant quantities of HAZMAT from DOE/CBFO facilities/activities/operations, as described below. The classification aids in the rapid communication of critical information and the initiation of appropriate time-urgent emergency response actions.

6.1.1.1 Alert

An Alert must be declared when events are predicted, are in progress, or have occurred that result in one or more of the following:

- An actual or potential substantial degradation in the level of control over HAZMAT.
 - The radiation dose from any release to the environment of radioactive material or a concentration in air of other HAZMAT is expected to exceed the applicable PAC at or beyond 30 meters from the point of release to the environment.
 - It is not expected that the applicable PAC will be exceeded at or beyond the facility boundary (100 meters).
- An actual or potential substantial degradation in the level of safety or security of a facility or process that could, with further degradation, produce a SAE or GE.

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6.1.1.2 Site Area Emergency

A SAE must be declared when events are predicted, in progress, or have occurred that result in one or more of the following situations:

- An actual or potential major failure of functions necessary for the protection of workers or the public.
 - The radiation dose from any release of radioactive material or concentration in air from any release of other HAZMAT is expected to exceed the applicable PAC at or beyond the facility boundary (100 meters).
 - The PAC is not expected to be exceeded at or beyond the site boundary (300 meters).
- Actual or potential major degradation in the level of safety or security of a facility or process that could, with further degradation, produce a GE.

6.1.1.3 General Emergency

A GE must be declared when events are predicted, in progress, or have occurred that result in one or more of the following situations:

- Actual or imminent catastrophic reduction of facility safety or security systems with potential for the release of large quantities of HAZMAT to the environment.
 - The radiation dose from any release of radioactive material or a concentration in air from any release of other HAZMAT is expected to exceed the applicable PAC at or beyond the site boundary (300 meters).

Site/facility-specific Emergency Action Levels (EALs) are developed for the spectrum of potential OEs identified by the EPA and include PA/PA distances corresponding to the EAL.

6.2 Operational Emergencies Not Requiring Classification

According to DOE O 151.1C, OEs must be declared when events occur that represent a significant degradation in the level of safety at a site/facility and that require time-urgent response efforts from outside the site/facility. These events do not require classification.

Types of potential OENRC incidents at WIPP include the following:

- Health and Safety - Serious health and safety effects to workers or members of the public
- Environment - Serious detrimental effects on the environment

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- Security and Safeguards - Degradation of security or safeguards conditions with actual or potential direct harm to people or the environment
- Transportation Activities - Actual or potential release of HAZMAT from an WIPP shipment
- Discretionary - Conditions or events not addressed by any other EALs

6.3 Emergency Action Levels

OEs involving the release of HAZMAT on or from DOE sites or facilities are classified according to the severity to ensure rapid response communications and notifications commensurate to the degree of hazard presented by the event. The primary focus of the classification process is the initiation of immediate actions to protect the personnel onsite and offsite. A graded approach is used based on the severity of the event or conditions.

EALs are the specific, pre-determined, observable criteria used by the decision-making authority to promptly detect, recognize, and determine the categorization/classification of emergencies and associated PAs. EALs are developed for a wide spectrum of potential OEs identified in the EPHA and associated procedure.

The spectrum of accidents analyzed in the DSA that were determined to be bounding and applicable for the WIPP site are used for emergency planning purposes. The EPHA identifies and describes the postulated events and conditions in accordance with DOE Order 151.1C. These events and conditions are the basis for EALs.

6.3.1 Downgrading

Although DOE O 151.1C allows downgrading of a classifiable OE under certain circumstances (i.e., obvious error or incorrect information) to one of less level severity, **WIPP does not authorize downgrading.** For an Alert or SAE, the classification may remain the same, may be upgraded, or the decision may be made to terminate the emergency. For a GE, the decision may be made to continue at a GE level or to terminate the emergency altogether.

7.0 NOTIFICATIONS AND COMMUNICATIONS

Notifications and communications are vital to information sharing during a response. Providing accurate, timely information helps to protect people both onsite and offsite, including responders.

Participant organizations periodically test and assess the effectiveness of established emergency notification, reporting, and communication procedures, systems, and training through the performance of relevant drills and exercises.

7.1 Emergency Notifications

The FSM is responsible for initial notifications regarding an OE. Notifications are made offsite to Eddy County, Lea County, the State of New Mexico, and the DOE HQ Watch Office using the Emergency Notification Form followed by a phone call confirming receipt according to procedures. The initial notification must be made within 15 minutes of categorization and classification for an OERC or within 30 minutes of categorization for an OENRC as required by DOE O 151.1C.

A second Emergency Notification Form will be sent to the same offsite agencies approximately one hour after the first form was sent, and at timely intervals thereafter or anytime important information (e.g., upgraded classification, additional related incident) changes. The FSM will send all additional notifications unless the EOC is operational and has assumed responsibility for the notifications. A final termination Emergency Notification form will be sent after the emergency response has been terminated.

7.1.1 Other Offsite Notifications

Dependent upon the type of incident, the FSM may also be required to make additional notifications to local ranchers and oilfield companies and the State Mine Accident Emergency Operations Center as well as required RCRA notifications, according to procedures.

DOE Order 232.2 addresses reporting and notification requirements for events, occurrences, and/or emergencies. These notifications are made according to procedures.

7.1.2 Onsite Notifications

All onsite emergencies will be reported immediately to the CMRO at Extension 8111 or by radio. The CMRO determines the need to dispatch emergency personnel to assist with the incident and then notifies the FSM. Radiological Control or IH personnel and any additional support will also be notified by the CMRO.

Emergencies at all outlying locations in Carlsbad will be reported immediately to 911 for response by City of Carlsbad agencies.

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In the event of a mine emergency requiring the WIPP MRT to be activated, the FSM will notify the MRT Captain(s) and/or notify the MRTs via Communicator! NXT or the PAS. If the WIPP MRTs cannot be activated, the FSM will approve the contact of local potash mines to activate their MRTs through the applicable mutual aid agreements.

For all OEs and other significant incidents as needed, the FSM will direct the CMRO to activate the EOC.

7.2 Communications

The WIPP site is equipped for both onsite and offsite communications. The WIPP communication systems include a telephone system, a mine/surface phone system, radio systems, site automated notification system, pagers, cell phones, satellite phones. Detailed information on the WIPP communication equipment and systems is listed in Section 5.2.1.

Communication requirements fall into three general categories:

- Warning and emergency instructions to onsite workers
- Initial activation of the ERO
- Operational communications among emergency facilities and field response elements

Radio frequencies for interface with local law enforcement, ambulance, and fire departments are available on the WIPP emergency vehicles at the WIPP site. Once dispatched, emergency response personnel with radios use predetermined WIPP radio frequencies and communicate with CMR for incident updating and resource requests.

Plant communications are further described in the Conduct of Operations Communications Program. The communication systems are used to monitor emergency situations, relay information to the CMR, the FSM, Security, and facilities in Carlsbad and Hobbs.

8.0 CONSEQUENCE ASSESSMENT

Consequence assessment is performed in three phases:

1. Incident recognition, categorization/classification, and initial PAs
2. Timely Initial Assessment (TIA)
3. Continuous Ongoing Assessment (COA)

This section of the EMP primarily focuses on the second and third phases that follow the conservative consequence estimates implicit in the initial assessments. The TIA provides the process for supporting and confirming the critical initial pre-planned decisions, using available real-time data. The COA is the subsequent cyclic activity that occurs throughout the emergency and refines the initial assessments as more confirmatory information and physical and technical resources become available.

The systems, modeling tools/codes, and equipment available for assessing the actual or potential emergency conditions, and the effects of an OE at WIPP are described below.

8.1 Consequence Determination Process

The first phase of the consequence assessment process for WIPP occurs during the technical planning process and is based primarily on projections from both qualitative and quantitative hazard assessments. The fundamental technical planning documents that are used to determine event recognition (e.g., indicators), categorization/classification, and initial PAs are the EPHS, EPHA, and EALs. The consequence assessment activities that occur during the technical planning process are used to help CMROs, FSMs, and/or any other ERO authority make time-urgent decisions. These initial assessments are based primarily on computer modeling projections. Extended and post-accident assessments need to be based largely on direct readings from observations or field data.

With the initial phase of consequence assessment completed (i.e., the initial event categorization/classification and initial PA decisions made) and pre-planned response actions have begun, the next time-urgent activity is to quickly confirm that the initial decisions were accurate, appropriate, and conservative to protect workers and the public. Like the initial decision, this confirmation is high priority, and time-urgent; this represents the second phase of consequence assessment, the TIA. The TIA begins with activation of the CAT. After the CAT's initial assessment has been communicated to all relevant stakeholders, the TIA is complete as determined by the EOC command staff.

The purpose of the COA is to project updated consequences as the emergency progresses and the event characterization improves in both quantity and quality of information. The COA phase begins when TIA is complete and builds upon improved information and available technical and human resources. Increasing levels of sophistication in the analysis tools, input accuracy (e.g., source term, meteorology), technical expertise, and eventually feedback from field monitoring efforts, all lead to

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refined projections, which provide greater certainty and/or confirm the EAL-based assessments and TIA results. COAs are made when there are actual and projected changes in facility status, release conditions, or meteorology, or when there is data from field monitoring activities.

The TIA and COA use all currently available information including incorporation of field monitoring data, more sophisticated models, and expertise of SMEs to improve accuracy, reduce uncertainty, and improve understanding of the potential consequences. The TIA and COA are accomplished by referring to the EPHA process as the technical basis for determination of potential consequences, changes to categorization and/or classification, and PA/PAR distances. The TIA and COA use computer-based modeling programs to estimate the potential or actual onsite and offsite consequences.

Initial plume models may be a worst-case scenario, clearly marked as such, and may use real-time meteorological data, if available. Once an accurate estimate of the source term is available, subsequent modeling utilizes the estimated source term together with real-time meteorological data. Plume modeling projections consist of the following:

- Source term data, which identifies the hazardous substance, the release rate or quantity, release mechanism, and conditions pertaining to the assumptions used in the model
- Meteorology, including ambient temperature, atmospheric stability class, wind direction, and wind speed
- Maximum deposition projections for radiological releases to include concentrations, location, and downwind distance
- Plume footprint (as model allows), showing a base map of the site and surrounding area overlaid with a graphic image of the plume, real or projected time, and the concentrations of the plume as a function of the PAC

Consequence assessment modeling products clearly identify the following items used to generate the product:

- Source term data
- Meteorological conditions

For PARs, the consequence assessment modeling products provided must also clearly identify the following items. PARs provided in advance to offsite agencies assist in the interpretation of the following:

- Plume arrival time, as model allows
- Distances at which PAC may be exceeded
- Basis of the determination (i.e., facility condition, predictive modeling, measurements in the field)

- Relative effectiveness of the PAs, considering the material and release type

The National Atmospheric Release Advisory Center (NARAC) and HotSpot computer-based modeling programs listed below are used for consequence determinations.

8.1.1 National Atmospheric Release Advisory Center

The NARAC system is used as a tool for corroborating timely initial assessment/continuing ongoing assessments and field monitoring of radiological, chemical, and/or biological releases. This computer-based system uses actual weather and terrain data to assess transport, diffusion, and deposition on a regional scale. This resource, located at Lawrence Livermore National Laboratory, may be activated as needed. NARAC capabilities are requested as part of near real-time consequence assessment activities. The user can also submit field-monitoring data back to NARAC for refinement of the plume.

8.1.2 HotSpot

HotSpot provides a fast calculation tool for evaluating accidents involving radioactive materials. HotSpot provides first-order approximation of the radiation effects associated with the atmospheric release of radioactive materials. HotSpot code is used for short-term (i.e., less than a few hours) release durations. HotSpot uses the well-established Gaussian Plume Model, which is widely used for initial emergency assessment or safety analysis planning of a radionuclide release. Individual doses (unweighted) are produced, along with the 50-year committed effective dose equivalent. HotSpot supports classic units such as rem, radiological absorbed dose, curie, and the International System of Units such as Sievert, Gray, and Becquerel. The Gaussian model has also been used and accepted by the EPA. The adequacy of this model for making initial dispersion estimates has been tested and verified for many years. HotSpot has been included in the DOE Central Registry toolbox.

8.1.3 Field Monitoring

Field monitoring data is used to assess actual environmental consequences, verify computer projections of the location and magnitude for radiological and chemical releases, and conduct habitability studies.

Monitoring by WIPP personnel is performed at two levels:

- Within the incident area as directed by the IC
- Outside the incident area or beyond the site boundary as approved by the EOC

Additional resources from other locations are available for monitoring support. Data from all teams is collected and, if needed, plotted on a grid map. The EOC provides monitoring data to outside agencies.

8.1.3.1 Radiological Monitoring

WIPP Radiological Control maintains necessary equipment to perform radiological monitoring at the incident area. The RCTs are dispatched to perform radiological monitoring to determine safe evacuation routes and conduct monitoring at the furthest distance from the source of where measurable readings are probable. The RCTs use the outer boundaries of the affected sectors at that distance to initiate measurements to determine the footprint of the plume. When RCTs are dispatched to perform area surveys, they assess the immediate consequences of a radiological release by performing the following functions, as appropriate:

- Collect air samples
- Determine ambient radiation levels
- Determine the extent of contamination

Additionally, WIPP Radiological Control may provide additional RCTs to perform monitoring of personnel contamination at the scene or other identified locations. Facilities with RCTs assigned may also use their RCTs for monitoring of personnel.

Normally, all offsite radiological monitoring will be coordinated by local responders with the State of New Mexico Radiological Health and DOE/National Nuclear Security Administration (NNSA) National Response Assets, if requested and deployed. The RCTs can conduct radiological field monitoring operations offsite when approved by the EOC.

8.1.3.2 Chemical Monitoring

WIPP maintains limited chemical monitoring capabilities for response to HAZMAT incidents. The Environmental, Safety, & Health (ES&H) Department maintains the necessary equipment to perform limited chemical sampling and airborne concentration sampling.

The chemical inventory at WIPP was analyzed in the EPHS and screened out of the EPHA, with the exception of beryllium (for which there is no practical or expedient method to monitor for a release), and therefore does not constitute the need for a chemical field monitoring capability. Mutual aid for hazardous materials teams may be requested to support a chemical release incident that would affect WIPP.

8.2 Coordination

Offsite field monitoring activities are coordinated with offsite authorities having responsibility for the jurisdiction. The CAT coordinates with the EOC to ensure they are fully apprised on the results of consequence assessment. The consequence assessment results are shared by the EOC with the appropriate federal, state, and local organizations.

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Provisions are made for state representatives to participate in consequence assessment, field response, and the discussions of offsite PARs. If a Federal Radiological Monitoring and Assessment Center is activated, then they will coordinate with the EOC, as the situation warrants.

For security events that involve the loss of material with national security implications, the tactical coordination with offsite authorities to locate and recover the material occurs in the EOC. DOE/NNSA National Response Assets may also be requested to support local recovery operations.

9.0 PROTECTIVE ACTIONS

Protective Actions (PAs) are measures taken to prevent or minimize potential health and safety impacts on workers, responders, or the public. Conservative decision-making relating to PAs is the foundation for protecting people. The four general PAs are evacuate, shelter in place, remain indoors, and self-barricade. PAs are implemented in a 360-degree radius for all events, regardless of the wind direction, during the initial emergency response phase and are monitored and revised as needed throughout the event. Once the level of hazard is identified and the consequences of a release are identified, the PAs can be adjusted.

9.1 Protective Action Criteria

PAC is a general term for the level of release impact that, if observed or predicted, indicates action is needed to prevent or limit exposure of people to the hazard. PAC is used for both radiological and non-radiological consequence criteria in DOE facility emergency planning and response. PAC is used to determine appropriate distances within which PAs should be implemented or recommended.

9.1.1 Radiological Protective Action Criteria

For radiological materials, the PAC is the EPA Protective Action Guide (PAG) of 1 roentgen equivalent man (rem). The PAG, published in EPA 400-R-92-001, *Manual of Protective Action Guides and Protective Actions for Nuclear Incidents*, is the projected dose to reference man, or other defined individual, from an accidental release of radioactive material at which a specific PA to reduce or avoid that dose is warranted.

The PAG is intended to apply only to projected doses from exposures (airborne release of radioactive materials) during the early phase of an accident. The pathways considered include external gamma and beta dose from direct exposure to airborne and deposited materials and the committed dose to internal organs from inhalation of radioactive material.

The projected dose value for initiating PAs (evacuation or shelter in place), specified in EPA 400-R-92-001 Table 2-1, "PAGs for the Early Phase of a Nuclear Incident," is 1-5 rem, where the projected dose represents the sum of the effective dose equivalent resulting from exposure to external sources and the committed effective dose equivalent from all significant inhalation pathways during the early phase. The PAG values for committed dose equivalent to the thyroid and the skin may be 5 and 50 times larger, respectively.

The PAGs are stated in terms of projected dose. Doses incurred before initiation of PAs (and after the early phase of an event) are not normally included when considering whether to take PAs. In other words, it is intended that the PAG values be compared with the dose that can be avoided by taking PAs.

The basis for the PAGs is given in EPA 400-R-92-001 Appendix C, *Protective Action Guides for the Early Phase: Supporting Information*. In summary, this analysis indicates

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that evacuation of the public is usually justified when the projected dose to an individual is 1 rem. This conclusion is based primarily on EPA's judgment concerning acceptable levels of risk and effects on public health from radiation exposure in an emergency situation involving nuclear power plants. This 1 rem total effective dose equivalent includes the 50-year committed effective dose equivalent from material inhaled. WIPP uses a value of 1 rem as the radiological PAC.

For ingestion pathway exposure, the U.S. Food and Drug Administration (FDA) has issued recommended PAGs that correspond to the "intervention levels of dose" consensus values set by international organizations (as identified in the Center for Devices and Radiological Health document, *Accidental Radioactive Contamination of Human Foods and Animal Feeds: Recommendations for State and Local Agencies*, August 13, 1998). Those PAGs are 0.5 rem for committed effective dose equivalent or 5 rem committed dose equivalent to an individual tissue or organ, whichever is more limiting.

The FDA also recommended Derived Intervention Levels corresponding to the PAGs for several groups of radionuclides. Derived Intervention Levels corresponding to the ingestion pathway PAGs may be derived locally according to the FDA recommendations for specific radionuclides, foodstuffs, and animal feeds of interest.

9.1.2 Chemical Protective Action Criteria

For chemical materials, the PAC used (listed in order of preference) are the Acute Exposure Guideline Level (AEGL)-2 (60-minute value) promulgated by the EPA, Emergency Response Planning Guideline (ERPG)-2 published by the American Industrial Hygiene Association, or Temporary Emergency Exposure Limit (TEEL)-2 developed by DOE.

- AEGL-2 (60-minute value)

AEGLs are guideline levels for once-in-a-lifetime, short-term (acute, not chronic) exposures to airborne concentrations of acutely toxic chemicals. These exposure limits are intended to protect most individuals in the general population, including those that might be particularly susceptible to the toxic effects of the chemicals. However, certain individuals could experience effects at concentrations below the corresponding AEGLs.

- ERPG-2

ERPGs are values developed under the auspices of the American Industrial Hygiene Association. Within the ERPG system, three biological reference values are defined (ERPG-1,-2,-3). They are intended to provide estimates of concentration ranges where one reasonably might anticipate observing adverse effects as a consequence of exposure to a specific nonradioactive hazardous substance.

- **TEEL-2**

TEELs, developed by DOE, include three biological reference values (TEEL-1,-2,-3) for each substance, each with a definition similar to the corresponding ERPG value.

For purposes of applying the DOE O 151.1C emergency classification definitions, the term PAC should be interpreted to mean: a 15-minute time-weighted average concentration of the substance in air that equals (in order of preference) the Final or Interim AEGL-2 (60-minute), ERPG-2, or TEEL-2 value for that substance.

9.2 Records

WIPP maintains a hardcopy and/or electronic logs documenting actions taken during an emergency. WIPP maintains records associated with follow-up health and hygiene surveys. Procedure-generated records related to emergency HAZMAT exposures, medical treatment, follow-up surveys, and long-term tracking of health effects from over-exposures are the responsibility of the WIPP Environmental, Safety, and Health Department. Records are kept in accordance with the WIPP Records Management Program.

9.3 Typical Protective Actions

A review of the WIPP hazardous material inventory is included in the EPHS. Materials above quantities that can be screened out are quantitatively analyzed in the EPHA. EALs and associated pre-planned PAs are then developed along with associated distances from a WIPP release point to which the PAs apply. Additional PAs are developed as needs are identified.

The EALs and PAs are then incorporated into the categorization/classification procedure used by the FSM or CM, so that the issuance of PAs is automatic upon declaration of an OE and selection of an EAL. PAs are then communicated to site personnel through the various site communication systems. Offsite notifications are made to required agencies according to procedures.

In general, the health effects for short-term releases are mitigated most by sheltering in place or remaining indoors whereas long-term releases may require evacuation if it is safe to move personnel out of the area. In most cases, the primary strategy for protecting site workers is early recognition and notification to shelter in place, followed by a well-planned evacuation. WIPP's PAs are defined in the appropriate procedures. Additional PA considerations may be applicable for emergencies involving HAZMAT, such as area access control and shielding.

Default PAs for worst-case scenarios are generally implemented prior to or upon declaration of an OE, although pre-planned PAs may be implemented in the very early stages of an event, when little information is known about the severity of the incident. The PAs may be revised based on the incident and weather conditions as determined by the FSM or CM and the IC.

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The reevaluation of PAs and PARs is a product of continuous consequence assessment that is performed throughout the response. The FSM or CM, with information provided by the IC, will perform an evaluation of whether to maintain the current PAs and PARs. Evaluation of habitability for areas being used by responders and sheltered personnel is also part of the continuing evaluation for PAs.

9.3.1 Protective Action Provisions

For each potential PA, analyze site capabilities and include provisions for:

- Conditions, procedures, and authorities for evacuation of facility personnel, including persons with permanent or temporary disabilities, visitors, and personnel not usually assigned to the facility
- Emergency communications (e.g., PAS, radios) to facility personnel
- Identification of potentially exposed personnel and assurance they receive appropriate follow-up evaluation
- Predetermined facility evacuation routes, staging areas, and transportation in the event of an area or site evacuation
- Personnel accountability
- Safe shutdown of operations or other operating actions
- Identification of essential personnel
- Access control
- Notifications via radio, emergency announcements

Populations in nearby facilities (within the hazard area) may not be aware that an incident has taken place, making it extremely important that PAs are also provided to these personnel when necessary.

9.3.2 Emergency Site Protective Action Notifications

During an emergency at the WIPP site, the CMRO will notify site employees using the site alarm system and the facility PAS. The CMRO will announce the nature of the emergency and PAs for the employees to take. All WIPP employees and site visitors are responsible for complying with directions of the emergency personnel, alarm system notification, and emergency evacuation routes and exits.

In the event the CMR loses power, notification systems may be limited. The CMRO will use the available PAS, mine pager phone, direct radio frequencies, and/or Protective Force personnel to provide emergency notifications and PAs.

Notifications to take protective actions at the SWB will be made using the SWB PAS and may come from SWB Security or Office Wardens (OWs).

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9.3.3 Evacuation

Evacuation is the movement of persons from a dangerous place due to the threat or occurrence of an emergency event to a designated area. Primary and alternate assembly areas (for building evacuations) and staging areas (for site evacuations) have been established. WIPP site assembly and staging areas are illustrated in Figure 9.1, *WIPP Evacuation Plan*. Staging areas for the SWB are illustrated in Figure 9.3, *SWB Evacuation Plan*.

In general, the health impacts for long-term releases may require evacuation. Immediate evacuation is considered for personnel who are threatened by fire or toxic material, in danger of building collapse, need urgent medical care, without adequate shelter, and potentially threatened during a malevolent act or workplace violence incident.

Depending upon the type of emergency and level of response required it may be necessary to evacuate part or all of the affected facilities at WIPP including the underground. Upon determining that an area or site evacuation is necessary, the IC will designate an assembly or staging area and evacuation route(s) to be used based on existing or potential hazards (including radiological hazards) and weather conditions. If the EOC is activated and time permits, then the Operations Section will work with the Planning Section to develop the evacuation plan in coordination with the IC. Protective Force will maintain access control to the facility in accordance with Security procedures.

The gated area near the security gate on the south access road to WIPP may be used as a staging area for personnel should there be an emergency that entails evacuation and/or decontamination. The primary evacuation routes for WIPP are the same as the main access roads to WIPP. Alternate evacuation routes from the facility are provided at the south side and the east side of the facility as shown in Figure 9.2, *Evacuation Routes*. The preferred evacuation route is determined during evacuation planning and is based on the nature of the event, prevailing weather conditions, and actual or potential radiological release.

When an evacuation is called for, the CMRO will sound the evacuation alarm (yelp). Instructions will be broadcast over the site PAS. OWs assist in the evacuation of their specific work areas. In the event that there is a failure of the emergency communications systems, as in a total power outage, first responders may have to manually sweep and instruct personnel to evacuate the buildings.

If an evacuation occurs from locations upwind of an event, personnel should make every effort to stay upwind from the release. If an evacuation must occur from locations downwind, personnel should evacuate perpendicular to the direction of the suspected plume or wind direction, using the quickest routes available. Personnel shall refrain from eating, drinking, using tobacco products (e.g., smoking), or chewing gum until told it is safe to do so by the IC or designee.

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Underground evacuation is covered in the Underground Escape and Evacuation Plan, which includes an attached map showing escape routes and designated assembly areas.

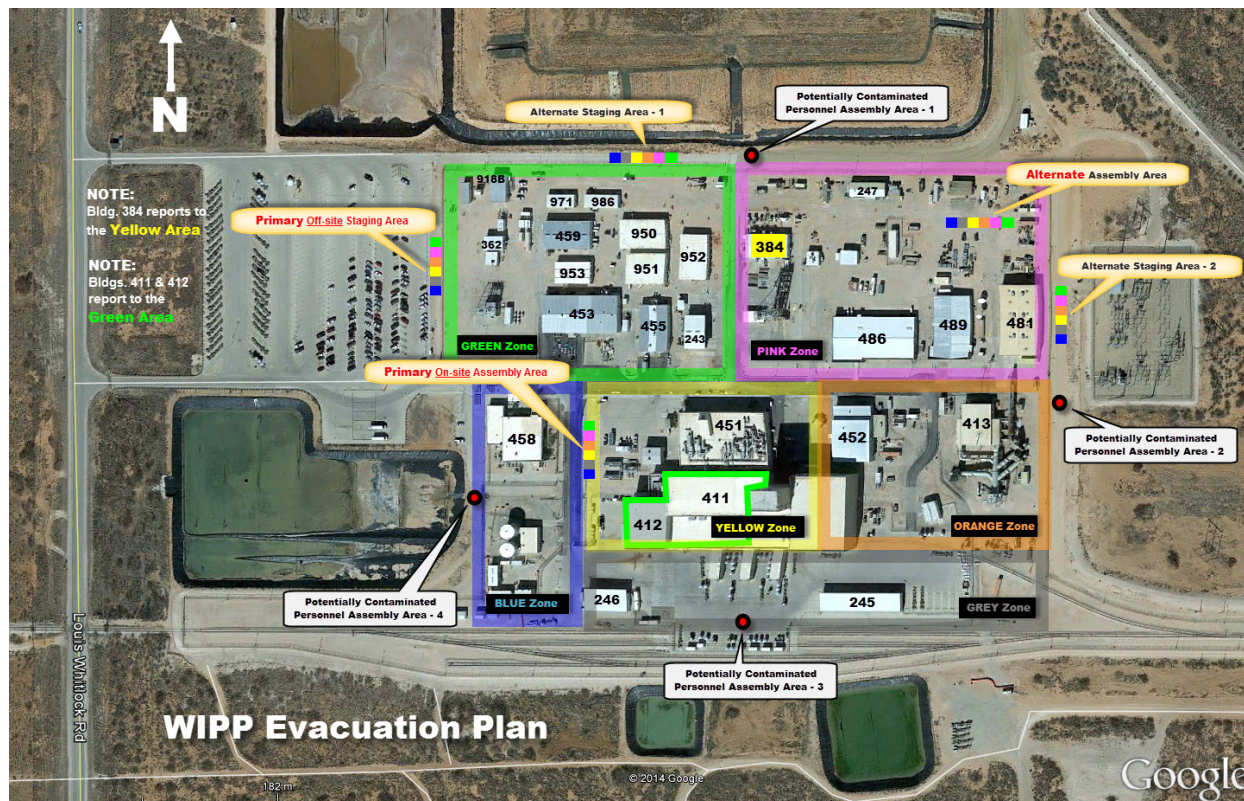


Figure 9.1 – WIPP Evacuation Plan

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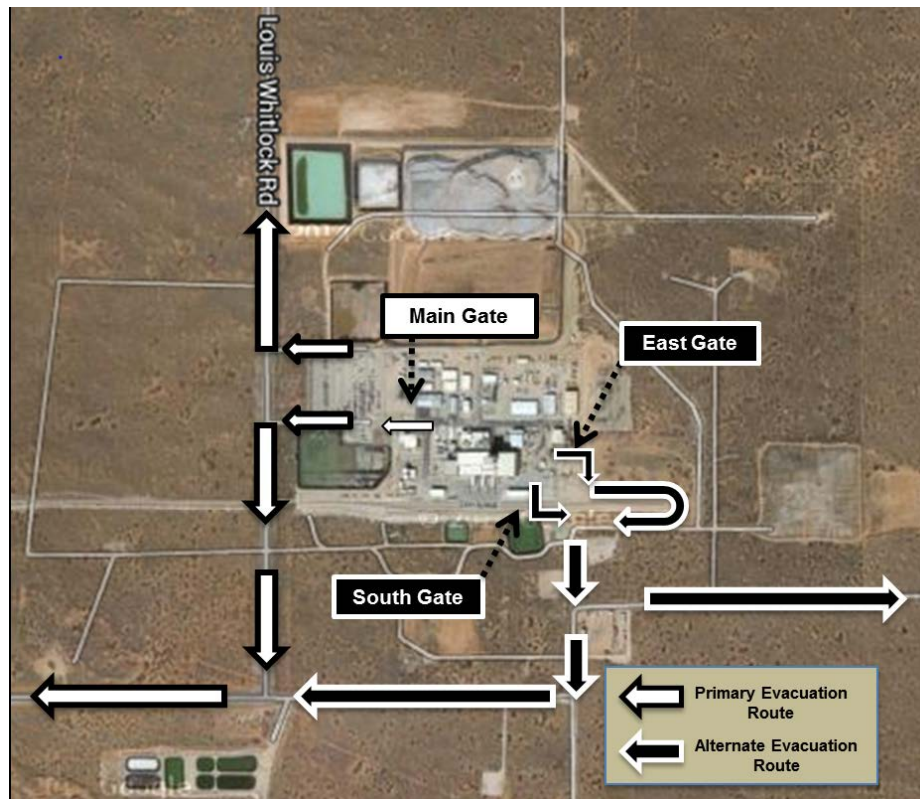


Figure 9.2 – WIPP Site Evacuation Routes



Figure 9.3 – SWB Evacuation Routes

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Shelter in place means that personnel move into or stay indoors in a safe area and report in for accountability until notified that it is safe to leave. For natural phenomena/severe weather, shelter in place inside a permanent building/structure will be directed.

Actions may also involve closing doors and windows; turning off air conditioners, heaters and air-handling units that draw outside air. Personnel shall refrain from eating, drinking, using tobacco products (e.g., smoking), or chewing gum until told it is safe to do so by the IC or designee. In general, the health impacts for short-term releases are mitigated most from sheltering in place, whereas long-term releases may require evacuation. The effectiveness of a decision to shelter in place requires continuous monitoring and analysis to ensure safety and health of workers.

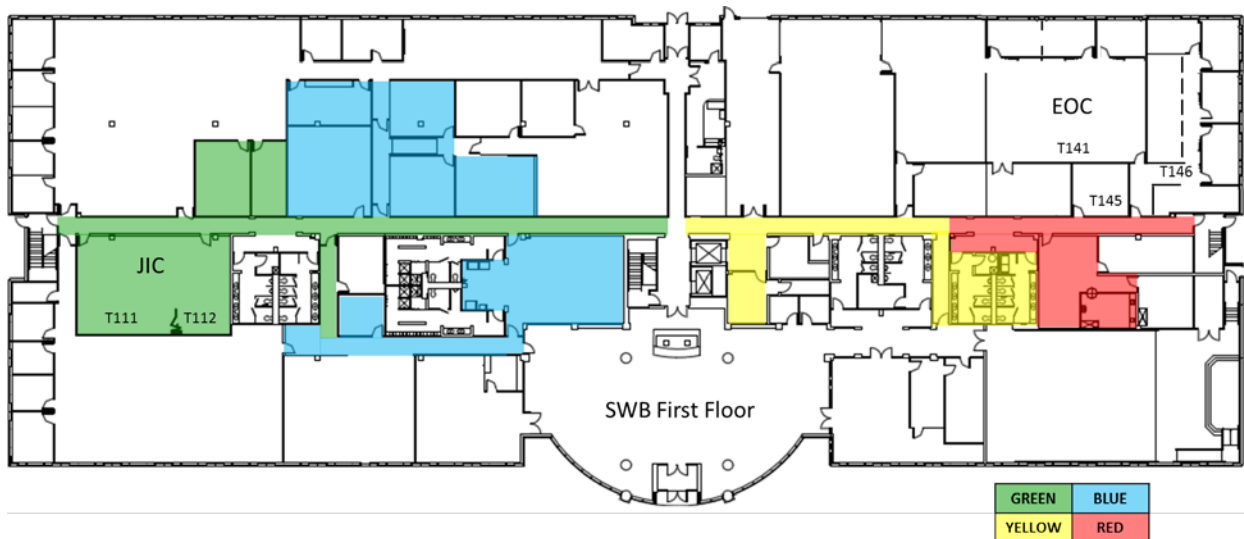


Figure 9.4 – SWB First Floor Shelter Areas

9.3.5 Remain Indoors

Remain indoors can be used as a PA to keep workers from going outside when an incident has occurred on the site or nearby that is not an imminent threat, but could degrade further and require follow-on PAs. Personnel do not have to report to a shelter-in-place area and are free to move about inside the building. Accountability is not required for remaining indoors.

9.3.6 Self-Barricade

Self-barricade can be used as a PA to keep workers safe when there is threat in the immediate area (i.e., a malevolent act, active shooter). The location of the threat will influence the decision to evacuate or self-barricade.

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Personnel find a place to hide where the threat is less likely to find them.

- Barricade to provide protection if shots are fired in their direction (e.g., inside an office with a closed and locked door).
- Blockade the door with heavy furniture.
- Close any blinds and turn off lights.
- Hide behind large items (e.g., cabinets, desks).
- Silence your cell phone and/or pager.
- Turn off any sources of noise.
- Remain quiet and wait for first responders.

9.3.7 Personnel Accountability

Accountability is one of the critical concerns of the ERO. Name-by-name accountability is required for high hazard areas where there is a potential for exposure to HAZMAT above accepted threshold values. An accountability process is followed when PAs are implemented according to appropriate procedures.

Underground accountability is achieved by the use of the brass tag system, which is verified in the Lamp Room. Surface accountability is achieved through the OW Program. OWs collect accountability with support from managers/supervisors to ensure that all personnel in their areas accounted for. If it is safe to do so, then OWs will sweep their assigned areas and direct personnel to designated assembly or staging areas. If OWs are not available, then managers are responsible for accountability of their personnel. OWs report accountability status to their ACOWs, who in turn provide the accountability information to the Chief Office Warden (COW). The COW collects and provides the accountability information to the CMRO. The COW also works with Security to obtain a printout of the personnel onsite from the Radio Frequency Identification system to assist with accountability.

The COW is responsible for determining when the accountability process is complete, whether personnel are missing or not. If any personnel are not accounted for and identified as missing, the COW contacts the CMRO and identifies the missing/unaccounted for personnel and their last known locations. The CMRO/FSM then reports the accountability results to the IC with emphasis on those missing, trapped, or injured.

The FD and ERTs are trained to perform search and rescue activities if someone is missing. The IC may initiate search and rescue activities immediately if personnel are reported missing and the safety of the rescue teams is not in jeopardy. The IC is responsible for the accountability of all responding personnel.

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Once the EOC is activated, the FSM will provide accountability results to the EOC. The COW then reports to the EOC, as requested, and becomes the Accountability Coordinator.

Accountability at the SWB is also performed through OWs and supervisors/managers according to procedures.

9.4 Entry and Reentry

Entry activities are actions taken by responders such as rescuing live or potentially live victims, stopping radiological or HAZMAT leaks, shutting off valves/controls, and similar activities. These actions are performed following strict procedures and are typically time-urgent activities requiring immediate approval by the IC. Approval of dose or concentration limits as identified in Table 9.1 is required for time-urgent entry activities.

Reentry activities involve reentering a facility or affected area that has been evacuated or closed to personnel access during the course of the emergency. Reentry into a fixed facility should be coordinated with the CMR/FSM to ensure situational awareness of facility and plant systems status.

The two types of reentry are:

- Before termination, during the mitigation of the emergency
- Following termination

9.4.1 Exposure Control and Dosimetry

WIPP protects workers through administrative controls and sets the control for radiation at one rem (roentgen equivalent man) per year. This is performed through as low as reasonably achievable efforts and radiation work permits to control exposure levels. NWP selects hazard controls per the NWP Integrated Safety Management Description based on the following hierarchy:

- Elimination or substitution of the hazards where feasible and appropriate
- Engineering controls where feasible and appropriate
- Work practices and administrative controls that limit worker exposures
- PPE

The proper use of PPE can be an important factor in exposure/contamination control. PPE, including clothing, hoods, boots, booties, gloves, eye protection, and respiratory protection, significantly reduces the exposure/contamination risk.

Emergency worker exposure control is facilitated by the use of personal dosimetry, either thermoluminescent dosimeters and/or direct reading dosimetry. NWP contamination control procedures delineate the use of personal dosimetry.

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9.4.2 Radiological Event Reentry Activities that Occur Before Termination

Reentry activities that occur before termination of the OE require a contingency plan or reentry plan to ensure the safety of reentry personnel, including planning for the rescue of reentry teams.

The activities of reentry and rescue teams should follow specific protocols:

- Teams should be provided with adequate briefings concerning safety, operations, communications, and hazards before being deployed. Reentry shall be planned to minimize risks to personnel.
- If personnel need to be rescued, then the rescue shall be planned so as not to expose rescuers to life-threatening radiation doses. Consideration should be given to the possibility of a continuation or degradation of controls that prevent radiation exposure, such as shielding.
- Teams should be debriefed upon return from their assigned missions.
- The accomplishments, failures, exposures, and status information of the teams should be recorded and made available to other teams and personnel in the emergency response facilities.
- Rescue actions that require early reentry into the immediate evacuation zone are to be performed by a minimum of two trained and qualified personnel.
- Reentry during the emergency shall be voluntary by individuals trained in emergency response and reentry only.
- Reentry should be made only if a preliminary radiological survey indicates that the radiation levels are acceptable for reentry.
- Existing instrumentation or temporary sensors with remote readouts may be used.
- All reentries shall be made with continuous radiation monitoring.

9.4.3 Chemical Event Reentry Activities before Termination

The IC is the approval authority for entry and reentry in chemical events, to include approval of reentry activities for concentrations greater than or equal to Immediately Dangerous to Life and Health levels (provided proper PPE is used). No other approval is required; however, will be coordinated and communicated with the FSM or CM prior to the entry. WIPP capabilities are limited in hazardous material operations and will rely on mutual aid agreements for most hazardous material response and operations.

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9.4.4 Reentry Activities that Occur after Termination

Reentry activities conducted after termination of an OE are well-planned activities to accomplish specific objectives set by the Recovery Organization, such as building and equipment assessments and safe shutdown activities. Reentry following emergency termination is conducted in support of incident scene investigation activities and/or recovery operations. Post-termination reentry is approved by the Recovery Manager after consultation with CBFO and NWP senior leadership. All planned exposures above normal occupational limits are voluntary. Before initial reentry, the following considerations are included in planning:

- Assessment of HAZMAT surveillance data to determine potentially affected facilities
- Review of exposure histories of personnel required to participate in reentry operations if radiological considerations are present
- Determination of equipment adequacy and availability for monitoring and survey instrumentation

9.4.5 Radiological Emergency Exposure Limits for Entry and Reentry

Guidelines for emergency exposure situations include the following:

- The risk of injury to those individuals involved in rescue and recovery operations shall be minimized.
- Operating management shall weigh actual and potential risks against the benefits to be gained.
- No individual shall be required to perform rescue operations that might involve substantial personal risk.
- Each individual authorized to perform emergency actions likely to result in occupational doses exceeding the values of the limits provided in 10 CFR 835.202, *Occupational dose limits for general employees*, subparagraph (a), shall be trained according to 10 CFR 835.901, *Radiation safety training*, subparagraph (b), (e.g., Radiological Worker II) and briefed beforehand on the known or anticipated hazards to which the individual will be subjected.

Dose limits greater than 25 rem to the whole body for urgent lifesaving reentry must be approved by the IC after consultation from the EOC Safety-HP (radiological/criticality incidents) and with concurrence from the CM, if available. The EOC will be briefed before or after entry/reentry is made, based on time urgency for life safety. For non-life-saving reentry, the CM will be briefed on the reentry plan prior to entering the hazard area. Post-termination reentry exposure limits are approved by the Recovery Manager after consultation with CBFO and NWP senior leadership.

The dose limits for radiation exposure levels for emergency workers are as follows in Table 9.1.

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Table 9.1 - Guidance on Dose Limits for Emergency Workers

Dose Limit¹ (rem)	Activity	Condition
5	All	Dose should be kept as low as reasonably achievable
10	Protecting valuable property	Only on a voluntary basis where lower dose limit is not practicable
25	Lifesaving or protection of large populations	Only on a voluntary basis where lower dose limit is not practicable
>25	Lifesaving or protection of large populations	Only on a voluntary basis by personnel fully aware of the risks involved

¹ Sum of external effective dose equivalent and committed effective dose equivalent to non-pregnant adults from exposure and intake during an emergency situation. Workers performing services during emergencies should limit dose to the lens of the eye to three times the listed value and doses to any other organ (including skin and body extremities) to ten times the listed value. These limits apply to all doses from an incident, except those received in unrestricted areas as members of the public during the intermediate phase of the incident. (EPA 400-R-92-001)

9.4.6 Chemical Emergency Exposure Limits for Entry and Reentry

Emergency worker exposure to HAZMAT guidelines are shown in Table 9.2. The PPE recommended is the minimum required. More stringent PPE may be used where it is available and no additional risk is incurred by its use.

Table 9.2 - Non-Radiological Exposure Guidelines for Emergency Workers

Projected Concentration Limit to Emergency Workers	Recommended Actions
< Short-Term Exposure Limit	No PAs required unless activities exceed 15 minutes
≥ Short-Term Exposure Limit and < Immediately Dangerous to Life and Health	PPE and air purifying respirators required. Self-contained breathing apparatus required in certain instances
≥ Immediately Dangerous to Life and Health	PPE and self-contained breathing apparatus required

9.5 Emergency Planning Zones

The EPZ is the area within which the EPHA results indicate a need for specific and detailed planning to protect people from the consequences of hazardous material releases. The WIPP EPHA provides the basis for the EPZ for WIPP in order to protect workers and the public. WIPP supports the local and state authorities in planning and preparedness activities to protect people working in the EPZ. Among these activities are identification of response organizations, establishment of effective communications to notify the public and the responsible authorities, development of public information and education materials, identification of predetermined response actions, and development and testing of response procedures.

The EPZ size was designed to give confidence that planning and preparedness will be sufficiently flexible and detailed to deal with a wide range of types and magnitudes of emergency conditions. The EPZ is large enough that the planning efforts within its defined boundaries provide a substantial basis for an expansion of response activities beyond the EPZ, if it is warranted by actual conditions.

Figure 9.5 provides a graphic of the WIPP EPZ.

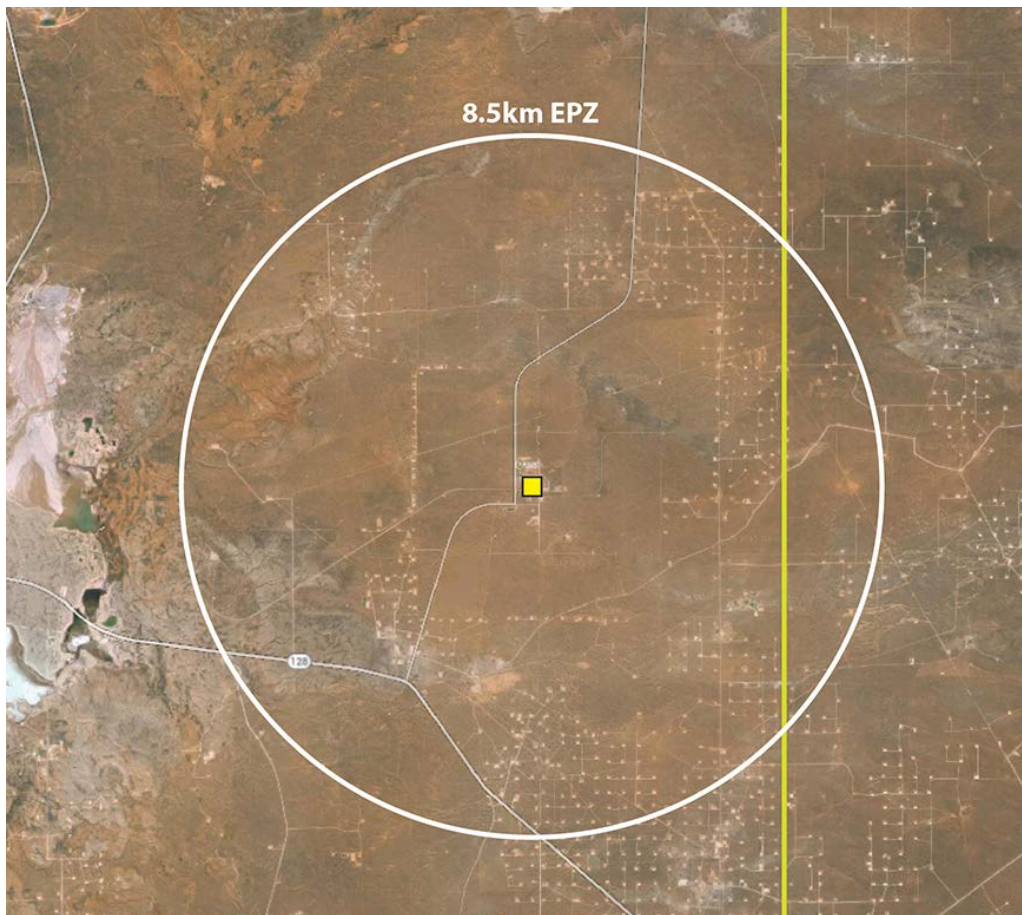


Figure 9.5 - WIPP Emergency Planning Zone

9.6 Offsite Protective Action Recommendations

The implementation of public PARs is coordinated with offsite agencies that have agreements in place with the DOE. Emergency Notification Forms and other communication methods for PARs are completed according to procedures.

WIPP Protective Force may be directed by the FSM, IC, or CM to close and staff the north and south access road gates as an initial action to prevent public access to areas that may have been affected by a HAZMAT release from WIPP until external law enforcement agencies arrive to relieve them or secure access to WIPP at the access road intersections with the Jal and Hobbs Highways. The access road gates are located at the LWA boundary.

In the event of a GE, the default PARs would be to evacuate the EPZ. Louis Whitlock and South Access Road control points will be closed. Because most access road traffic is large oilfield vehicles, road closures will be requested to prevent access to Louis Whitlock Road at Hobbs Highway (62/180) and the South WIPP Access Road at Jal Highway (128), as the WIPP access roads have limited locations where large vehicles can turn around. Further, closure at the Jal and Hobbs Highways will ensure that the

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public is restricted from areas potentially impacted by worst case accidents postulated in the safety basis and the EPHA.

9.6.1 Ingestion Pathway Exposure

Ingestion exposure pathway concerns are also considered in the event of a GE. Typically in the early emergency response phase, before the situation has stabilized, the PARs will address the direct exposure from the passage of a radioactive plume and may involve the sheltering or evacuation of personnel from downwind sectors. PARs may also address the need to remove livestock from affected areas or place livestock on stored feed.

In the intermediate and late phases of the emergency, as consequence assessment personnel evaluate dose projections and use field monitoring data to refine PARs, the need to interdict the distribution of foodstuff and/or relocation of people from affected areas will be determined. If necessary, these actions will help to protect the public from the ingestion of radioactively contaminated food or water (e.g., embargo or disposal of contaminated food or animals, shutting down surface water intakes for public water supply systems, curtailment of hunting or fishing). CAT members will perform an evaluation, discuss with Safety-HP, and make recommendations to the WIPP EOC CM, who will review prior to the dissemination as PAR(s) to state and county representatives. The PARs are implemented by state agency personnel and may also require involvement from other federal agencies (e.g., Department of Agriculture, Department of Transportation).

9.7 Changes to Protective Actions

The FSM/EOC has the authority to upgrade the event categorization/classification and change PAs/PARs, as deemed necessary. Changes in PAs/PARs must be coordinated with the IC, documented, tracked, and validated as performed and notifications made according to procedures.

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10.0 EMERGENCY MEDICAL SUPPORT

10.1 Emergency Medical Services

WIPP FD EMTs provide all onsite emergency response medical care. EMTs onsite are licensed up to Intermediate EMT level. FD EMTs are trained to properly handle contaminated patients and will coordinate with RCTs to monitor patient contamination levels in accordance with DOE O 440.1A, *Worker Protection Management for DOE Federal and Contractor Employees*.

The FD EMTs are available 24/7 and may support Occupational Health Services during non-working hours for the nurses.

The Carlsbad Fire Department is the primary local response organization for medical emergencies at outlying locations.

10.2 Occupational Health Program Staff

WIPP Occupational Health Services includes the Occupational Medical Director, Occupational Health Nurses, EMTs, consultant pharmacist, and Health Services Manager. Staffing for the site emergency medical program ensures adequate coverage for all shifts. A licensed nurse at the advanced life support level is available onsite during regular working hours.

10.3 Medical Triage and Transportation

Triage and transportation of casualties is accomplished using the WIPP FD capabilities and ambulances or requesting offsite assistance as necessary from local ambulance, fire departments or medical air transport. Mutual aid agreements are in place that would support a WIPP mass casualty event.

In the event of a contaminated injured or ill person, an RCT will assess the radiological conditions of the patient. An RCT will also be dispatched with the ambulance to monitor contamination levels of the patient and the medical responders. That RCT will remain at the medical treatment center while contamination is a concern. Additional radiological support may be dispatched to assist with the radiological activity at the medical treatment center.

10.4 Communications

The FD is in contact with the CMR and FSM through the use of UHF/VHF radios. Cell phones are also used to maintain contact during emergency transport. Additional information regarding site communications and notifications is located in section 7.0.

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11.0 EMERGENCY PUBLIC INFORMATION

The CBFO and NWP policy is to provide approved, accurate, and timely information about emergency situations at WIPP that could affect public and employee health and safety, property, and the environment.

The JIC, managed by the CBFO and NWP, is prepared to respond to actual or perceived emergencies that generate local, regional, and national attention. The JIC is operated according to the JIC Operations Plan. Any event at the WIPP site or along its transportation corridors that generates public and news media attention generally will result in the activation of the JIC to address employee, public, and news media questions and concerns.

The JIC is authorized to issue emergency public information (EPI) in a timely and accurate manner to employees, affected communities, the general public, news media, and elected officials. For offsite transportation incidents where the IART is activated, public information releases must be approved according to the IART Plan prior to release (i.e., IC and HQ approval coordinated by the IART).

The EPI program is based on a Joint Information System (JIS) which provides the means for CBFO and NWP to coordinate the timely exchange of information among representatives of WIPP and other organizations involved in a response. A Public Information Officer (PIO) may be deployed to the scene to serve as the on-scene spokesperson. When a PIO from an offsite agency is active at the event scene, the JIC will coordinate responses with the offsite PIO. If there is no PIO at the event scene, inquiries will be deferred to JIC personnel in accordance with the JIC Operations Plan.

11.1 Emergency Public Information Organization

The WIPP EPI organization uses a JIS, as reflected in the structure and reporting responsibilities identified in the JIC operations plan. The JIC is part of the WIPP ERO and serves as a common EPI center for the project, including the CBFO and their onsite contractors; affected states, counties, and community response organizations; and other federal agencies. The positions in the JIC authorized to release and present EPI concerning emergency conditions, responses, and recovery efforts are the DOE Spokesperson and/or the JIC Manager and qualified JIC staff members. JIC positions that interact with the media receive specific spokesperson training.

The JIC is activated at the direction of the EOC PAO, NWP Communications Manager, or DOE Spokesperson. The JIC can be activated either in whole or in part, as warranted based on the event, level of news media attention, or public concern. The EOC PAO serves as the main interface between the JIC and the EOC.

All PA directives provided to the public will be made by a representative of the affected city and/or county based on information provided to them initially by the FSM/EOC including any PARs. That information will also be provided to applicable JIC staff members so they can advise the public and news media on the PA directives after they have been disseminated by the affected city or county officials.

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Before, during, and after any emergency event at or affecting WIPP, or along its transportation corridors, the following audiences will be the focus of JIC communications:

- News Media
- Local Community
- Employees and Emergency Workers
- Elected Federal, State, and Local Officials
- Federal, State, and Local Agencies
- Special Interest Groups
- General Public

All news releases will explain the reason for JIC activation, list the telephone number for the News Media Phone Team, and encourage news media to gather at the JIC for updates. The JIC and the EOC PAO coordinate release of EPI with the DOE Director of Public Affairs and the Headquarters Emergency Manager.

11.2 Joint Information Center

The JIC is located in the SWB. The JIC Management Team is comprised of the DOE Spokesperson, JIC Manager, Assistant JIC Manager, Technical Spokesperson, JIC Writer/Social Media Writer, News Media Information Manager, and Public Information Manager.

Additional JIC staffing is determined based upon the severity of the event. JIC staff members follow procedures and position checklists according to the JIC operations plan. Table 11.1 shows a list of JIC positions and general responsibilities. Positions in bold and asterisked are minimum required staff for the JIC to be operational.

Table 11.1 - JIC Positions and General Responsibilities

Position	Responsibilities
*DOE Spokesperson	<ul style="list-style-type: none"> Provides JIC policy guidance, makes certain notifications, and conducts briefings for news media and stakeholders
*JIC Manager	<ul style="list-style-type: none"> Manages staffing and operation of the JIC
Technical Spokesperson	<ul style="list-style-type: none"> Presents technical information in lay terms at news conferences, briefings, and news interviews, in support of the DOE Spokesperson
*Public Information Manager	<ul style="list-style-type: none"> Manages staffing and operation of the Public Inquiry Phone Team, JIC Support Team, and JIC Receptionist Team
*Assistant JIC Manager	<ul style="list-style-type: none"> Notifies key local, state, and federal elected officials about emergency events at the WIPP site or along its transportation corridors, which involves contacting stakeholders and providing them with information about the emergency
City, County, and State Spokespersons	<ul style="list-style-type: none"> Offsite agencies implementing PARs and conducting other emergency response public information activities are encouraged to participate in the JIC

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Position	Responsibilities
*News Media Information Manager	<ul style="list-style-type: none"> Encourages the news media to come to the JIC and provides a phone number to call for information Develops and relays EPI to the news media and oversees the staffing and operations of the JIC Writer, News Media Phone Team, and the News Media Team
EOC Public Affairs Officer	<ul style="list-style-type: none"> Compiles and relays emergency information to the JIC staff for release to the news media, public, and elected officials Ensures that information released to the news media and public is approved by the CM and CBFO SFO (or CBFO designee)
News Media Phone Team	<ul style="list-style-type: none"> Provides responses to incoming news media phone inquiries and reports rumors and inaccuracies to the JIC Management Team Lessens public concern by providing accurate information and preventing the spread of misinformation
*JIC Writer/Social Media Writer	<ul style="list-style-type: none"> Prepares, posts, and monitors social media information on WIPP sites Prepares news releases from information provided by the EOC PAO Writes background information relevant to the emergency, as directed by the JIC Manager or the News Media Information Manager
Public Inquiry Phone Team	<ul style="list-style-type: none"> Answers phone calls from the public, employees, their families, and other callers Lessens public concern by providing accurate information and preventing the spread of misinformation
JIC Support Team	<ul style="list-style-type: none"> Prepares the JIC for operation, reconfigures the area and equipment once the JIC is deactivated, and provides clerical support to the JIC
JIC Receptionist Team	<ul style="list-style-type: none"> Badges, ensures security, and makes PA announcements to employees not associated with the JIC (as directed by the Public Information Manager)
News Media Team	<ul style="list-style-type: none"> Monitors and analyzes news broadcasts for inaccuracies and concerns that can be clarified or resolved at news conferences Distributes emergency information to the JIC staff/teams, employees, news media, and onsite agencies Provides logistical support, including graphics, for news conferences Escorts news media in the JIC, the WIPP site, or vantage points near the site Includes an employee communicator responsible for internal electronic distribution

The JIC is considered operational when all members of the JIC Management Team are signed in and present and an open telephone connection has been established with the EOC, if applicable. Area news media are notified of JIC activation through telephone calls and an initial news release is sent out briefly stating the purpose of the activation.

11.3 Public Education

The NWP Communications Department in collaboration with the EM&S Department provides information to support public education for WIPP and its activities prior to and after an emergency has occurred. Public education material is available and distributed periodically through the Communications Department according to the JIC Operations Plan with a summary of WIPP emergency preparedness programs and activities.

The public education materials include information on current hazard assessments, emergency public notifications, the Emergency Alerting System radio station frequencies, an overview of the WIPP Emergency Public Information Program, and Public Inquiry telephone numbers. The materials are available to news media and the

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public through direct distribution as part of regular outreach activities and when requested.

Public education materials are prepared in cooperation with the Local Emergency Planning Committees and are also provided to the Local Emergency Planning Committees for inclusion with the local emergency information provided to the general public.

11.4 Public Inquiries and Rumor Control

The Public Inquiry Team responds to any questions/concerns from the public according to the JIC Operations Plan.

During any emergency there is potential for rumors or incorrect information. News media and social media monitoring will be performed to detect incorrect emergency information. This involves monitoring and taping of local television and radio news programs, reviewing and printing out of Internet news sites, and continuously monitoring social media for activity related to the incident.

Telephone team members will also detect rumors. When incorrect information is detected through monitoring or other means, this information will be provided on an emergency response log through the News Media Information Manager or the Public Information Manager to the JIC Manager.

12.0 EMERGENCY RESPONSE OVERVIEW

Emergency response activities follows the three tiered approach discussed in Section 3.0. This section provides an overview of general response actions for major venues in each tier.

12.1 Central Monitoring Room/Facility Shift Manager

All onsite emergencies will be reported immediately to the CMRO at Extension 8111 or by radio. The CMRO determines the need to dispatch emergency personnel based on the incident information provided and notifies the FSM. For law enforcement incidents, WIPP Protective Force will be dispatched. Personnel at the SWB will call 911 for emergencies and be connected to the Carlsbad, NM emergency dispatcher.

Immediately following the dispatch of emergency personnel, the FSM compares the incident information to the EAL indicators and determines the appropriate categorization of the incident and further classification if necessary, according to procedures.

According to DOE O 151.1C, the categorization/classification of an OE must be made within 15 minutes after event recognition/identification/discovery. The FSM (or EOC if activated) has the authority to upgrade an OE if there is a significant degradation to the situation or increased risk to offsite personnel resulting in revision of PARs. The FSM then implements the applicable initial PAs.

If the FSM declares an OE, then the FSM becomes responsible for the emergency management functions, initiates notification of the ERO, and activates the EOC according to procedures. The FSM then makes time-urgent notifications according to procedures. If the FSM declares a GE, then initial PARs are provided to offsite organizations/agencies according to procedures using predetermined PA distances associated with the EAL.

Upon arrival of a responding IC, Incident Command and an ICP are established. The FSE may report to the ICP as a technical advisor after obtaining safe route information from the IC. The FSM continues to monitor balance of plant status and coordinates and communicates with the IC.

If personnel are evacuating or sheltering in place, then the FSM begins collecting accountability. The FSM continues supporting the IC and maintains communications with the EOC, once operational.

Other supporting activities performed by the FSM include reviewing the WIPP Operations Schedule and notifying anyone with activities that may be affected by the incident as well as coordinating emergency announcements. The FSM also determines whether to implement the RCRA Contingency Plan according to procedures.

The FSM remains engaged in the response efforts, supports the IC/EOC during ongoing event management, and monitors plant status, while maintaining communications and coordination with the EOC. The FSM also coordinates emergency medical helicopters,

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area access, work activities and projects, and requests for and staging of mutual aid assets with the EOC.

The IC and/or EOC provide recommendations to the FSM regarding any necessary changes to plant status (e.g., ventilation, power).

12.2 Incident Command and Field Responders

As discussed in Section 3.3.2, the IC is determined based on the type of incident. Once identified, the IC assumes control of the incident scene following a briefing from the FSM, establishes an ICP, and notifies the CMR of the ICP location. Refer to Support Annex I for additional information on ICS.

Once the IC assumes command, the IC directs all emergency response activities at the emergency scene from the ICP. The IC may request support from technical advisors in various functional disciplines based on the type of incident. This may include coordinating activities of the responding county HAZMAT team, MRTs, ERTs, FD, RCTs, etc. The IC may make additional requests for mutual aid resources if necessary such as additional ambulances, air ambulance helicopters, or other support from offsite responders (e.g., Explosive Operations Disposal, Special Weapons and Tactics).

The local law enforcement or the FBI has overall jurisdiction authority for security/law enforcement incidents occurring on the WIPP. The FBI may choose to assume Incident Command or integrate into the existing incident command structure. FBI Liaisons may report to the ICP and/or EOC to assist and provide guidance on security/law enforcement response activities.

The IC interfaces with the EOC via communications with the EOC Operations Section Chief, EOC Fire/EMS, and EOC Security as well as teleconference calls. Entry/reentry activities are coordinated by the IC with the EOC.

12.2.1 Sequestering Workers

Lead law enforcement and/or Protective Force responders have the authority to sequester personnel during and/or after a law enforcement or security incident. Sequestering is done as directed by the IC in coordination with the EOC and/or FSM. The sequestering of a facility population, or part of a facility population, may be conducted in order to maintain the safety of that facility population, reduce a potential or suspect threat from the event scene, and/or to allow for a controlled location for investigative entities to conduct necessary fact-finding in either the response or early recovery stages.

Investigations or inquiries may be conducted by uniformed onsite or offsite responders, federal investigators, or contractors in the opening stages of an inquiry associated with the incident. As a worker or visitor on a federal installation, it is expected that all persons comply with these investigative or inquiring entities acting in accordance with company, local, state and federal directives, statutes and regulations.

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12.2.2 Care of Injured Personnel

Interfaces between FD EMT personnel and other elements of the ERO are maintained to ensure proper patient care, timely reporting of emergency situations, proper mitigation of emergency incidents, and oversight of EMS protocols. In addition, all ERO personnel comply with the Health Insurance Portability and Accountability Act requirements for patient confidentiality, when applicable.

Firefighter/EMTs interact with workers and other members of the WIPP ERO in a clinical setting as well as during emergency incidents. Working conditions during emergency activities are diverse and potentially hostile (e.g., ambient environmental conditions, HAZMAT, fires) requiring the utmost attention to safety. Firefighter/EMTs may also interact with emergency response professionals from surrounding communities through mutual aid agreements with offsite agencies during routine emergency incidents and large-scale disasters.

Offsite hospitals are notified before arrival of the WIPP ambulance crew via the appropriate radio channel or cellular telephone. During mass casualty incidents the FSM or EOC Fire/EMS (if EOC activated) notifies the Eddy County and Lea County of the mass casualty incident including the number of estimated patients. The counties may advise the FSM or EOC Fire/EMS of the number of patients to transport to the area hospitals, or the assignments may be given directly to the ambulance during communication with the county dispatchers on the EMS radio. For transport of contaminated patients, the CMR or EOC Fire/EMS, if activated, notifies the receiving hospital(s) prior to arrival to allow the hospital maximum preparation time.

12.3 Emergency Operations Center

After the on-call EOC staff has been activated at Level 2 or 3, the CM receives a formal briefing from the FSM on event conditions and outstanding priority actions. Following the briefing and once minimum staffing is achieved, the CM declares the EOC operational and the EOC formally assumes emergency management decision-making responsibilities.

EOC Command Staff as well as EOC Section Chiefs establish communications with their staff and provide/obtain additional event information. The EOC staff reviews the current PAs, PARs, and categorization and classification, as applicable. As more information becomes available through the consequence assessment process event conditions degrade, OE classification may be upgraded and PAs/PARs may be modified.

The EOC coordinates logistical support and acquires resources requested from offsite. Resources integrated into the response are coordinated with the IC. The CM may also approve activation of the Policy Group.

Additional activities performed by the EOC include collecting and tracking accountability of personnel involved in the event, tracking and recording status information on boards and log sheets, identifying and tracking injured personnel from their on-scene treatment

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through to their transport to medical facilities, if applicable. The EOC also works with Human Resources to notify the families of injured personnel.

Notifications to next-of-kin of a fatality during an emergency are coordinated with NWP Human Resources Department through the EOC Finance/Administration Section, when activated, and done in accordance with state law.

If there is a suspected or confirmed HAZMAT release (chemical or radiological), then the Safety-IH or Safety-HP develops a Field Monitoring and Sampling Plan. Once approved by the CM, the Operations Section briefs the Field Monitoring Team and IC prior to deployment.

12.3.1 EOC Action Plan

Action planning in an EOC environment is crucial to effective and efficient operations and is linked with the application of command, control, and leadership principles. The overall purpose of EOC Action Plan is to guide all EOC-related response and support activities to a successful conclusion. The EOC Action Plan is developed and approved based on formal planning phases, which occurs during each operational period.

EOC objectives are developed and updated by the Command Staff and Section Chiefs using the EOC Action Plan Worksheet. The EOC Operations Section integrates and aligns objectives with field objectives set by the IC. The completed EOC Action Plan Worksheets are then provided to the EOC Planning Section for consolidation. The Planning Section develops the draft EOC Action Plan.

The Planning Section Chief will meet with the CM/DCM, Section Chiefs, and other stakeholders as needed to finalize the EOC Action Plan, obtain approval from the CM, and provide an EOC staff briefing on the EOC Action Plan. The Operations Section will brief the IC.

The EOC objectives and associated tasks will be tracked in EOC status board and monitored through completion. Progress should be assessed periodically to ensure tasks are being completed.

The EOC Action plan cycle is illustrated in Figure 12.1 below.

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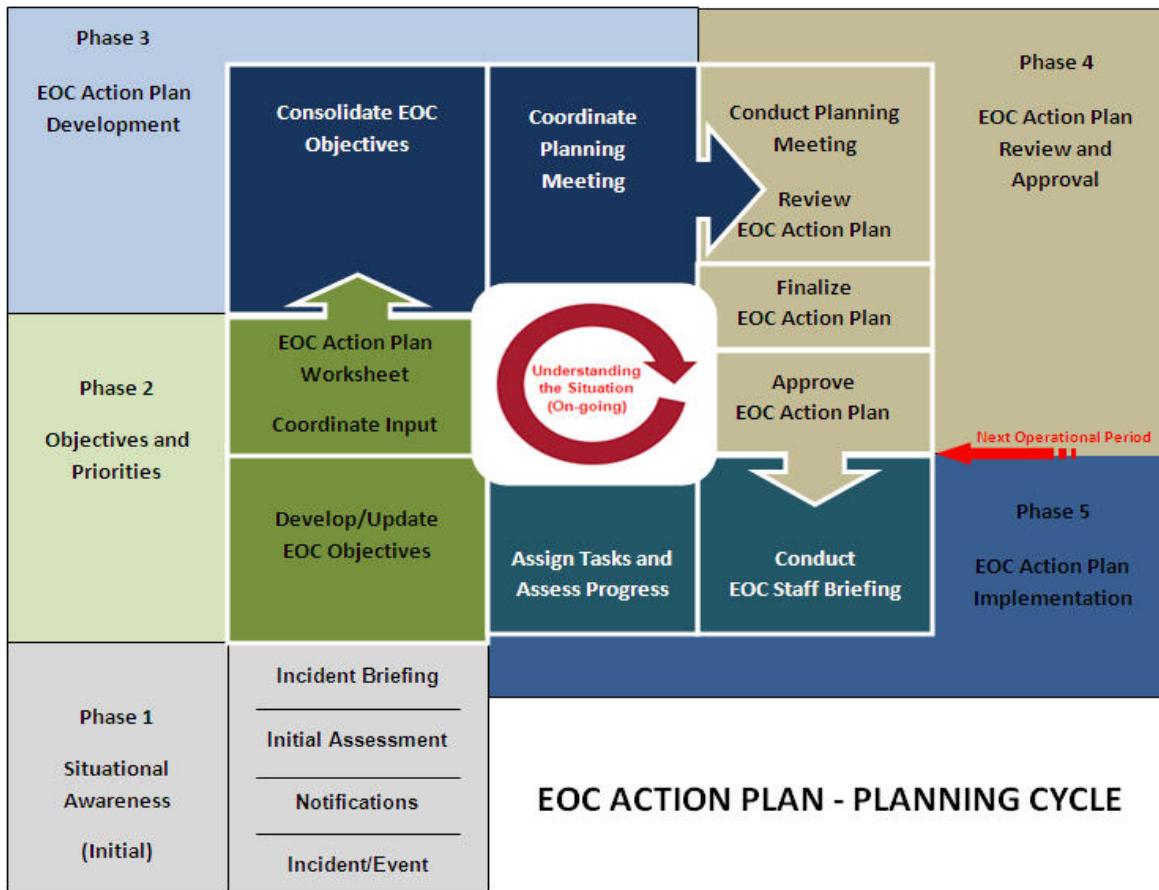


Figure 12.1 - Emergency Operations Center Action Plan Cycle

12.3.2 Internal Notifications/Communications

12.3.2.1 Conference Calls

Conference calls are conducted frequently throughout the emergency among the IC, FSM, EOC, and JIC (if activated). These status reports/calls ensure that all tiers of emergency facilities and responders are aware of ongoing operations and movement toward completing objectives. These calls are also used for coordinating and adjusting the operational timing for communications and briefings. Times for these meetings are set and led by the CM in coordination with the Operations Section Chief who has an understanding of the IC's needs and time constraints.

However, any venue may request that a conference call be held. Although the ERO is responsible for maintaining continuous, effective, and accurate communications throughout an OE, conference calls should be structured not to impede field response operations and safety. The calls should be brief and focus on current event conditions, IC needs, and on-going incident objectives. When the IC is unavailable due to field operations, conference calls can occur without the IC for information sharing.

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A communications schedule is to be posted in the EOC. That schedule should include all briefings, situation report deadlines, notification deadlines, and any other relevant planning process deadlines.

The normal flow of communication is routed through Section Chiefs. For example, the CM should normally communicate with the IC via the EOC Operations Section Chief, Security, or Fire/EMS positions rather than calling the IC directly.

12.3.2.2 WebEOC

WebEOC can be used in the EOC, CMR, JIC, and SOC to share incident information electronically within and between the different venues. WebEOC includes situational awareness boards, resource management boards, drafting and electronic approval of forms and reports, and chat capabilities to assist with near real-time information sharing and communications.

12.3.2.3 Management Notifications

The CM is responsible for communicating with NWP senior management; the CBFO SFO is responsible for communicating with CBFO senior management. Briefings to senior management should be on the posted communications schedule. This assists in managing the expectations of leadership who may not be located on site. If the Policy Group is activated, then they may be invited to participate in the conference calls.

12.3.2.4 Employee Notifications

Initial employee communications occur through the PAS. The EOC is responsible for coordinating with the JIC to provide periodic updates to employees concerning the emergency event. Special communications relating to a specific population (e.g., those affected/potentially affected by the emergency) are coordinated among EOC staff and distributed via the most effective method (e.g., e-mail, social media). These notifications must be approved by the CM prior to distribution.

12.3.3 External Notifications and Interaction

Providing information to external personnel and agencies is a critical responsibility of the EOC. External notifications and situational updates are developed and approved by the CM prior to transmittal according to procedures. If a security incident occurred, then Protective Force and/or law enforcement personnel review the information to ensure the information does not impact any investigation or law enforcement activities.

12.3.3.1 Situation Report

The Situation Report is developed by the Planning Section, reviewed by EOC staff, and approved by the CM and CBFO SFO. The report must be transmitted within two to four hours of the EOC becoming operational. Follow-up reports are generated every four to twelve hours as determined by the CM.

The Offsite Liaison may provide this report to other involved agencies.

12.3.3.2 Continuity of Operations (COOP)/Business Continuity

All incidents have the potential to affect the operations/business of WIPP. Therefore, reports to HQ have to address the ability to continue operations. If operations have been paused, then address the recovery timeframe for restoration of the lost operational activity. The status of COOP/Business Operations will be posted on a board in the EOC and updated as the situation changes.

12.3.3.3 Offsite Liaison Communications

The EOC Offsite Liaison is responsible for initiating and maintaining continuous communications with offsite EOCs or emergency management officials. This is especially critical if the event has been classified as a GE so that the Offsite Liaison can provide additional information and guidance to the offsite EOCs on PARs.

Communications with affected or potentially affected jurisdictional EOCs are prioritized based on impacts. Information provided may include onsite and offsite consequences based on plume models, EALs, degrading conditions, location of release, time before plume arrival, specific areas where PAC may be exceeded, and the relative effectiveness of PARs. These communications can be made one-on-one or by arranging a teleconference with involved parties. Follow-up discussions are held to clarify or provide additional information.

During communications with offsite EOCs and government agencies, the exchange of liaisons may be discussed and/or liaisons may be requested. These requests are approved by the CM. The EOC Offsite Liaison is also responsible for ensuring that the DOE HQ Watch Office is notified and kept updated on the situation.

The CM may periodically establish interfaces with other regional or national EOC decision-makers (e.g., DOE HQ Emergency Management Team Emergency Director, State EOC Director, County EOC Director) to coordinate and discuss key decisions, resource needs, and exchange of critical information, if applicable. All communications with offsite partners must be coordinated with the Offsite Liaison. This will allow for a seamless presentation of the EOC as an effective team.

12.3.4 Shift Turnover

The Planning Section develops a plan for extended operations (usually beyond a 12-hour period) and/or shift cycles as needed to include formal change of command and control and coordinates with the Logistics Section to make arrangements for transportation, meals, and housing, as appropriate. If relief staff or shift coverage is necessary, then the EOC Planning Section obtains concurrence and approval from the CM to activate the next shift of ERO. This process is integrated with the EOC Action Plan cycle.

13.0 TERMINATION AND RECOVERY

The termination process begins when personnel in charge of the response effort determine that conditions are sufficiently stabilized to begin comparing event conditions to pre-established termination criteria. An OE is terminated by the EOC following discussions with the IC.

Recovery planning begins while the EOC and IC are considering termination of the emergency. The recovery phase of emergency management begins once the emergency has been terminated. The EM&S Department Manager will remain engaged with the Recovery Organization.

13.1 Emergency Termination Criteria

Termination can only occur when a predetermined set of criteria has been met. Key factors include the following:

- Assurance that the HAZMAT exposures are stable or decreasing.
- The scene is stable and there is no threat.
- Areas have been isolated for safety as well as scene preservation.
- Injured or contaminated personnel have been taken care of.

Termination Checklist criteria must be reviewed to assess the conditions at the scene according to procedures. This review is typically conducted between the IC, EOC, and Policy Group, if activated. For GEs, the Offsite Liaison must receive concurrence on the recommended termination from offsite agencies involved in the response prior to terminating the emergency.

The emergency cannot be terminated until the Preliminary Recovery Plan Outline and termination Emergency Notification Form have been developed and approved and the Termination Checklist has been completed.

13.1.1 Preliminary Recovery Plan Outline

The Preliminary Recovery Plan Outline is completed according to procedures in order to initially identify recovery activities, objectives, and a recovery organization who will oversee the recovery operation. This plan provides the recovery organization with a starting point.

The Preliminary Recovery Plan Outline is made up of two sections. One section identifies overall recovery plan strategies in the areas of safety, notifications and communications to onsite and offsite personnel, event documentation, infrastructure assessments, environmental assessments, COOP, financial assessments, lessons learned, and security actions. The second section identifies recovery organization personnel by functional area such as security, emergency management, operations, legal, maintenance, finance, and IH, or HP.

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When review of Termination Checklist criteria has begun, the EOC Planning Section begins developing the Preliminary Recovery Plan Outline with input from the EOC, IC, and technical SMEs identified. The CM may waive the requirement to develop a Preliminary Recovery Plan Outline for OENRCs, based on the need for and complexity of recovery from the effects of the hazard. The EOC Planning Section also develops the termination Emergency Notification Form.

As part of the Preliminary Recovery Plan Outline, CBFO appoints a CBFO Recovery Manager to coordinate with and oversee recovery activities. The CM appoints a Contractor Recovery Manager to lead the Recovery Organization.

Once the Preliminary Recovery Plan Outline and termination Emergency Notification Form have been approved, then the CM may approve termination of the emergency event and the notification is disseminated. When the emergency is terminated, responsibility for recovery and clean-up is transitioned from the EOC to the Contractor Recovery Manager.

13.1.2 Joint Information Center Deactivation

Following termination of the emergency, the JIC will enter a deactivation and recovery phase. The decision to deactivate will be made by the DOE Spokesperson in conjunction with the JIC Manager, EOC CM (if activated), and offsite agency representatives in the JIC. The news media will be notified by the DOE Spokesperson or JIC Manager in the final JIC news conference that the JIC is being deactivated. News media will be referred to the DOE and its contractor communication representatives for follow-up questions about the incident.

13.2 Recovery

Termination of the emergency signals transition from the emergency phase into the recovery phase. Recovery includes those actions necessary to return an incident area and the surrounding environment to pre-emergency or an agreed upon safe condition. The recovery phase begins before emergency termination with the completion of the Preliminary Recovery Plan Outline and ends when the facility is returned to its pre-emergency operational state or some agreed upon state of normal operations or safe configuration.

Upon termination of the emergency, the ERO is replaced by the recovery organization to manage and implement the recovery plan. The recovery organization reports to the CBFO-appointed WIPP Recovery Manager who oversees the recovery efforts. The Contractor Recovery Manager is responsible for managing the recovery organization and ensuring that recovery and post-emergency activities occur according to the plan. If the emergency produced offsite impacts, then the recovery organization should include a liaison for offsite interface with the state and local agencies to assist in the development and implementation of recovery actions. This position should have management authority commensurate with the requirements of the recovery activities.

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Recovery operations related to an OE must be reviewed by the responsible WIPP Recovery Manager and approved by the WIPP Project Manager or designated representative before they are initiated.

As applicable, when the condition under which a dose was received in excess of the limits specified in 10 CFR 835.202 has been eliminated, operating management shall notify and obtain approval from the WIPP Operations Department Manager before resuming facility operations.

13.2.1 Final Recovery Plan

The CBFO approves the requested timeline for the development of the Final Recovery Plan. The NWP Manager then accepts the timeline and tasks the Contractor Recovery Manager with development and execution of the Final Recovery Plan. The Final Recovery Plan addresses all the items listed in the Preliminary Recovery Plan Outline and must be approved by the WIPP Recovery Manager and the WIPP Project Manager with final approval by the CBFO Manager. EM&S maintains the official record copy of the WIPP Final Recovery Plan.

13.2.2 Final Emergency Report

Upon termination of the emergency, the EOC conducts a debriefing of EOC operations and activities with the EOC Staff. This information is included in the Final Emergency Report for an actual event. All Activity Logs, forms, checklists, news releases, and other documents resulting from the activation of the EOC and/or the JIC will be provided to EM&S for retention and inclusion in the Final Emergency Report, as applicable.

The Final Emergency Report is assembled by EM&S Department and submitted to management for review and concurrence prior to submission to the CBFO in conjunction with the Final Occurrence Report prepared according to occurrence reporting procedures and DOE Order 231.1B, *Environment, Safety, and Health Reporting*. The report is submitted to CBFO 45 calendar days after initial categorization of the occurrence. The report must contain an executive summary; ERO participation list; notifications, reports, and press releases generated; a response summary, lessons learned, and other issues identified.

The CBFO makes appropriate submissions to DOE HQ Program Secretarial Officer(s) and the Director, Office of Emergency Operations in accordance with DOE O 151.1C. The EM&S Department maintains the official record copy of the Final Emergency Report and it is maintained as a permanent record.

14.0 TRAINING

NWP provides a combination of formal classroom or self-paced instruction, on-the-job training, drills and exercises, and/or a qualification system to all of the ERO, including the JIC. The purpose of this training is to ensure safety during emergency responses and to provide skilled emergency management and response personnel to efficiently and effectively respond to an emergency incident. The CBFO Emergency Management Program Manager ensures emergency management-related training is developed and conducted.

The WIPP Emergency Management Training Program has been established to provide training to support WIPP ERO needs and to provide ERO personnel with basic knowledge of EM topics, fundamentals, and responsibilities while meeting regulatory requirements. The program also provides general instruction for all WIPP personnel on the proper response to emergencies and alarm signals and provides Controllers/Evaluators with effective training that will enable them to adequately control and evaluate drills and exercises.

As part of the program, EM&S has designated an ERO Training Officer to ensure that training courses are developed and coordinated with WIPP Technical Training using the Systematic Approach to Training methodology. ERO qualifications and training are reviewed biennially and updated, if applicable, to reflect changes to the facility, procedures, regulations, and requirements and to enhance performance and competency of the ERO members.

Emergency Management drill findings, commitment tracking items, lessons learned, procedural changes, program changes, and other proposed/recommended training program changes are reviewed and evaluated to determine whether revisions to WIPP ERO training courses are needed. The EM&S Manager and Technical Training Manager are required to review and approve all changes to the training program, and the Emergency Management Section Manager and Technical Training Manager review and approve lesson plans for the ERO to ensure that the training program is not degraded.

The ERO training provides trainees with the following:

- Theoretical knowledge applicable in performing their emergency management functions
- Organizational knowledge required for understanding their duties, functions, and responsibilities
- Organizational knowledge required for understanding their interface with other team members for completing functional activities
- Organizational knowledge required for understanding potential issues involved with the span of organizational control that may need to be addressed early to ensure that the ERO efficiently and effectively handles emergency events

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- Proficiency in the performance of ERO functional duties or activities identified within the emergency management program and associated plans and implementing procedures
- An understanding of the emergency exposure control program

14.1 Courses

The list of courses and course information is maintained by NWP Technical Training. The main ERO training course and NIMS information is listed below:

- EM-100, Emergency Response Organization Overview Training
 - Target Audience: EOC and FSMs
 - Frequency: One time only
 - Presentation Method: Classroom
 - Program Description: This course provides an overview of external and internal requirements documents, training, drills and exercises; ERO components and venue communications; NNSS emergencies, PAs, and PARs; OEs and the IRG; and emergency response concepts.
- IS-100b, FEMA National Incident Management System (NIMS) Introduction to the Incident Command System
 - Target Audience: ERO members
 - Frequency: One time only
 - Presentation Method: Self-paced, interactive, web-based course
 - Program Description: This course describes concepts and principles of the ICS, to include the five functions of the ICS, agencies, structure, and key terms.
- IS-200b, FEMA NIMS ICS for Single Resources and Initial Action Incidents
 - Target Audience: Select ERO members
 - Frequency: One time only
 - Presentation Method: Self-paced, interactive, web-based course
 - Program Description: This course is designed to enable personnel to operate efficiently during an incident or event within the ICS. It provides training on and resources for personnel who are likely to assume a supervisory position within the ICS.

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- IS-300, FEMA Incident Command System (ICS) Intermediate
 - Target Audience: Select ERO members
 - Frequency: One time only
 - Presentation Method: Classroom
 - Program Description: This course is designed to enable personnel to operate efficiently during an incident or event within the ICS. It provides training on and resources for personnel who are likely to assume a supervisory position within the ICS.
- IS-400a, FEMA Incident Command System (ICS) Advanced
 - Target Audience: Select ERO members
 - Frequency: One time only
 - Presentation Method: Classroom
 - Program Description: This course is designed to enable personnel to operate efficiently during an incident or event within the ICS. It provides training on and resources for personnel who are likely to assume a supervisory position within the ICS.
- IS-700a, FEMA National Incident Management System (NIMS), Awareness Training
 - Target Audience: Select ERO members
 - Frequency: One time only
 - Presentation Method: Self-paced, interactive, web-based course
 - Program Description: This course introduces the NIMS and describes the purpose, principles, key components, and benefits of NIMS. The course also contains “planning activity” screens giving the student an opportunity to complete some planning tasks during the course.
- IS-800b, FEMA/NIMS National Response Framework, An Introduction
 - Target Audience: Select ERO members
 - Frequency: One time only
 - Presentation Method: Self-paced, interactive, web-based course
 - Program Description: This course introduces participants to the concepts and principles of the National Response Framework. Topics include the purpose of the framework, response doctrine, roles and responsibilities, actions supporting national response, and planning for national preparedness.

14.2 Training Requirements

ERO training requirements for the respective emergency response and support groups are listed in the Emergency Management Training Program documents. The training requirements identified are in addition to any training required for their normal jobs, by other WIPP programs, or to meet regulatory requirements. All ERO personnel will receive either an overview or awareness level ERO training. In addition, selected positions are required to complete NIMS classes as well as position-specific training. Refresher training includes, as necessary: changes to the program and/or procedures; lessons learned from drills, exercises, or events; lessons learned from other facilities, and other topics as specified by the EM&S Manager.

14.3 Examinations

Following the Systematic Approach to Training, formal training courses require successful completion of written and/or performance examinations. Validation of tasks is achieved through performance in drills and exercises and completion of required activities and training.

ERO training includes written and/or practical exams (e.g., Job Performance Measures, authorization cards) and to determine the students' level of retention of the enabling objectives. All exams are developed, controlled, and administered according to Technical Training procedures.

14.4 Record Keeping

Training records for the ERO are processed and maintained by Technical Training according to procedures. ERO training records will be made available for review by the EM&S manager (or designee) or CBFO Emergency Management Program Manager (or designee) upon request.

Training records will include, but are not be limited to, initial and refresher course attendance, exam results, participation in drills and exercises, and other evaluations of skills and knowledge. Personnel who obtain training from an offsite or online entity must provide documented evidence of the training to Technical Training.

14.5 Offsite Training Support

Offsite training may substitute or complement existing internal training with the approval of the Technical Training Manager and the EM&S Manager or CBFO Emergency Management Program Manager for CBFO employees.

14.6 Offsite Personnel Training

Offsite personnel may attend WIPP ERO training with the approval of the EM&S Manager or CBFO Emergency Management Program Manager.

14.7 Instructor Training and Qualification

Instructors providing formal training at WIPP will be qualified in accordance with Technical Training requirements (Level I - Subject Matter Expert, Level II - Classroom Instructor, or Level III - Classroom, Evaluation, and Performance-Based Training).

15.0 EXERCISES AND DRILLS

EM&S is responsible for conducting exercises in support of the CBFO Emergency Management Program. The Drill and Exercise programmatic elements are designed to provide training, examine personnel response and activity, notifications, implement procedures, and evaluate the effectiveness and capabilities of the entire WIPP ERO. The overall goal of the Drill and Exercise Program is to identify opportunities for continued improvement as required by DOE O 151.1C.

A coordinated program of drills and exercises is an integral part of the WIPP EMP. EM&S establishes and maintains a formal Drill and Exercise Program that validates all elements of the WIPP EMP over a five-year period. The CBFO Emergency Management Program Manager provides oversight to the NWP Drill and Exercise Program.

In lieu of actual emergency incidents, drills, and exercises validate both facility- and site-level EMP elements by initiating a response to a simulated, realistic event or condition in a manner that replicates an integrated response to an actual event. Some smaller response elements may be validated in larger scope drills, exercises, events, as practicable.

EM&S develops and conducts drills and exercises following a structured and coordinated process according to plans and procedures. This process also incorporates document content requirements for events, drills, and exercises. The CBFO Emergency Management Program Manager or designee is invited to participate as part of the drill and exercise planning team.

Members of the ERO are required to participate in at least one drill or exercise annually to demonstrate proficiency in assigned response duties and responsibilities. Drill and exercise participation (i.e., players, controllers, and evaluators) for designated positions is documented and the records may be provided to Technical Training for inclusion into the individuals' training records.

15.1 Drills

Drills are supervised hands-on training used to develop and maintain personnel skills, expertise, and response capabilities. Drills are of sufficient scope and frequency to ensure adequate response capabilities in all applicable areas. Drills are also designed to address specific activities within the mission of WIPP (e.g., notification, categorization and classification, emergency communication, fire and medical response, HAZMAT detection and monitoring, security events, personnel accountability and evacuation, decontamination, public information, HP).

Drills can vary in complexity from a fire drill with a single objective to an integrated response with multiple objectives. ERO drills may be used to:

- Provide insight to an organization's capability to respond effectively to an emergency

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- Maintain proficiency, resolve deficiencies, improve performance and/or mentor individuals in specific ERO functional areas
- Prepare for exercises
- Validate facility or company plans and procedures
- Resolve deficiencies or develop improvements in specific functional areas of concern identified in previous exercises
- Document closure of corrective actions required because of audits, exercises, or similar activities

Drills are not formally evaluated events; however, a group of controllers under the guidance of the Senior Controller may be used during each drill to ensure that events occur which address the objectives of the drill. The drill should not be terminated, unless there are safety/facility/management issues until all participants have been provided the opportunity to demonstrate the listed objectives. The controller group assesses the performance of the drill participants against the objectives.

Building evacuation drills are conducted annually according to plans and procedures to ensure that employees are able to take PAs and collect accountability.

15.1.1 Drill Critiques

Critiques or “hotwashes” are conducted after every drill. This provides a forum for the review of the events, decisions, and actions taken by the drill participants to demonstrate the stated objectives in the drill scenario and an opportunity for the drill players to self-assess their decisions and actions that resulted based on the drill scenario.

Although the critique is facilitated by the Lead Controller, the players are provided an opportunity to discuss what they thought went well and what may not have been up to expectations. After the players have had an opportunity to provide their input, the controllers will provide their feedback and observations. This process also provides an opportunity for players to indicate any improvements could be made to the response procedures, the emergency response facilities, and the available equipment.

Drill critiques are most useful when they are held immediately following the drill to ensure that all drill participants have an opportunity to provide their perspective on the drill response while it is fresh in their minds.

The critique is used as a basis for the drill After Action Report and for lessons learned to be provided to the remainder of the ERO that may not have participated in the drill.

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15.1.2 Drill After Action Reports

A formal report containing a summary of the drill scenario/response actions and any findings is created and retained for each drill. Drill after action reports will be provided to the CBFO Emergency Management Program Manager as requested. Issues discovered during the drill that need specific attention may be tracked through the site issues management system. Performance issues corrected by the controllers during the drill are included in the report and not generally entered as WIPP Forms.

15.1.3 Corrective Actions

WIPP Forms are used to document issues, which are reviewed by a management committee and assigned to a responsible manager in order to develop a corrective action plan. The corrective action plan should be developed as required by the WIPP Form process.

15.2 Exercises

Exercises are designed and conducted to be as realistic as possible and to duplicate the stress inherent during an actual emergency situation. The emergency scenarios used are developed using the WIPP EPHA. All radio, telephone, and written communications must be labeled and be preceded by and concluded with the phrase, "This is an Exercise," as appropriate.

Exercises test the adequacy and effectiveness of NWP plans, procedures, and facility support systems and measure the following capabilities based on DOE G 151.1-3:

- Safety
- ERO
- Command, Control, and Leadership
- PAs, Reentry, and Accountability
- Categorization and Classification
- Notifications and Communications
- Consequence Assessment
- PAs
- EPI
- Emergency Termination and Recovery
- Exercise Planning and Conduct
- Emergency Facilities and Equipment
- Medical Support
- Offsite Interface

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Adequate time is allowed for planning each exercise to ensure effective preparation and review of the Exercise Plan. Exercise plans should include scope, specific objectives, scenario narrative, design and development guidelines, safety and security planning, timeline, and exercise data.

A control group is used for each exercise to ensure that events occur which address the objectives of the exercise. An evaluation group is used to assess the performance of the exercise participants and controllers against the stated objectives. A single individual may act as both a Controller and an Evaluator, as needed. Exercise performance is graded by the evaluators according to the objectives and under the guidance of the Exercise Director.

An actual event that is declared an OE may substitute for an exercise, if approved by the CBFO and DOE HQ. To receive credit, a critique and a Final Emergency Report must be completed.

15.2.1 Exercise Types

Several types of operations-based exercises are conducted. Operations-based exercises are characterized by an actual response, mobilization of apparatus and resources, and commitment of personnel over an extended period of time. Operations-based exercises include Functional Exercises, Full Scale Exercises, Full Participation Exercises, and No-Notice Exercises.

- **Functional Exercises**

Functional Exercises are designed to test and evaluate individual capabilities, multiple functions or activities within a function, or independent groups of functions. Most movement of personnel and equipment is simulated or is very limited. The facility exercises are designed to test and demonstrate the emergency response capability of the facility and selected ERO elements.

- **Full Scale Exercises**

Full Scale Exercises are very complex and test many aspects of an integrated emergency response. These exercises focus on implementing, analyzing, and evaluating plans, policies, and procedures. They are conducted in a real-time, stressful environment that closely mirrors a real event. First responders and resources are mobilized and deployed to the scene where they conduct their actions as if a real incident had occurred, as realistically as possible.

Full Scale Exercises simulate the reality of operations in multiple functional areas by presenting complex and realistic problems requiring critical thinking, rapid problem solving, and effective responses by trained personnel in a highly stressful environment.

The level of support needed to conduct a Full Scale Exercise is greater than needed during other types of exercises. The exercise site is usually extensive

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with complex site logistics. Depending on exercise variables, participants and volunteers may require food and water. Safety issues, including those surrounding the use of props and special effects, must be closely monitored.

DOE-HQ and the CBFO are notified of, and may participate in, the annual exercise. EM&S may extend a written invitation to mutual aid agreement offsite agencies to participate in the annual WIPP full-scale exercise.

- **Full Participation Exercises**

Full Participation Exercises are similar to Full Scale Exercises, with the addition that offsite EROs must be invited to participate and an external DOE evaluation may be included. DOE HQ may participate in this exercise. A Full Participation Exercise is required every 3 years. Other response organizations shall be invited to participate in the site-wide exercises at least once every three years.

- **No-Notice Exercises**

No-Notice Exercises are conducted in concert with and at the discretion of NA-41, to determine if the facility/site or activity ERO accomplishes selected objectives, based on applicable plans, procedures, and/or other established requirements. Although generally considered an operations-based exercise, No-Notice Exercises can use the discussion-based exercise format if the objectives can be accomplished. Facility involvement is limited to providing trusted agents, control and evaluation, and response during the exercise.

The primary purpose of the No-Notice Exercise Program is to provide an objective test of the ability of key elements of the emergency response capabilities to respond without prior notice to a simulated OE.

15.2.2 Exercise Participants

Key participants in the planning, development, conduct, and documentation of exercises include the Exercise Director, Lead Exercise Planner, Exercise Planning Team Members, Players, Actors, Controllers, Evaluators, and Observers. All participants (Controllers, Evaluators, and Observers) who are not Players wear vests or another specific item that identify their positions.

15.2.3 Exercise Critiques

Critiques or “hotwashes” are conducted after every exercise. This provides a forum for the review of the events, decisions, and actions taken by the exercise players to demonstrate the stated objectives in the exercise scenario and an opportunity for the exercise players to self-assess their decisions and actions that resulted based on the exercise scenario.

Although the critique is facilitated by the Lead Controller, the players are provided an opportunity to discuss what they thought went well and what may not have been up to

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expectations. After the players have had an opportunity to provide their input, the controllers will provide their feedback and observations. This process also provides an opportunity for players to indicate any improvements could be made to the response procedures, the emergency response facilities, and the available equipment.

Exercise critiques are most useful when they are held immediately following the exercise to ensure that all exercise participants have an opportunity to provide their perspective on the exercise response while it is fresh in their minds.

Information from the critique may be included in the exercise After Action Report and for lessons learned to be provided to the remainder of the ERO that may not have participated in the exercise.

15.2.4 Evaluation

The evaluation process assesses the performance of the ERO and the adequacy of equipment, facilities, and resource documents used by responders. The evaluation is made by comparing performance against predetermined and documented evaluation criteria, based on requirements, site plans, and procedures.

Controllers and Evaluators are provided formal training and must participate in at least one exercise per year to maintain their qualification. Controllers and Evaluators are also provided with a briefing on each specific exercise they will be participating in.

The Lead Exercise Planner is responsible for ensuring a proper exercise evaluation and ensures that a critique/hotwash is conducted at each participating facility or location (e.g., ICP, EOC, JIC) following termination of the exercise. These are usually led by a Controller and are a forum for Players to provide comments on positive and negative aspects of the exercise and suggestions on improving the processes.

Comments from Players, Evaluators, Controllers (and possibly Observers) are consolidated by the Lead Exercise Planner, in addition to evaluation information from any external organizations that evaluated the exercise, as applicable.

Evaluators provide the Lead Exercise Planner the following information for the development of the After Action Report:

- Legible/typed copy of the Evaluator's Exercise Chronology Data Sheet (timeline)
- Completed Exercise Evaluation Guide including the following:
 - Narrative Summary
 - Findings (Deficiencies/Weaknesses)
 - Improvement Items
 - Superior Performances

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15.2.5 Exercise After Action Report

All Activity Logs, forms, checklists, news releases, and other documents generated by the EOC and/or JIC resulting from the exercise are provided to the Lead Exercise Planner for retention and inclusion in the After Action Report, as applicable.

The Lead Exercise Planner uses the consolidated evaluation information and supporting documentation to develop an After Action Report. Once the report has been drafted, Evaluators and Participants review the report for factual accuracy.

Evaluator findings are reviewed to ensure that Players were measured against the evaluated organization's current plans and procedures. The Exercise Director or Deputy Exercise Director has final authority for determining if evaluation criteria were "Met" or "Not Met."

The completed After Action Report is submitted to the CBFO Emergency Management Manager for approval no later than 30 working days following the exercise. The After Action Report is then made available to all ERO personnel.

Based on exercise after action report results, NWP and CBFO management may be provided a summary briefing to review the exercise findings, opportunities for improvement, and observations.

15.2.6 Corrective Actions

The Lead Exercise Planner develops corrective action recommendations for issues identified during the exercise in coordination with responsible managers and other key stakeholders. Because perceptions of processes may differ during evaluations, findings may be adjusted or leveled to achieve the most effective and complete corrective actions.

The WIPP Form process is used to document and track the issues and corrective actions, including review by an independent management committee. The corrective action plan should be developed as required by the WIPP Form process, but not to exceed 60 days from the final exercise evaluation. The CBFO-specific findings are coordinated with the CBFO Emergency Management Program Manager.

Previous exercise issues that have been verified as closed through the WIPP Form process are incorporated into subsequent exercise plan evaluation criteria and evaluated during exercise conduct to validate that the corrective action was effective in resolving the original issue. The result of the previous exercise issue validation process is formally tracked and documented in the After Action Report.

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15.3 Offsite Coordination

DOE HQ is notified of the exercise schedule for each fiscal year and a copy of each site-level exercise plan is sent to appropriate DOE HQ stakeholders. The CBFO coordinates with DOE HQ to determine if they are interested in participating or evaluating an exercise.

Offsite agencies and organizations that provide mutual aid to WIPP during emergencies are notified of the intent to hold a full participation exercise with offsite participation.

16.0 READINESS ASSURANCE

The WIPP Emergency Management Readiness Assurance Program incorporates the ongoing process of verifying and demonstrating readiness to respond to emergency situations and provides a means for continuous improvement of the overall program. The program also ensures WIPP compliance with DOE O 151.1C and regulatory requirements that procedures, processes, and resources are adequate and sufficiently maintained, exercised, and evaluated; and that improvements are made as needed or required.

The readiness assurance program consists of evaluations and assessments, improvements, and documentation. WIPP Emergency Management conducts various program evaluations, such as assessments, exercises and drills, and reviews of performance indicators and associated performance trends according to the program plan.

16.1 Self-Assessment

NWP self-assessments include an in-depth look at the Emergency Management program and include document reviews, evaluations of operation/use of response tools, interviews, observations, and verification of training and participation records. Emergency Management develops and performs self-assessments according to a predetermined and approved annual assessment schedule and procedures. Selected criteria from each DOE Emergency Management Program Element are assessed annually, with the requirement that all criteria of all elements be assessed within a three-year period. These assessments include management assessments in conjunction with exercise evaluations.

Plan evaluations identify both strengths and shortcomings in the planning and preparedness activities associated with the program. Shortcomings are documented as formal findings and entered onto a WIPP Form. Self-assessments and results will be managed in accordance to the risk level associated with the activities being evaluated. Findings (deficiencies and weaknesses) will be documented and tracked for evaluation and corrective action purposes using the process defined in procedures.

16.2 Field Element Assessment

The CBFO also performs periodic oversight assessment reviews of contractor/user programs, processes, or activities at locations under CBFO purview to determine levels of compliance or performance in meeting requirements, with focus and frequency managed by CBFO. The CBFO provides their evaluation schedule to the Program Secretarial Officer, with an oversight assessment performed at least once every three years.

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An assessment report is completed by CBFO and submitted to the Program Secretarial Officer and the Director, Office of Emergency Operations within 30 working days. A corrective action plan will then be developed within 30 working days of the report being submitted. The assessment documentation is maintained by the CBFO Emergency Management Program Manager.

16.3 Corrective Action Program

Emergency Management is responsible for the documentation and implementation of issues and corrective actions taken as a result of findings from drills, training, program and exercise evaluations, self-assessments and external assessments, and particularly those from actual responses. In addition, formal documented corrective actions can be developed for employee concerns regarding Emergency Management activities and procedures. The issues management and corrective action process includes the preparation, implementation, verification, and validation of corrective actions.

The Contractor Assurance System is implemented according to procedures and WIPP Forms are used for the initiation, tracking, resolution, and closure of issues and corrective actions. Emergency Management will implement the WIPP Form process to track and trend all issues, including findings, deficiencies, weaknesses, observations, and opportunities for improvement.

WIPP Forms are reviewed by an independent management committee to ensure that the issue is assigned to the appropriate manager(s) for resolution, that the issue is assigned an appropriate significance/action level, and that the corrective actions proposed by the responsible manager appropriately address the issue. The issue is then tracked to closure according to the WIPP Form process.

When corrective actions are considered complete, a closure package that includes supporting documentation/objective evidence is submitted. The closure package is reviewed by a management committee for significant issues and adverse conditions, and the closure is approved if closure documentation provides objective evidence that the corrective actions have been completed.

Once the corrective action completion has been verified and the WIPP Form for the issue has been closed, the issue will be validated as corrected through drills, exercises, and/or assessments to ensure the corrective action was effective in resolving the original issue. The results of the validation will be documents as part of the After Action Report or assessment report, as applicable.

16.4 Lessons Learned Program

Lessons learned will be developed based on deficiencies and may also be developed based on observations, opportunities for improvement, and notable good practices identified during actual events, exercises, drills, and program evaluations according to the Operating Experience/Lessons Learned Program.

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These Lessons Learned as well as those shared by DOE and industry operating experiences, are distributed to the ERO through training, drills, reading and acknowledging e-mails, and the Lessons Learned Database. In addition, periodic additional searches of EM Lessons Learned from resources external to the DOE Operating Experience program may be incorporated accordingly to maintain a persistent focus on continuous improvement.

Lessons learned from operating experience are submitted to the DOE Corporate Lessons Learned Database when both (1) the operating experience has relevance to other DOE facilities, sites, or programs; and (2) the information has the potential to help avoid adverse operating incidents, for performance improvements, or for cost savings. For classifiable OEs, lessons learned requirements are also followed according to DOE O 210.2A, *DOE Corporate Operating Experience Program*.

The CBFO Operating Experience Program Coordinator serves as the point-of-contact for the CBFO Corporate Operating Experience Program determining, with the help of SMEs, the applicability and significance of internal and external operating experiences and distributes products, as applicable, for review, analysis, and potential action.

16.5 Emergency Readiness Assurance Plan

The Emergency Readiness Assurance Plan (ERAP) is documented assessment of the development, implementation, and maintenance of the Emergency Management program required by DOE O 151.1C. The ERAP documents the annual assessment of readiness activities and serves as consolidated documentation that the emergency planning and preparedness activities by which the Emergency Management program is ready to respond.

The report identifies what the goals were for the fiscal year just ending, the degree to which the goals were accomplished, and the goals for the upcoming fiscal year. This serves as the baseline document for emergency readiness assurance evaluations and as a planning tool to identify and develop necessary resources and improvements. The ERAP also includes WIPP COOP data.

The ERAP is prepared and submitted to CBFO for approval annually by September 30. CBFO incorporates the NWP ERAP into an overall ERAP for CBFO/WIPP that is submitted it to DOE Headquarters annually by November 30.

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17.0 PLAN ADMINISTRATION

17.1 Emergency Management Plan Administrator

CBFO provides oversight for the Emergency Management Program. EM&S Department Manager serves as the EMP Administrator and implements the program in accordance with DOE O 151.1C. The EMP is submitted to CBFO for approval. The CBFO Manager approves the EMP and submits the approved plan to the Director, Office of Emergency Operations and the Program Secretarial Officer(s).

WIPP EMP requirements include:

- Develop and maintain up-to-date emergency management documents, plans, and procedures and coordinate submission of documents such as the EPHS and EPHA.
- Ensure that documents are updated when needed or required; required supporting information is maintained; and adequate documentation of all technical data supporting the overall EMP is maintained and provided to the CBFO.
- Coordinate readiness assurance activities including self-assessments and emergency resources.
- Ensure the development and maintenance of auditable emergency management records.
- Establish and maintain a corrective action program that tracks open actions, establishes an integrated site plan for correction, and verifies correction of findings from drills, exercises, and actual responses.
- In addition, for each facility, operation, and activity involved in producing, processing, handling, storing, or transporting HAZMAT (radioactive and chemical) that has the potential to pose a serious threat to workers, the public, or the environment, NWP, as the site Management and Operating Contractor, accepts a responsibility to:
 - Identify and analyze the hazards that may result from an unplanned release of HAZMAT.
 - Strive to prevent unplanned releases of HAZMAT from the WIPP facility.
 - Take any steps necessary to prevent releases.
 - Use feasible means to eliminate or materially reduce the hazard to workers and the public.

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- Additional responsibilities of the NWP EM&S Department Manager include:
 - Develop and maintain the EMP and submit to the CBFO for review and approval.
 - Develop and conduct ERO-specific training, drill, and exercise programs.
 - Develop a consolidated annual WIPP ERAP and process.

17.2 Emergency Plan Update and Document Control

The EMP is reviewed annually by the EM&S Manager and the CBFO Emergency Management Program Manager and is updated as necessary in compliance with DOE O 151.1C and regulatory requirements. An update is required when significant changes to government policy, regulatory requirements, emergency plans, site operations, implementing procedures, mutual aid agreements, and lessons learned affect the EMP. Documentation and the list of controlled copy distribution locations for the EMP and the implementing procedures are maintained by Document Services.

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18.0 REFERENCES

DOCUMENT NUMBER AND TITLE
Title 10 <i>Code of Federal Regulations</i> (CFR) Part 835.202, "Occupational Dose Limits For General Employees"
10 CFR Part 835.901, "Radiation Safety Training"
29 CFR Part 1910.38, "Emergency Action Plans"
40 CFR Part 302, "Designation, Reportable Quantities, and Notification"
United States Code, Title 33, Chapter 26, Section 1321, <i>Oil and Hazardous Substance Liability</i>
DOE G 151.1-2, <i>Technical Planning Basis</i>
DOE G 151.1-3, <i>Programmatic Elements</i>
DOE O 151.1C, <i>Comprehensive Emergency Management System</i>
DOE O 210.2A, <i>DOE Corporate Operating Experience Program</i>
DOE O 231.1B, <i>Environment, Safety, and Health Reporting</i>
DOE O 232.2, <i>Occurrence Reporting and Processing of Operations Information</i>
DOE O 440.1A, <i>Worker Protection Management for DOE Federal and Contractor Employees</i>
U.S. Department of Homeland Security, <i>National Incident Management System</i>
U.S. Department of Homeland Security Presidential Directive (HSPD)-5, <i>Management of Domestic Incidents</i>
U.S. Environmental Protection Agency (EPA) 400-R-92-001, <i>Manual of Protective Action Guides and Protective Actions for Nuclear Incidents</i>
Public Law 99-499, <i>Superfund Amendments and Reauthorization Act</i> , Title III, <i>Emergency Preparedness and Community Right-to-Know Act</i>
Public Law 104-191, <i>Health Insurance Portability and Accountability Act of 1996</i>
U.S. Food and Drug Administration Center for Devices and Radiological Health, <i>Accidental Radioactive Contamination of Human Food and Animal Feeds: Recommendations for State and Local Agencies</i>
Hazardous Waste Facility Permit, EPA Identification Number NM4890139088-TSDF
DOE/WIPP-08-3378, <i>Waste Isolation Pilot Plant Emergency Planning Hazards Assessment</i>
WP 12-RP.01, <i>U.S. Department of Energy Waste Isolation Pilot Plant Planning Hazards Survey Report</i>
WP 12-10, <i>WIPP Incident/Accident Response Team Plan</i>

Attachment 1 – Support Annex – Incident Command System

SUPPORT ANNEX I – INCIDENT COMMAND SYSTEM**1.0 Introduction**

The ICS is a standardized, on-scene, all-hazards incident management approach that promotes integration and coordination of responders and resources. ICS is flexible and can be used for incidents of any type, scope, or complexity. ICS is extremely useful by providing an organizational structure for incident management and guiding the process for planning, building, and adapting that structure. Using ICS for every incident or planned event helps hone and maintain skills needed for large-scale incidents.

The IC develops the ICS to reflect the organizational needs of the incident to achieve the completion of the tactical priorities and incident objectives.

1.1 Purpose

The purpose of an ICS is to provide structure and coordination for the management of emergency incident operations, while considering the safety and health of emergency services personnel and other persons involved in those activities. The purpose of this annex is to apply ICS principles to assure smooth operations at an incident with the highest amount of personnel safety.

The Emergency Response Organization (ERO) responds to a wide range of emergency incidents. In order to effectively manage personnel and resources, and to provide for the safety and welfare of personnel, the ERO always operates within the ICS at the incident scene. This annex describes the ICS process used to establish an integrated operational and emergency management structure for the ERO in accordance with the NIMS.

1.2 Scope

This document applies to all organizations, including research organizations, at the WIPP site involved with responding to an emergency event and/or establishing incident command at WIPP. ICS will be used to manage events onsite and when responding to emergencies with mutual aid agreement offsite agencies. Emergency responders, control room staff, shift managers, and the EOC will use ICS to manage emergencies, abnormal occurrences, and planned special events.

1.3 Concept of Operations

The most qualified first responder at the scene of the emergency becomes the IC and directs activities at the incident scene. The IC implements an oral or written IAP and maintains ongoing communication with the CMR and/or EOC, if operational.

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The NIMS structure allows for the integration of community mutual aid resources to supplement response units. Offsite agencies supporting response efforts typically integrate into the Unified Command Structure, using individuals designated by their jurisdictional authorities to jointly determine objectives, plans, and priorities and work together to execute them.

2.0 Incident Command

2.1 Standards of Command

Standards of Command define standard activities that are performed by the IC to achieve the tactical priorities and incident objectives. The Standards of Command are assumption of command; situational awareness; communications; incident objectives, strategy, and IAP; resource deployment; incident organization; evaluate and revise; and transition of command.

2.2 Establishing Command

The initial IC (first arriving and most qualified first responder), usually an FD Officer or, Security Officer, shall remain in command until Incident Command is transferred, the incident is stabilized, and Incident Command is terminated. The IC initiates the Incident Command process by providing the initial size-up.

The first arriving Officer (e.g., Fire Chief, fire officer, Security Lieutenant or the senior security Officer on duty) establishes Command and announces this over the radio. The IC initiates the Incident Command process by providing the initial size-up. The IC shall remain in command until Incident Command is transferred, the incident is stabilized, and/or Incident Command is terminated. The IC designation will not change through the duration of the incident, even if Command is transferred.

- **WIPP FD**

The WIPP Fire Chief assigned to the incident will normally be the highest ranking Fire Officer at the Incident Command Post (ICP). The Company Officer who has served as the “initial” IC will normally continue to focus on the completion of the tactical priorities and assume the role of Operations or Planning Section Chief, based upon the needs of the incident, and the Fire Chief would become the IC.

- **WIPP Protective Force as IC**

During a security emergency, the position of Security IC is normally filled by the Security Captain or the senior security Officer on duty, who designates the location of the ICP. In order to maintain continuity and overall effectiveness, the on-duty Lieutenant is normally at the ICP.

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- Tactical Priorities

The ICS is developed by the IC to facilitate the completion of the tactical priorities and incident objectives. The tactical priorities in order of importance are rescue, hazard control, loss limiting, victim/occupant stabilization, and safety. The three modes are identified below with examples on how each would apply.

- Investigative Mode - “Nothing Showing.” These situations generally require investigation by the initial arriving resource. The first arriving FD or Protective Force Officer investigates the problem.
- Offensive Mode - These are situations that require immediate action in order to stabilize the incident. Where fast intervention is critical, using a portable radio will permit the FD or Protective Force Officer to be in the “attack mode” without neglecting Incident Command responsibilities.

Examples of these situations for FD include:

- Offensive/interior fire attack
- Critical life safety situations (i.e., rescue) that must be achieved in a compressed time (Passing command to another responder would be acceptable.)

Examples of these situations for Protective Force include:

- Offensive/attack to protect DOE/WIPP assets
- Critical life safety situations (i.e., active shooter or aggressor) that must be achieved in a compressed time (Passing command to another responder would be acceptable.)
- Defensive Mode - In a defensive mode, the risk versus gain to responders in a position of authority is too significant to make an interior fire attack or offensive security tactical response. The probability of saving lives is highly unlikely, the structure is vacant, or the risk to responders attempting to save life and any salvageable property outweighs the gain. Therefore, a defensive mode is the recommended strategy in these situations. Protecting lives from further loss and exposure, confining the damage to the structure(s), and confining the perpetrator or for those cases when the perpetrator is barricaded, are considered defensive modes.

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2.3 Radio Designation

The radio designation "Incident Command" or "IC" will be used along with the geographical location or building number of the incident. Normally, this designation will not change during the incident. The designation of IC will remain with the FD or Security position of authority in command of the incident. For ease of communication, it is recommended that a one word identifier be used when naming an Incident Command when a building address number is not available.

- FD radio protocol examples:
 - Offensive structure fire - "CMR...Engine 23, on scene at the Engineering Building, one-story metal fabricated structure with a fire in the rear. Engine 23 is deploying a handline for fire attack and search and rescue in an offensive mode. LT1 is assuming Engineering Command."
 - Defensive structure fire - "CMR...Engine 24, on scene at the Training Building, we have a one-story metal framed structure fully involved with an exposure to the West. Engine 24 is taking the delta side. This will be a defensive attack. LT3 is assuming Training Command."
 - EMS incident - "CMR...Medic 22 on scene of a multi-vehicle traffic with one victim trapped. Notify Carlsbad to send an additional medical and extrication unit. F1 is assuming North Access Command."
 - Wildland fire incident, direct attack – "CMR...Engine 24 is on scene on the South Access Road. We have approximately five acres of heavy brush involved in fire. Wind is 10-15 mph out of the northeast. Can you notify Eddy County and request additional units? LT2 is assuming South Access Command."
- Security radio protocol examples:
 - Defensive security/law enforcement event - "CMR...A1, arrived on scene at Building 453, I am setting up an over watch position on the northwest side of Building 453. I am assuming 453 Command. No abnormal activities to report at this time."
 - Offensive security/law enforcement event - "CMR...B2, arrived on scene at building 452; I am setting up position on southwest side of Building 452 and establishing 452 Command. I have visual on suspect."

Attachment 1 – Support Annex – Incident Command System**2.4 Staffing the ICS Organization**

Staffing is dependent on level of training and certification requirements. Staffing considerations are always based on the needs of the incident. The number of personnel and the organizational structure are totally dependent on incident size and complexity.

The incident scene is often a dynamic, intense, and exciting place. As the incident grows beyond the capabilities of the first alarm assignment, the IC can become overloaded and overwhelmed with information management, assigning tasks, filling out and updating the tactical worksheets, planning, forecasting, calling for additional resources, talking on the radio, and fulfilling all the other Standards of Command.

There is no absolute staffing standard to follow. Some general staffing guidelines are:

- FD and Security staff members (standards exist within the NIMS doctrines) may be used at Incident Command, General Staff (Section), and Branch levels.
- Command Staff may have Assistants as required.
- The IC may establish Divisions and/or Groups prior to designating an Operations Section.
- The use of Unified Command Structure is recommended in most multi-jurisdiction/agency incidents. An IC from each responsible agency or jurisdiction should be included in the Unified Command staff, with a single spokesperson.
- As the Operations organization expands, activation of Planning and Logistics functions should be considered. The decision to activate additional sections will always be based on the present and anticipated needs of the incident. The EOC may also perform these functions, as needed.

2.4.1 ICS Management Functions

The ICS organization is built around five major functions that may be applied on any incident whether it is large or small: Incident Command, Operations Section, Planning Section, Logistics Section, and Finance/Administration Section. A major advantage of the ICS organization is the ability to fill only those parts of the organization that is required.

For some incidents, and in some applications, only a few of the organization's functional elements may be required. However, if there is a need to expand the organization, additional positions exist within the ICS framework to meet virtually any need (e.g., a Type 2 incident management structure might apply to a large scale wildland fire incident that involves multiple operational periods over several days/weeks).

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2.4.2 Transportation Incidents

The following provides general guidance for initial response to a transportation accident on the WIPP site and access roads. For a single resource response by WIPP for a vehicle accident with no injuries and no HAZMAT releases, WIPP is the sole designated IC. If local/state law enforcement or fire department responds in an assisting role, then upon arrival they receive direction from the WIPP IC.

For incidents when at least two of the three primary onsite field responder agencies (county FD, NM State Police, WIPP FD) form a Unified Command at a transportation accident due to a HAZMAT release, mass casualties, complex patient extrication (Technical Rescue), fire requiring deployment of hose lines (NOT a simple vehicle accident with casualties), the responsibility for Lead IC may transition from one agency to another several times.

For example, NM State Police or Eddy/Lea County FD arrives first at a semi-trailer fatal accident with fire and a release of HAZMAT. They would be the first-arriving IC and would relay initial scene conditions to WIPP FD responders through Eddy or Lea County dispatch centers. Once WIPP FD arrives, the senior WIPP FD Officer unifies with the NM State Police IC, and they identify the verbal IAP. The Lead IC responsibility would transition to WIPP FD during mitigation operations (firefighting, containment of the HAZMAT, stabilization of the vehicle, etc.). Once the life safety, firefighting and/or HAZMAT situation is mitigated (no clean-up operations), the Lead IC would transition back to the NM State Police IC for law enforcement investigation and coroner activities. Once the investigation activities are complete, the Unified Command (all ICs) would make termination recommendations to the EOC for the OE and transfer responsibility to the Recovery Organization.

General concepts for the three primary agencies remain the same in terms of first arriving responsibilities as follows:

- If HAZMAT is suspected, then safely stop short of the incident scene based upon weather conditions. If necessary, use optics to identify any U.S. Department of Transportation placards or package labeling.
- Relay initial scene information (size-up) to the CMR and responding agency crews directly or indirectly through the CMR.
- Establish and name Command and inform dispatch and crews as necessary, including approximate ICP location.
- If qualified to do so (based upon incident type), then begin developing verbal IAP and analyze additional resource needs.
- Upon arrival of the other agencies, form a Unified Command and announce unification to dispatch.

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- Develop Incident Command organization structure as necessary to meet current incident conditions.
- Appoint a Lead IC based upon the IAP objective priorities and phase of the mitigation.
- Transition from one Lead IC to another, as necessary.

2.4.3 Chemical, Biological, Radiological, Nuclear, or Explosive Event Response

The following provides general guidance for initial response to a chemical, biological, radiological, nuclear, or explosive (CBRNE) event at the WIPP. For this type of response, the WIPP Protective Force is the sole designated IC if the incident involved a malevolent act and has the responsibility as Lead IC. The FD organization would serve an assisting role and form a Unified Command.

The first-arriving IC and would relay initial scene conditions to all responders through the CMR. Once all onsite responders arrive, the senior FD Officer unifies with the Protective Force Officer and they work on a verbal IAP. The Lead IC responsibility is to secure the scene, determine PAs, assess life safety, and activate the Memorandum of Understandings with local and state law enforcement for mitigation of the CBRNE incident.

The first arriving agencies responsibilities include:

- If CBRNE is suspected, then safely stop short of the incident scene based upon weather conditions. If necessary, use optics to identify any U.S. Department of Transportation placards or package labeling.
- Relay initial scene information (size-up) to the CMR and responding agency crews directly or indirectly through the CMR.
- Establish and name Command and inform dispatch and crews as necessary, including approximate ICP location.
- Identify and announce PA decision based on indicators.
- If qualified to do so (based upon incident type), then begin developing verbal IAP and analyze additional resource needs.
- Upon arrival of the other agencies, form a Unified Command and announce unification to dispatch.
- Develop Incident Command organization structure as necessary to meet current incident conditions.
- Appoint a Lead IC based upon the IAP objective priorities and phase of the mitigation.

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2.4.4 Transfer of Command

The initial IC will remain in charge until transfer of command is accomplished, which may occur when:

- A more qualified person is available to assume command.
- A jurisdiction or agency is legally required to take command.
- The incident complexity changes.
- There is turnover of personnel on long or extended incidents.
- Personnel are called home for any reason.
- Agency Administrators direct a change in command.
- Changing command makes good sense.

Transfer of command is a common practice. It does not reflect on the competency of the current IC. There are five important steps in effectively transferring command of an incident in progress:

- Incoming IC, if at all possible, personally performs an assessment of the incident situation with the current IC.
- Current IC adequately briefs the incoming IC, face-to face, if possible.
- Incoming IC determines an appropriate time for the official transfer of command.
- Incoming IC notifies staff and assigned personnel of change in Incident Command.
- Incoming IC decides whether to give the previous IC another assignment on the incident.

The incoming IC may give the previous IC another assignment on the incident. The advantages of this are retaining first-hand knowledge at the incident site and allowing the initial IC to observe the progress of the incident and gain experience.

2.4.5 Command Staff

Depending upon the size and type of incident or event, it may be necessary for the IC to designate personnel to provide public information, safety, and liaison services for the entire organization. In ICS, these personnel make up the Command Staff.

In exceptional situations, the IC may need to assign an additional member to the Command Staff to provide information and intelligence functions. The addition of the Information and Intelligence Officer, as a Command Staff member, may be most appropriate in incidents with little need for tactical intelligence or classified intelligence,

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and where the intelligence is provided by supporting agency representatives, through real-time reach-back capabilities.

2.4.6 Information and Intelligence Functions

The analysis and sharing of information and intelligence are important elements of ICS. In this context, intelligence includes not only national security or other types of classified information but also other operational information, such as risk assessments, medical intelligence (i.e., surveillance), weather information, geospatial data, structural designs, toxic contaminant levels, utilities and public works data, etc., that may come from a variety of different sources. Information and intelligence must be appropriately analyzed and shared with personnel, designated by the IC, who have proper clearance and a "need to know" to ensure they support decision-making. When the ERO is activated, the intelligence function may be performed by the EOC.

The information and intelligence function is also responsible for developing, conducting, and managing information-related security plans and operations as directed by the IC. These can include information security and operational security activities, as well as the complex task of ensuring that sensitive information of all types (e.g., classified information, sensitive law enforcement information, proprietary or personnel information, or export controlled information) is handled in a way that not only safeguards the information, but also ensures that it gets to those who need access to it in order to effectively and safely conduct their missions. The information and intelligence function also has the responsibility for coordinating information- and operational-security matters with public awareness activities that fall under the responsibility of the PIO, particularly where such public awareness activities may affect information or operations security.

2.4.7 Public Information Officer

The PIO is responsible for developing and releasing information about the incident to the news media, to incident personnel, and to other appropriate agencies and organizations. The NWP Communications Department is responsible for staffing the PIO position, as needed.

The ERO provides oversight of the emergency through designated EOC personnel, including coordination with state and local governments, EPI, employee communications, and maintaining the information flow with the CBFO and DOE HQ. The EOC assumes responsibility for offsite communications and notifications with local, state, and federal agencies.

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2.4.8 Safety Officer

All agencies stress the importance of safety as both a management and individual responsibility. In addition, the Command Staff position of a qualified incident Safety Officer may be assigned to develop and recommend measures for assuring personnel safety and to assess and/or anticipate hazardous and unsafe situations.

Only one Safety Officer will be assigned for each incident; however, complex incidents may require using Assistant Safety Officers (ASO). ASO's work and are tasked by the Safety Officer. The Safety Officer will correct unsafe situations by working through the chain of command. However, the Safety Officer may exercise emergency authority to directly stop unsafe acts. HAZMAT incidents require the assignment of a Safety Officer.

2.4.9 Field Liaison Officer

For incidents that require significant outside involvement, agencies may require the designation of the Liaison Officer position on the Command Staff. The Liaison Officer is the contact for outside agency representatives assigned to the incident.

2.4.10 Field Agency Representatives

An offsite Agency Representative is an individual assigned to an incident from an assisting or cooperating agency who has been delegated full authority to make decisions on all matters affecting that agency's participation at the incident. Agency Representatives report to the Liaison Officer or to the IC in the absence of a Liaison Officer.

2.4.11 Assisting Agency

Assisting agencies directly contribute tactical resources to the agency or jurisdiction that is responsible for the incident. Thus, mutual aid agreement offsite agencies (e.g., fire, police, public works, or Bureau of Land Management [BLM]) equipment sent to a WIPP incident would be considered assisting agency resources.

2.4.12 Branches, Divisions, and Groups

A Branch is the organizational level having functional or geographic responsibility for major parts of the Operations Section or Logistics Section. In the Operations Section, Branches are established when the number of Divisions or Groups exceeds the span of control. Divisions have geographic responsibility, and Groups have functional responsibility.

The Air Operations Branch may be established to manage aircraft assigned to provide logistical or tactical support to the incident. An optional Information and Intelligence Branch may be established in incidents with a high need for tactical intelligence.

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2.4.13 Technical Specialists

Technical Specialists are typically identified as SMEs at the WIPP. Some incidents may require personnel with specialized skills or knowledge to be temporarily assigned to the Planning Section or wherever their services are required. These persons are called Technical Specialists.

2.4.14 Logistics Section

With the exception of aviation support, all incident support needs are provided by the Logistics Section, as managed by the Logistics Section Chief. When the EOC is activated, the Operations Section, with assistance from the Logistics Section, will support the Logistics Section roles and responsibilities. For Type 1 and 2 incidents, the assigned Incident Management Team (IMT) will have a large role with the Logistics Section.

2.5 Incident Command Structure

It is the responsibility of Incident Command to develop an organizational structure, using standard operating procedures and guides, to effectively manage the incident scene. The development of the organizational structure should begin with deployment of the first arriving resource and continue through a number of phases, depending on the size and complexity of the incident. The Incident Command organization must develop at a pace that stays ahead of the tactical deployment of personnel and resources. In order for the IC to manage the incident, they must first be able to direct, control, and track the position and function of all operating units.

Building an Incident Command organization is the best support mechanism the IC can utilize to achieve an effective balance between managing personnel, resources, and incident needs. Simply put, this means:

- Large scale and complex incidents = large Incident Command organizations
- Small, routine, and simple incidents = small Incident Command organizations

The basic configuration of Incident Command addresses three operational levels:

- Strategic Level - Overall direction of the incident
- Tactical Level - Objectives assigned to Divisions, Groups, etc.
- Task Level - Work assigned to individual companies/members

The Strategic Level involves the overall Incident Command and direction of the incident. The Strategic Plan defines where and when resources will be assigned to the incident and how they are intended to affect the situation. This plan is the basis for developing

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an Incident Command organization, assigning resources, and establishing and ranking tactical priorities.

The Tactical Level directs activities to execute or implement specific objectives. Tactical Level officers include Division/Group Supervisors, who are in charge of grouped resources, are responsible for geographic areas or functions, and supervising personnel assigned to their respective Division/Group. A Division/Group assignment comes with the authority to make decisions and assignments, within the boundaries of the overall plan and safety conditions.

The Task Level refers to those activities normally accomplished by a specific unit or specific personnel, where the hands-on work is actually done. Task level activities are normally supervised by the most qualified person.

The most basic Incident Command structure combines all three levels of Incident Command.

- FD example - The Fire Officer, during a single engine response to a dumpster fire, determines the strategy, tactics, and supervises the crew doing the task.
- Protective Forces example - The shift lieutenant responding to an intrusion alarm within a PPA supervises responding Security Police Officers tactics.

The basic structure for a "routine" incident, involving a small number of fire companies or security units, requires only two levels of Incident Command combining the Strategic and Tactical Levels. FD companies and Protective Force units report directly to Incident Command and operate at the Task Level.

2.5.1 Divisions

Complex emergency situations often exceed the capability of one officer to effectively manage the entire operation. The IC should group companies to work in Divisions/Groups to reduce the span of control to more manageable, smaller sized components. Divisions/Groups allow the IC to communicate principally with Division/Group Supervisors rather than multiple, individual engine company officers or security/law enforcement units, thus providing an effective Incident Command structure and organization. As Divisions/Groups are implemented, Incident Command continues to operate at the strategic level, determining the overall strategy to deal with the incident.

Divisions are used to divide an incident into geographic areas of operation. A Division is located within the ICS organization between the Branch and the Task Force/Strike Team. Division assignments should normally be as follows: Division "A" or "Alpha" will be the street side or main entrance of the building and the other Divisions follow in a clockwise rotation around the building in alphabetical order (any exceptions or deviations from this practice shall be clearly communicated on all Incident Command

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and tactical radio channels). In multi-story occupancies, Divisions will be designated by floor numbers/name (Division 2 indicates 2nd floor). In some cases the floor Division identification may be subdivided into geographic areas such as "Division 2, Stairwell 2" or "Division 2, Stairwell 3" depending on stairwell and floor access. Groups will be identified by their function (Salvage Group, Tactical Group, Medical Group, etc.).

Figure SA-1 provides an example for assigning Divisions based on geographical assignments:

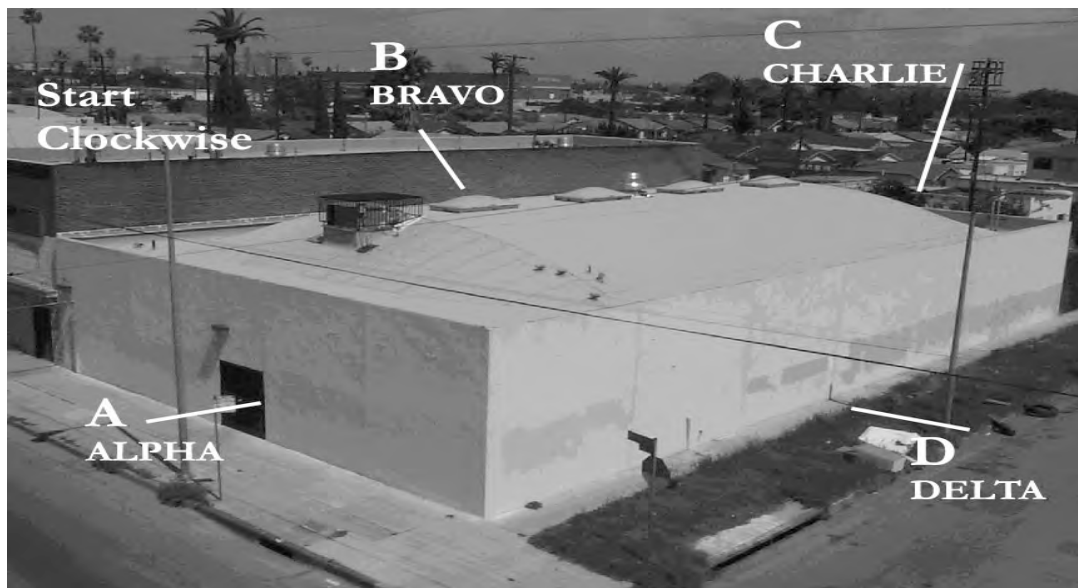


Figure SA-1 - Geographical Division Assignments

In many cases, the initial Division/Group responsibility will be given to the FD or Protective Force Officer who receives the initial assignment to a basic tactical position or function (north, medical, roof, tactical, arrest etc.)

The number of Divisions/Groups that can be effectively managed by the IC varies. In fast moving complex operations, a span of control of no more than five Division/Groups is preferred. In incidents with minimal activity, slow moving, less complex operations, the IC may effectively manage six or more Division/Groups. Where the number of Divisions/Groups exceeds the span of control that the IC can effectively manage, the incident organization should be divided into Branches. Each Branch is responsible for several Divisions/Groups and should be assigned its own communications.

When effective Divisions/Groups have been established, the IC can concentrate on overall strategy and resource allocation, allowing the Division/Group Supervisors to manage their assigned resources. The IC determines strategic goals and assigns tactical priorities and resources to the Divisions/Groups. Divisions/Groups are managed by Division/Group Supervisors, which can be a Chief Officer, FD company officers, Protective Force officers or any other first responder member designated by the IC.

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Each Division/Group Supervisor is responsible for the tactical deployment of the resources at their disposal in order to complete the tactical priorities assigned by the IC. Division/Group Supervisors are also given a radio designation (Roof Division/Group, Division “Alpha,” Division 2, etc.) and are responsible for communicating conditions, actions and needs to Incident Command.

2.6 Incident Action Planning

Incident Action Planning involves the following stages:

- Understand the situation
- Establish incident objectives
- Develop the plan
- Prepare and disseminate the plan
- Execute, evaluate, and revise the plan

The product of this process, a well-conceived, complete Incident Action Plan (IAP), facilitates successful incident operations and provides a basis for evaluating performance in achieving incident objectives. The IAP identifies incident objectives and provides essential information regarding incident organization, resource allocation, work assignments, safety, and weather.

Figure SA-2 below illustrates the IAP process.

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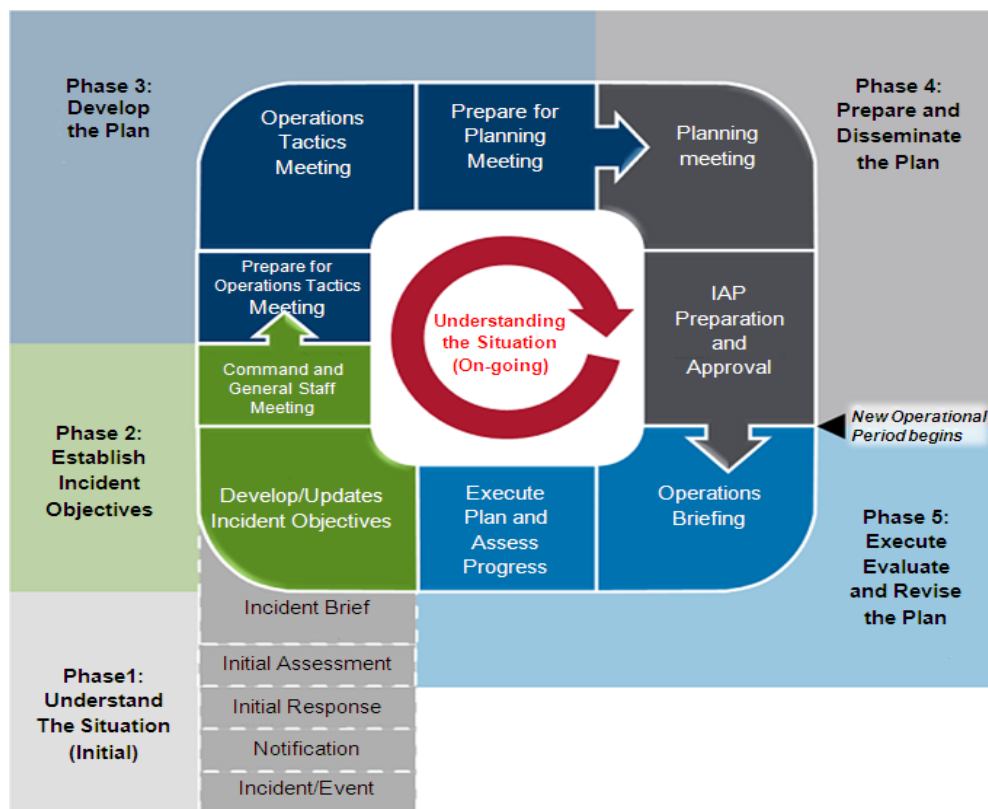


Figure SA-2 - Incident Action Planning Process

ATTACHMENT 7
WP 12-ER4920 RCRA CONTINGENCY PLAN IMPLEMENTATION
23 PAGES

WP 12-ER4920

Revision 2

RCRA Contingency Plan Implementation

Management Control Procedure

EFFECTIVE DATE: 06/05/15

David Stuhan
APPROVED FOR USE

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CHANGE HISTORY SUMMARY

REVISION NUMBER	DATE ISSUED	DESCRIPTION OF CHANGES
0	07/31/14	<ul style="list-style-type: none">• New document.
1	11/03/14	<ul style="list-style-type: none">• Deleted references to WP 12-ER3906 regarding notifications required by the RCRA Contingency Plan, replaced with references to new EA12ER4920-2-0 and EA12ER4920-3-0.• Added new section 5.0.
2	06/05/15	<ul style="list-style-type: none">• Added EA12ER4920-4-0, <i>WIPP Hazardous Materials Incident Report</i>.• Updated references.• Updated Fire Department terminology.

INTRODUCTION^{1, 2}

This procedure defines when the Waste Isolation Pilot Plant (WIPP) Resource Conservation and Recovery Act (RCRA) Contingency Plan will be implemented, and the required notifications and reporting associated with implementation.

Entry into this procedure will result from an emergency event that threatens or has the potential to threaten human health or the environment within the Property Protection Area and the sixteen sections of the Land Withdrawal Area including the South Access Road to the Intersection of the Jal Highway (128) and North Access road to the intersection of the Hobbs Highway (62/180) such as:

- A surface or underground fire
- An explosion
- A natural occurrence that involves or threatens hazardous waste
- A release of hazardous substances, materials, or wastes

Performance of this procedure generates the following record(s), as applicable. Any records generated are handled in accordance with departmental Records Inventory and Disposition Schedules.

- EA12ER4920-1-0, *Contingency Plan Implementation Determination Matrix*
- EA12ER4920-2-0, *Contingency Plan Implementation Notification Script*
- EA12ER4920-3-0, *Notification of Implementation of the WIPP RCRA Contingency Plan*
- EA12ER4920-4-0- *WIPP Hazardous Materials Incident Report*

REFERENCES			
DOCUMENT NUMBER AND TITLE	BASELINE DOCUMENT	REFERENCED DOCUMENT	KEY STEP
Title 40 <i>Code of Federal Regulations</i> (CFR) Part 264.56, "Emergency Procedures"	✓		1
DOE O 151.1C, <i>Comprehensive Emergency Management System</i>	✓		
Hazardous Waste Facility Permit, EPA Identification Number NM4890139088-TSDF	✓		2
WP 12-ER4925, <i>CMR Incident Recognition and Initial Response</i>		✓	
WP 12-ER4926, <i>CMR Expanded Staffing Operations</i>		✓	
WP 13-1, <i>Nuclear Waste Partnership LLC Quality Assurance Program Description</i>	✓		
EA12ER4920-1-0, <i>Contingency Plan Implementation Determination Matrix</i>		✓	
EA12ER4920-2-0, <i>Contingency Plan Implementation Notification Script</i>		✓	
EA12ER4920-3-0, <i>Notification of Implementation of the WIPP RCRA Contingency Plan</i>		✓	
EA12ER4920-4-0, <i>WIPP Hazardous Materials Incident Report</i>		✓	
PROD-439, <i>General Hazard Analysis</i>	✓		

PERFORMANCE

1.0 IMPLEMENTATION

NOTE

The on-duty The Facility Shift Manager (FSM) is the primary RCRA Emergency Coordinator, and is designated to serve as the RCRA Emergency Coordinator. The on-duty Facility Operations Engineer is the alternate RCRA Emergency Coordinator and is available as needed.

- 1.1 FSM or designee, communicate and coordinate emergency response with the Incident Commander, who is designated based on the incident type.
- 1.2 FSM or designee, in the event of a surface or underground fire or explosion, radiological event, or a hazardous material spill, complete EA12ER4920-1-0 to determine if the event requires implementation of the WIPP RCRA Contingency Plan.

- 1.3 FSM or designee, **IF** the determination is made that the event does **NOT** require implementation of the Contingency Plan, **THEN** forward completed EA12ER4920-1-0 to the Fire Department Manager for their records and exit this procedure.
- 1.4 FSM or designee, if the determination is made that the event meets the criteria for Incident Level II or III according to table D-3 of the RCRA Contingency Plan, document that the Contingency Plan is implemented **AND** ensure that the following information is recorded in the CMR Log:
- Name and telephone number of person reporting the incident
 - Location of incident
 - Time and type of incident
 - Severity of the incident
 - Magnitude of incident
 - Cause of incident
 - Assistance needed to deal with or control the incident (i.e., supplemental responders other than Emergency Services Technicians [ESTs]/Emergency Response Technicians/Fire Department). Document if no supplemental responders are needed.
 - Areas or personnel affected by the incident
- 1.5 FSM or designee, forward the completed EA12ER4920-1-0 to the Fire Department Manager for their records.
- 1.6 FSM or designee, **IF** the Contingency Plan has been implemented **OR** the spill or release is determined reportable by the SEC representative, **THEN** request the EST/Fire Department initiate, complete, and submit EA12ER4920-4-0, *WIPP Hazardous Materials Incident Report*, to the Fire Department Manager.

2.0 NOTIFICATION TO LOCAL, STATE, AND FEDERAL AUTHORITIES OF RCRA CONTINGENCY PLAN IMPLEMENTATION

NOTE

The FSM may request assistance from Site Environmental Compliance (or designee) or others to complete notifications. Site Environmental Compliance must notify NMED within 24 hours of event recognition.

NOTE

Notification by voicemail is acceptable if unable to speak with a representative.

- 2.1 FSM or designee, complete EA12ER4920-2-0.
- 2.2 FSM or designee, make and document notifications listed on EA12ER4920-3-0 and provide information from EA12ER4920-2-0.
- 2.3 FSM or designee, ensure documentation of Contingency Plan Implementation notifications has been provided to the Fire Department for maintenance in event record.
- 2.4 Fire Department, maintain Hazardous Material Incident Report with a copy of the completed EA12ER4920-2-0 and EA12ER4920-3-0

3.0 ONGOING IMPLEMENTATION

- 3.1 FSM or designee, manage the incident through implementation of applicable emergency response procedures including, but not limited to, the following:
 - WP 12-ER4925, *CMR Incident Recognition and Initial Response*
 - WP 12-ER4926, *CMR Expanding Staffing Operations*

4.0 FIFTEEN DAY REPORT

NOTE

Regulatory Environmental Services must transmit a 5-day follow-up report to the Secretary of the NMED within 5 days from the time the Permittees become aware of the circumstances.

4.1 Site Environmental Compliance, prepare the written report required to be submitted to the regulators within 15 calendar days of the incident, has been initiated.

4.2 Site Environmental Compliance, submit report to regulators within 15 calendar days of the implementation of the WIPP RCRA Contingency Plan.

5.0 EXIT THE CONTINGENCY PLAN

5.1 Site Environmental Compliance, coordinate preparation of the notification to the regulators that clean up requirements for affected areas have been met, and emergency equipment listed in the Contingency Plan is clean, or replaced, and is fit for its intended use.

5.2 FSM or designee, exit the contingency plan after confirming the following actions have been complete:

5.2.1 Emergency response is complete.

5.2.2 Cleanup requirements for affected area(s) have been met.

5.2.3 Emergency equipment listed in the Contingency Plan, Table D-6 is clean, or replaced, and fit for its intended use.

5.2.4 Notification that substeps 5.2.2 and 5.2.3 have been complete has been sent to the following:

- EPA Region VI Administrator
- Secretary of the NMED

5.3 FSM or designee, record time of exit from the contingency plan in the narrative log.

SCOPE - The decision to implement the WIPP RCRA Contingency Plan is made for fires and hazardous material events occurring within the Property Protection Area and the sixteen sections of the Land Withdrawal Area including the South Access Road to the Intersection of the Jal Highway and North Access road to the intersection of the Hobbs Highway. The decision must evaluate events related to TRU waste in TRU waste management areas, other hazardous wastes (e.g., wastes in Area 474), AND events related to hazardous substances and hazardous materials including radiological materials.

Contingency Plan Implementation Determination Matrix					
NFPA Criteria	Permit Criteria with Guidance	Technical Assistance Contact	Yes	No	NA
Screening Section					
N.A.	1. Is this a medical emergency only? <i>Guidance – Includes heart attack, stroke, fainting and including medical only mass casualty</i>	N.A.			
	2. Spill or release only involved materials excluded from regulation by SARA Title III, Statute 42.U.S.C. 11021(e)? <i>Guidance – Excluded materials that could be at the WIPP site are:</i> <ul style="list-style-type: none"> • Substances present in the same form and concentration as a product packaged for distribution and use by the general public. • Any substance to the extent it is used in a research laboratory or a hospital or other medical facility under the direct supervision of a technically qualified individual. 	Site Environmental Compliance (SEC)			
	3. Spill or release involved only crude oil or fraction thereof? <i>Guidance – EPA interprets CERCLA section 101(14) to exclude crude oil and fractions of crude oil from the definition of hazardous substances. This includes substances that indigenous in crude oil (e.g. Benzene). Also included in this exclusion are natural gas, natural gas liquids, liquefied natural gas, and synthetic gas usable for fuel. These substances are not expected to be on the WIPP site but could be released on the access roads or right of ways.</i>	SEC			
	4. The fire is already out and did not involve any hazardous materials? <i>Guidance – Examples are a fire in trash can, greasy rags, etc. Fire is controlled at incipient stage.</i>	N.A.			
If the above screening questions are answered yes or NA, this incident does not require implementation of the Contingency Plan. Sign and date this matrix. Otherwise, complete Section 1.					

Contingency Plan Implementation Determination Matrix					
NFPA Criteria	Permit Criteria with Guidance	Technical Assistance Contact	Yes	No	NA
Section 1 (Permit - Level I Incident)					
Product Identification	1. Materials DO NOT require a U.S. Department of Transportation (DOT) Placard? <i>Guidance – DOT placards are only applicable during transportation events on public roadways if the amount of materials on the transport vehicle is in large quantities. Loaded TRUPACT containers on trailers are placarded shipments. Placards also may occur on other transport vehicles on the WIPP access roads, the sixteen sections, or with delivery vehicles (e.g. UPS, Federal Express - although this is not likely).</i>	NWP Transportation			
	2. Materials are rated NFPA 0 or 1 for any category? (see NFPA charts) <i>Guidance – NFPA 0 or 1 indicates minimal to slight hazards for health, flammability, and instability i.e. material involved must not burn easily (e.g., it needs a strong heating source to ignite), must not react under normal conditions, and must not present more than a minimal health hazard.</i>	NWP Fire Protection Engineer			
	3. Materials are DOT Other Regulated Materials (ORM)-D? <i>Guidance – These are materials that present limited hazards during transportation due to form, quantity, and packaging. Examples of ORM-D materials include consumer commodities and small arms ammunition. At the WIPP site, Hilti Cartridges are ORM D materials. (ORM-D materials may be present in warehouse or product storage areas, on a delivery truck (e.g., UPS or Federal Express), or in carts or vehicles on the surface or in the underground. They should not be present in WIPP waste.</i>	NWP Transportation			
Fire/Explosion Potential	4. Material(s) instability rating is less than 2? (See Section 1, Item 2.) <i>Guidance – An instability rating less than 2 means the material is normally stable and will not react, burn, or explode under normal conditions</i>	NWP Fire Protection Engineer			
Release/Leak Severity	5. There was no release or a small release that is/was easily contained or confined with readily available resources? <i>Guidance – Release is easily contained with materials such as rags, kitty litter, or soil.</i>	SEC			
Life Safety	6. There is no life-threatening situation from the materials involved? <i>Guidance – incident does not threaten human life. However, personal protective equipment (PPE) may need to be required for clean-up activities. Consult Industrial Hygienist for required PPE.</i>	Emergency Services			
Environmental Impact (Potential)	7. There is no, or minimal, potential environmental impact? <i>Guidance – There is no lasting impact to the environment. Short-term environmental impact, if any, is easily remedied by spill clean-up. Level I releases are easily cleaned up using materials such as absorbent or neutralizer (e.g., kitty litter or acid neutralizing materials), rags, or pigs, or by removing limited amounts of soil.</i>	SEC			
If the Section 1 questions are answered yes or NA, implementation of the Contingency Plan is not required. Sign and date this matrix. If any question is answered no, complete Section 2.					

Contingency Plan Implementation Determination Matrix					
NFPA Criteria	Permit Criteria with Guidance	Technical Assistance Contact	Yes	No	NA
Section 2 (Permit – Level II Incident)					
Product Identification	General Guidance - Materials normally on site that can trigger meeting the product requirements include: <ul style="list-style-type: none"> Ethylene glycol (in site chiller system) Diesel fuel (in underground storage or at fueling stations on surface and in underground) TRU waste TRU waste containing PCBs (when no fire is involved) 				
	1. Material requires a DOT placard? <i>Guidance – DOT placards are only applicable during transportation events on public roadways if the amount of materials on the transport vehicle is in large quantities. Placarded shipments are applicable for loaded TRUPACT containers on trailers. They also may occur on other transport vehicles on the WIPP access roads, the sixteen sections, or with delivery vehicles (e.g., UPS, Federal Express - although this is not likely).</i>	NWP Transportation			
	2. Material is rated NFPA 2 for any category? <i>Guidance – NFPA 2 means moderate hazards for health, flammability, and instability i.e. the material involved will be reactive (unstable or reacts with water) and/or combustible (Flash Point between 100°F and 200°F), and/or requires the use of a breathing apparatus.</i>	NWP Fire Protection Engineer			
	3. Material is an Environmental Protection Agency (EPA regulated waste)? <i>Guidance – This includes TRU or TRU mixed waste, site generated hazardous waste, PCB containing waste.</i>	SEC			
Container Size	4. Material meets any Section 2 product identification criteria AND involves medium sized containers or the container size is unknown? <i>Guidance – Containers may be multiple packages (e.g., 55 drums), but could also be a single portable container (e.g., one Standard Waste Box [SWB]) or a nurse tank (e.g. trailer mounted tank). NFPA 471 indicates a medium size container is one that is less than one ton</i>	SEC			
Fire/Explosion Potential	5. Material meets any Section 2 product identification criteria AND there is the potential for the fire to spread or the material to explode? <i>Guidance – Incident involves material that requires only moderate heating to ignite. This is applicable if the NFPA rating is 2 for flammability (below 200°F) or for instability (violent chemical changes are possible and thus may be explosive). Materials normally on site that may trigger this requirement are diesel fuel and TRU waste.</i>	NWP Fire Protection Engineer			
Release/Leak Severity	6. Material involved meets any Section 2 product identification criteria AND the release may not be controllable without special resources? <i>Guidance – Release most likely requires large amounts of absorbent or pigs to contain the release.</i>	SEC			

Contingency Plan Implementation Determination Matrix					
NFPA Criteria	Permit Criteria with Guidance	Technical Assistance Contact	Yes	No	NA
Life Safety	7. Material involved meets any Section 2 product identification criteria AND requires evacuation of a limited, localized area for life safety? <i>Guidance – This includes evacuation of a building, the underground, the WIPP Site (Property Protection Area [PPA]) and LWA up to the LWA Boundary and access road from the WIPP facility up to the Guard posts.)</i>	Emergency Services			
Environmental Impact (Potential)	8. Material involved meets any Section 2 product identification criteria AND the potential for environmental impact is limited to soil and air within incident boundaries? <i>Guidance – Incident is contained within the LWA boundary. Clean-up of release may require the use of equipment (e.g., pumps, backhoes) and non-sparking tools in addition to absorbent or pigs.</i>	SEC			
Container Integrity	9. Material involved meets any Section 2 product identification criteria AND the container is damaged but able to contain the contents to allow handling or transfer of product? <i>Guidance – The container is tipped over and the lid has been damaged or the container has a small hole (e.g., half-dollar size) resulting from corrosion or other damage. Release can be stopped temporarily by repositioning the container (e.g., standing it upright and securing the lid or turning it so the hole faces upward). However, the contents will need to be transferred to another container or over packed.</i>	SEC			
If any of questions 4 – 9 are answered yes, then the Contingency Plan must be implemented. Sign and date this matrix. If questions 4 – 9 are answered no, complete Section 3.					
Section 3 (Permit Level III Incident)					
Product Identification	General Guidance - Materials normally on site that could meet one of Section 3 product identification criteria include: <ul style="list-style-type: none"> • Sulfuric acid is an Extremely Hazardous Substance (EHS) (only if large batteries are involved) • Unleaded gasoline • TRU waste containing PCBs (when fire is involved) 				
	1. Product is rated NFPA 3 or 4 for any categories including special hazards? <i>Guidance – NFPA 3 and 4 mean serious to extreme hazards for health, flammability, and instability. The material involved will at a minimum detonate with shock, heat or water and/or is highly flammable (Flash Point less than 100°F), and/or requires the use of a full protective suit and a breathing apparatus. The substance may even be fatal on short-term exposure.</i>	NWP Fire Protection Engineer			
	2. Product is or contains a radioactive material?	Rad Control			
	3. Product is or contains a PCB and is involved in a fire?	SEC			

Contingency Plan Implementation Determination Matrix					
NFPA Criteria	Permit Criteria with Guidance	Technical Assistance Contact	Yes	No	NA
	4. Product is a DOT Class 2, Division 2.3 – poisonous gas? <i>Guidance – These can include but are not limited to chlorine, fluorine, and anhydrous ammonia; or one that poses an inhalation hazard (inhalation hazards also can be DOT Class 6, Division 6.1). Under normal conditions, these are not present at the WIPP site. These could potentially be transported on highways within the Land Withdrawal Area (LWA)</i>	NWP Transportation			
	5. Product is an EPA extremely hazardous substance (EHS)? <i>Guidance – many MSDS note EHS designations or this information can be found in EPA's Consolidated List of Lists (http://www2.epa.gov/epcra/consolidated-list-lists) or using the ORNL Tool http://homer.ornl.gov/rq/find.cfm. Typically the only EHS at the WIPP site is sulfuric acid.</i>	SEC			
	6. Product is a DOT Class 1, Division 1.1 or Division 1.2 explosive? <i>Guidance – These materials include explosives with a mass explosion or projection hazard (e.g. pyrophoric or pyrotechnical articles). Under normal conditions, these materials are not present at the WIPP site.</i>	NWP Transportation			
	7. Product is an organic peroxide, a materials dangerous when wet, or a cryogenic? <i>Guidance – Under normal conditions, these are not present at the WIPP site.</i>	NWP Transportation			
Container Size	8. Material involved meets any Section 3 product identification criteria AND container(s) involved are large or container size is unknown? <i>Guidance – NFPA 471 defines a large container to include a tank car, tank truck, stationary tank, hopper car/truck or multiple medium packages. At the WIPP site, this would include SWBs (medium packages) and fuel storage tanks.</i>	SEC			
Fire/Explosion Potential	9. Material involved meets any Section 3 product identification criteria AND there is high potential for a fire or explosion or for the fire to spread? <i>Guidance – Incident involves material that readily ignites, burns easily, or has the potential to cause a catastrophic explosion. (e.g., Materials have NFPA 3 or 4 ratings for flammability or instability.) Also answer yes if the materials involved have a significant health hazard when burned.</i>	NWP Fire Protection Engineer			
Release/Leak Severity	10. Material involved meets any Section 3 product identification criteria AND release may not be controllable even with special resources? <i>Guidance – It will most likely not be possible to stop or control the release.</i>	SEC			
Life Safety	11. Material involved meets any Section 3 product identification criteria AND the incident requires mass evacuation of a large area for life safety. <i>Guidance – This includes incidents at the WIPP that may require evacuation of the WIPP site and surrounding areas.</i>	Emergency Services			

Contingency Plan Implementation Determination Matrix					
NFPA Criteria	Permit Criteria with Guidance	Technical Assistance Contact	Yes	No	NA
Environmental Impact (Potential)	12. Material involved meets any Section 3 product identification criteria AND the potential for environmental impact is severe? <i>Guidance – Incident will not be contained within the WIPP site. Cleanup and restoration of impacted area will likely be initiated at a time significantly removed from the initial incident (weeks or months) and require a significant time frame to recover (months or years). This criterion also includes releases of hazardous materials in an amount greater than or equal to 5 times the Reportable Quantity.</i>	SEC			
Container Integrity	13. Material involved meets any Section 3 product identification criteria AND the container is damaged to such an extent that catastrophic rupture is possible or it is unknown if the container has ruptured? <i>Guidance – The container is damaged to the extent that it is incapable of holding its contents or it is in danger of imminent rupture (e.g., bulging or pressurized).</i>	SEC			
If any of questions 8 – 13 are answered yes, the Contingency Plan must be implemented. Sign and date this matrix.					
If questions 8 – 13 are answered no, complete Section 4.					
Section 4 – Final Check					
N.A.	Is there an emergency event including a fire, an explosion, or a release of hazardous waste or hazardous waste constituents which could or has the potential to threaten human health or the environment? If the answer to this question is “Yes,” implement the Contingency Plan.	SEC			

This completed matrix documents the decision to implement or not implement the RCRA Contingency Plan.

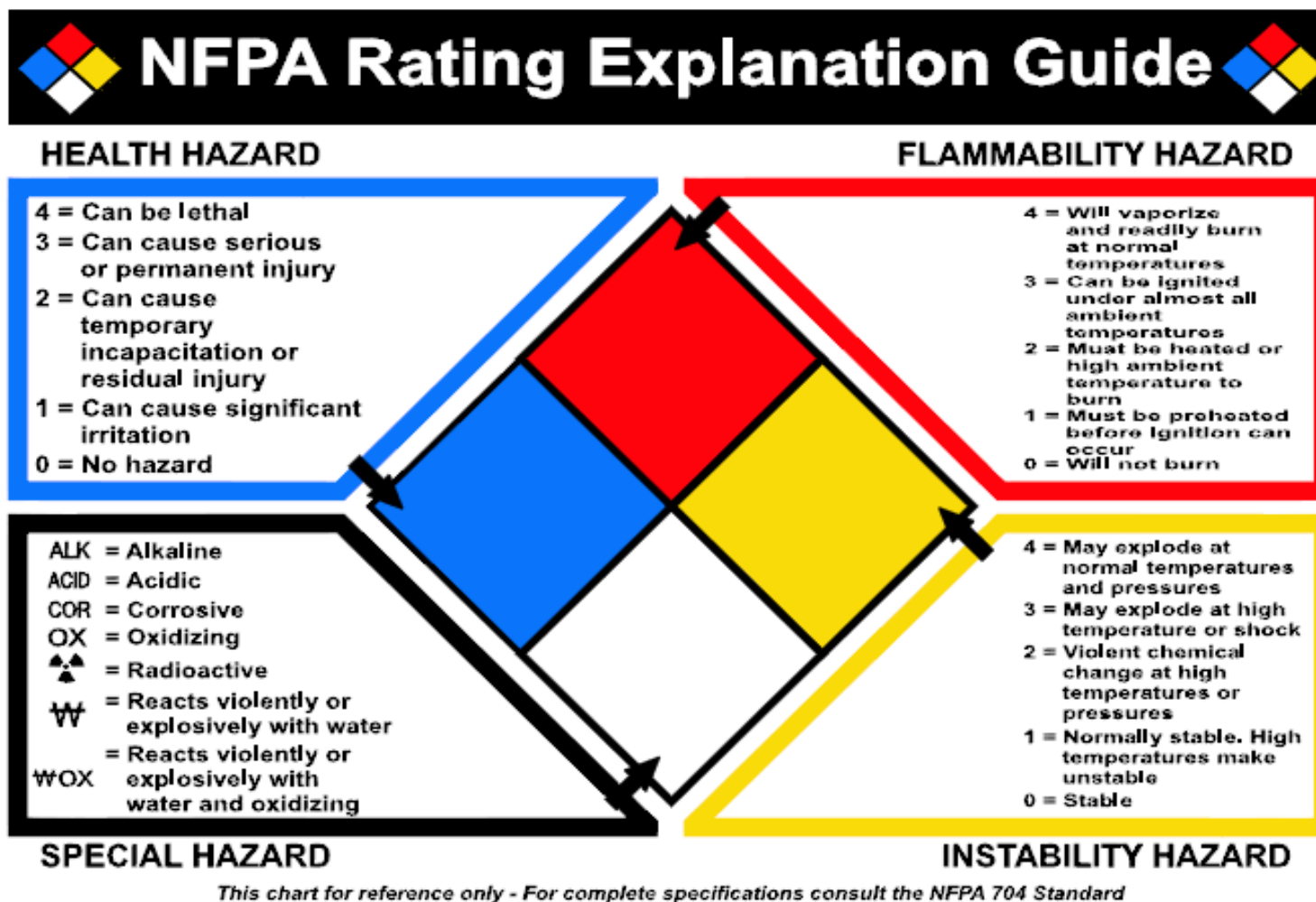
RCRA Coordinator

Print Name Signature Date






Site Environmental Compliance

Print Name Signature Date

NFPA hazard categories refer to the categories in the NFPA 704 Standard. These are normally identified by the NFPA diamond. Three of the hazard categories (Health, Flammability, and Instability) are rated from 0-4. The fourth, Special, identifies specific hazards of the material/waste. Below is an example of the NFPA diamond and a description of the hazard category ratings.



(This chart conveys the same information as the NFPA Diamond in a matrix format.)

 NFPA Rating Explanation Guide 					
RATING NUMBER	HEALTH HAZARD	FLAMMABILITY HAZARD	INSTABILITY HAZARD	RATING SYMBOL	SPECIAL HAZARD
4	Can be lethal	Will vaporize and readily burn at normal temperatures	May explode at normal temperatures and pressures	ALK	Alkaline
3	Can cause serious or permanent injury	Can be ignited under almost all ambient temperatures	May explode at high temperature or shock	ACID	Acidic
2	Can cause temporary incapacitation or residual injury	Must be heated or high ambient temperature to burn	Violent chemical change at high temperatures or pressures	COR	Corrosive
1	Can cause significant irritation	Must be preheated before ignition can occur	Normally stable. High temperatures make unstable	OX	Oxidizing
0	No hazard	Will not burn	Stable		Radioactive
					Reacts violently or explosively with water
					Reacts violently or explosively with water and oxidizing

This chart for reference only - For complete specifications consult the NFPA 704 Standard

Contingency Plan Implementation Notification Script

1. Identify the facility and person making the report:

Waste Isolation Pilot Plant facility, 26 miles (mi) east of Carlsbad, in Eddy County in southeastern NM

Name: _____ **Phone number:** _____

2. Describe the type of incident (fire, explosion, or release):

3. The date/time of the incident: _____

4. The type and quantity of material(s) involved, to the extent known:

5. The exact location of the incident: _____

6. The source of the incident: _____

7. The extent of injuries, if any: _____

8. Possible hazards to human health and the environment (air, soil, water, wildlife, etc.) outside the facility: _____

9. The name, address, and telephone number of the party in charge of or responsible for the facility or activity associated with the incident:

Robert L. McQuinn, President & Project Manager, Nuclear Waste Partnership LLC; (575) 234-7400

Jose R. Franco, Manager, U.S. Department of Energy, Carlsbad Field office; (575) 234-7300

10. The name and the phone number of the RCRA Emergency Coordinator:

_____ ; (575) 234-8276

11. The identity of any surface and/or groundwater involved or threatened and the extent of actual and potential water pollution: _____

12. The steps being taken or proposed to contain and clean up the material involved in the incident:

Notification of Implementation of the WIPP RCRA Contingency Plan

		Date/Time Contacted	Person Contacted (Offsite)
New Mexico Environment Department (NMED); Department of Public Safety			
Telephone:	(505) 827-9329		
FAX:	(505) 827-9368		
NMED; Chief, Hazardous Waste Bureau			
Telephone:	(505) 476-6000		
NMED; Secretary			
Telephone:	(505) 827-2855		
Department of Public Safety WIPP Coordinator			
Telephone:	(505) 827-9221 (505) 476-0606		
FAX:	(505) 829-3434		
State Emergency Response Commission – Department of Homeland Security WIPP Coordinator			
Telephone: (Don Shainin)	(505) 476-9628		
FAX:	(505) 476-9695		
National Response Center			
Telephone:	1-800-424-8802		
FAX:	(202) 479-7181		
Local Emergency Planning Committee – Eddy County			
Telephone:	(575) 885-3581		
FAX:	(575) 628-3973		

Notification of Implementation of the WIPP RCRA Contingency Plan

		Date/Time Contacted	Person Contacted (Offsite)
Local Emergency Planning Committee – Lea County			
Telephone:	(575) 605-6561		
Chief, Hazardous Waste Bureau			
Telephone:	(505) 476-6000		
Carlsbad Police Department			
Telephone:	(575) 885-2111		
Emergency:	(575) 887-0010		
Carlsbad Fire Department (direct line for non-emergencies)			
Telephone:	(575) 885-2111		
Non-emergency:	(575) 885-3125		
Eddy county Sheriff			
Telephone:	(575) 887-7551		
If no answer, call dispatch at (575) 628-5417 and ask for Sergeant on Duty.			
Hobbs Police/Fire Department			
Telephone:	(575) 397-9265		
Alternate:	(575) 392-5588		
Alternate: (Station 1)	(575) 397-9311		

Date:		Location:		
I. INITIAL INFORMATION		DATE:	TIME:	
EST:		REPORTED LOCATION:		
REPORTED BY:		DEPT.:		
INITIALLY REPORTED TO:		DEPT.:		
RESPONSIBLE MANAGER:		DEPT.:		
II. WEATHER CONDITIONS		WIND DIRECTION (from):	WIND SPEED:	MPH
TEMPERATURE:		Degrees F	RELATIVE HUMIDITY:	
CONDITIONS: <input type="checkbox"/> Sunny <input type="checkbox"/> Cloudy/Overcast <input type="checkbox"/> Raining <input type="checkbox"/> Snowing <input type="checkbox"/> Other:				
III. TYPE OF INCIDENT (SPILL OR RELEASE, LEAK, ETC.):				
Fire Involved: <input type="checkbox"/> YES <input type="checkbox"/> NO (If fire is involved, then attach a copy of the fire report.)				
MATERIALS INVOLVED	UN/NA NO.	QUANTITY	HAZARD CLASS	NFPA CLASS
IV. PERSONNEL INVOLVED IN CLEANUP ACTIVITIES				
PERSONNEL/DEPT.		DECON METHOD/MEDICAL TREATMENT		
V. PERSONNEL CONTAMINATED NOT INVOLVED IN THE CLEANUP ACTIVITIES				
PERSONNEL/DEPT.		MATERIAL CONTACTED	DECON/MEDICAL TREATMENT	

WIPP HAZARDOUS MATERIAL INCIDENT REPORT

Date:		Location:	
VI. EQUIPMENT USED FOR CLEANUP AND CONTROL MEASURES			
EQUIPMENT/MATERIAL/PPE	QUANTITY	DISPOSITION (Decon or Replacement)	
VII. DESCRIPTION OF INCIDENT AND RESPONSE (including containment and control)			
VIII. SITE ENVIRONMENTAL COMPLIANCE			
Date:	Time:	of evaluation.	
Waste Category:			
Disposition:			
ORGANIZATION	DATE	TIME	
SEC Representative:			
	Print Name	Signature	Date

WIPP HAZARDOUS MATERIAL INCIDENT REPORT

Date:		Location:	
IX. INITIAL NOTIFICATION BY CMRO:			
DEPARTMENT	PERSON CONTACTED	TIME	NOTIFIED BY
Facility Ops. (FSM)			
Emergency Services Technician (EST)			
SEC			
Industrial Safety			
Facility Ops. (FM/FMD)			
CMRO:			
	Print Name	Signature	Date
FSM:			
	Print Name	Signature	Date
X. CONTINGENCY PLAN IMPLEMENTATION			
Contingency Plan implemented. <input type="checkbox"/> YES <input type="checkbox"/> NO			
FSM:			
	Print Name	Signature	Date
XI. REVIEWS			
Report submitted by:			
	Print Name	Signature	Date
Emergency Services Manager:			
	Print Name	Signature	Date
SEC Manager:			
	Print Name	Signature	Date
COMMENTS:			

WIPP HAZARDOUS MATERIAL INCIDENT REPORT**GUIDANCE FOR COMPLETING THE INCIDENT REPORT**

NOTE: It is important to route this report quickly so the FSM and CMRO on duty during the spill or release response can complete Section IX.

1. Fire Department, complete date and location entries on pages 1, 2, and 3.
2. Fire Department, complete Section I, INITIAL INFORMATION. Include information requested about initial report.
3. Fire Department, complete Section II, WEATHER CONDITIONS. Include wind direction, wind speed, temperature, and any observable conditions.
4. Fire Department, complete Section III, TYPE OF INCIDENT. Include materials involved, UN/NA number, quantity of material, hazard class, and NFPA classification. Check YES or NO for fire involvement. If fire was involved, attach copy of fire report.
5. Fire Department, complete Section IV, PERSONNEL INVOLVED IN CLEANUP ACTIVITIES. Include name, department, and any decon or medical treatment received for personnel involved in cleanup activities.
6. Fire Department, complete Section V, PERSONNEL CONTAMINATED NOT INVOLVED IN CLEANUP ACTIVITIES. Include name, department, material contacted, decon, and medical treatment given for personnel contaminated, but not involved in cleanup.
7. Fire Department, complete Section VI, EQUIPMENT USED FOR CLEANUP AND CONTROL MEASURES. Include equipment, materials, and personal protective equipment used plus quantity and disposition of materials.
8. Fire Department, complete Section VII, DESCRIPTION OF INCIDENT AND RESPONSE. Include detailed description of the incident and response including containment and control of the spill or release.
9. SEC representative, complete Section VIII, SITE ENVIRONMENTAL COMPLIANCE. Include date and time spill or release was evaluated. Complete "Waste Category" and "Disposition." List organizations notified of spill or release and dates and times of notifications. Print, sign, and date. Hand document to Emergency Services.
10. CMRO and FSM, complete Section IX, INITIAL NOTIFICATION BY CMRO. Include person contacted, department, time, and person making notification. CMRO and FSM print name, sign, and date.
11. FSM, complete Section X, CONTINGENCY PLAN IMPLEMENTATION, print name, sign, and date. Return report to Emergency Services.
12. Fire Department Manager, review report, print name, sign, and date in Section XI, REVIEWS.
13. SEC Manager, review report, print name, sign, and date in Section XI, REVIEWS.
14. Fire Department, file report.

NOTE: Any person may provide comments in the comment area of Section XI, REVIEWS.

ATTACHMENT 8
DESCRIPTION OF THE RESOURCE CONSERVATION AND RECOVERY
ACT (RCRA) CONTINGENCY PLAN TRAINING AND NUMBER OF
SESSIONS AND NUMBER OF PERSONNEL TRAINED

91 PAGES

ATTACHMENT 8

Violation 1, Count 5 of the Administrative compliance Order HWB-15-21 (CO) addressed the emergency preparedness and response program. As part of the settlement with regard to this topic, the Respondents are to provide the New Mexico Environment Department a “Description of the Resource Conservation and Recovery Act (RCRA) Contingency Plan training and provide number of sessions and number of personnel trained.”

The Resource Conservation and Recovery Act (RCRA) Contingency Plan Training program is referred to as SAF-645 RCRA Emergency Coordinator. According to Permit Attachment F2, page F2-80 is a self-paced lesson that describes the responsibilities and actions to be taken by the RCRA Emergency coordinator and other emergency response personnel whenever the WIPP Contingency Plan is implemented. The Permit requires that the Facility Shift Manger (who serves as the RCRA Emergency Coordinator) and the Facility Shift Engineer take this training. The description of SAF-645 includes 28 items to be covered in the course. These are incorporated into 34 enabling objectives for the training.

The Respondents have attached the course developed by the Training Department. While the Permit describes this as a self-paced course, it is also taught in a classroom setting. The presentation materials for the classroom course are attached.

Number of classroom sessions offered was **13**.

Number of personnel trained between 9/1/14 and 9/1/15 was **42**.

Attached are the following documents:

SAF-645 RCRA Emergency Coordinator (WIPP Contingency Plan Procedure) Rev. 4 (34 pages)

**SAF-645 RCRA Emergency Coordinator (WIPP Contingency Plan Procedure) Rev. 4
Presentation (57 pages)**

SAF-645

RCRA Emergency Coordinator

(WIPP Contingency Plan Procedure)

Rev. 4

PURPOSE OF THIS TRAINING

Terminal Objective - Upon completion of this course, the student will be able to perform the duties of the RCRA Emergency Coordinator (REC) in accordance with the WIPP Hazardous Waste Facility Permit (Permit) Attachment D, RCRA Contingency Plan (CP) and the driving regulations.

Mastery of the terminal objective will be demonstrated by scoring 80 percent or higher on the course examination. The examination will be open book.

Enabling Objectives

- EO 01 State the purpose of the Contingency Plan (CP).
- EO 02 State the level of authority the RCRA Emergency Coordinator (REC) holds for implementation of the RCRA Contingency Plan.
- EO 03 Describe the general responsibilities of the REC.
- EO 04 Identify WIPP emergency response groups and their responsibilities.
- EO 05 Describe the area covered by the CP, the types of materials and events that can trigger its implementation, and the emergency event stages the CP covers.
- EO 06 Describe events that do not require the CP to be implemented.
- EO 07 State when the CP is to be implemented.
- EO 08 Describe criteria II and III incidents.
- EO 09 Describe how to determine if the CP must be implemented.
- EO 10 State what it means to “implement the CP” and Identify the emergency response procedures that implement the CP.
- EO 11 Describe when external notifications are required, the REC’s responsibility related to notifications, and identify the procedures that assure notifications are made.
- EO 12 State information included in notifications to public safety and regulatory agencies.
- EO 13 Describe the typical notification sequence of emergency response personnel.
- EO 14 Describe initial response activities.
- EO 15 State when REC would request assistance from off-site agencies.
- EO 16 State the methods for notifying facility employees of an emergency.
- EO 17 Describe actions to be taken when a surface or underground evacuation is declared

- EO 18 Describe the information needed to determine proper response to the incident and whether to implement the CP, who is primarily responsible for securing this information, and potential sources for finding the information.
- EO 19 Define the four criteria that are evaluated in the assessment stage of an incident.
- EO 20 Describe actions involved in control, containment, and correction of an incident.
- EO 21 Describe physical and chemical methods of mitigation.
- EO 22 Describe actions that are to be implemented in the event of a fire.
- EO 23 Describe actions that are to be implemented in the event of an explosion.
- EO 24 Describe actions to be taken in the event of spills.
- EO 25 Describe actions to be taken in the event of a container spill or leakage.
- EO 26 Describe response actions to spills, leaking, or punctured CH and RH TRU mixed waste container.
- EO 27 Describe actions to be taken in the event of a natural emergency (earthquake, lightning strike, etc.) involving hazardous waste or materials.
- EO 28 Describe response efforts in the event of spalling of ground in the underground.
- EO 29 Describe response efforts in the event of a roof fall in the underground.
- EO 30 State who is responsible for the radiological decontamination of personnel.
- EO 31 Describe events to be completed during the emergency termination phase.
- EO 32 Describe events to be completed during the cleanup phase.
- EO 33 Describe the record keeping and reporting requirements in the event the Contingency Plan is implemented.
- EO 34 State when Contingency Plan Implementation can be closed out.

1. RCRA Contingency Plan – Basic Knowledge

PURPOSE OF CP

Enabling Objective (E.O. #1) - State the purpose of the CP

The CP's purpose is to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.

Because the CP is integrated with and implemented through the overall WIPP Emergency Management Program, it will also be implemented in the event of releases of hazardous materials that reach a pre-defined magnitude.

E.O. #2 – State the level of authority the REC holds for implementation of the RCRA Contingency Plan.

The REC has the authority to commit the resources needed to carry out the contingency plan.

E.O. #3 – Describe the general responsibilities of the REC.

The REC has numerous specific responsibilities included within the CP. These responsibilities are summarized by the following bullets.

- Assume responsibility for management of activities related to the assessment, abatement, and/or cleanup of an incident once notified of event.
- Take, direct, or ensure actions are taken, to minimize hazards to human health or the environment throughout an event that implements the CP including the following actions.
 - Maintain overall control and responsibility of the emergency
 - Stop processes and operations when necessary
 - Remove or isolate containers
 - Ensure continued monitoring for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, as appropriate if operations are stopped in response to the event
- Be thoroughly familiar with
 - all aspects of the CP
 - all operations and activities at the facility
 - location and characteristics of waste handled
 - location of all records within the facility
 - facility layout

This course is designed to provide the participant information necessary to become thoroughly familiar with the CP.

E.O. #4 – Identify WIPP emergency response groups and their responsibilities.

The CP describes the WIPP various emergency response groups and their responsibilities. These are:

Assistant Chief Office Warden – coordinates personnel accountability for particular sections of the site.

Central Monitoring Room Operator (CMRO) – “on-shift” operator responsible for Central Monitoring Room (CMR) operations, coordination of all facility communications, and maintaining the official facility log.

Chief Office Warden – responsible for overall accountability at designated staging areas in the event of an evacuation.

Emergency Response Team (ERT) – A group of volunteers that are trained in firefighting, first responder, trench rescue, confined space rescue, high angle rope rescue, and hazardous material response.

Emergency Services Technician (EST) – An employee whose regular job is that of full-time emergency responder. When designated, the EST may act as the on-scene Incident Commander (on-scene coordinator) for all emergency response events. During emergency conditions, the EST conducts inspections on the facility fire suppression systems emergency equipment, and completes specific sections of the WIPP Hazardous Material Incident Report

Facility Shift Manager (FSM) – the senior shift representative is in charge of all plant operations. The FSM is responsible for maintaining the facility in a safe configuration during normal and abnormal situations. The FSM is the individual in charge of directing activities at the WIPP site during emergency situations; including responsibilities as the primary Resource Conservation and Recovery Act (RCRA) Emergency Coordinator in accordance with the CP.

First Line Initial Response Team (FLIRT) – The FLIRT is a volunteer force that consists of underground personnel as supplemental first responders in an underground event, and as support for the ESTs and ERT.

Mine Rescue Team (MRT) – responsible for underground reentry and rescue after an emergency evacuation and is part of the WIPP Supplemental Emergency Response Program.

Office Warden – responsible for assuring that personnel are evacuated from their assigned area or building during evacuations.

Emergency Operations Center (EOC) Staff – responsible for providing support for the REC to appropriately manage the emergency event. Staff consists of a minimum of three NWP management positions (Crisis Manager, Safety Representative, Operations Representative). Full staffing consists of the three previous positions plus a Deputy Crisis Manager, EOC Coordinator, and a representative from DOE. Additional technical and logistics personnel provide support as necessary.

2. DETERMINING WHEN TO IMPLEMENT THE RCRA CONTINGENCY PLAN

Understanding when to implement the CP is the foundation for compliance with regulatory requirements. Section 2 will enable you to evaluate an event and accurately determine when to implement the CP.

E.O. #5 – Describe the area covered by the CP, the types of materials and events that can trigger its implementation, and the emergency event stages that the CP covers.

The CP may be required to be implemented for emergency events when they occur¹

- within the WIPP property protection area,
- on the north and south access roads and right of ways to the Hobbs or Jal highway, respectively, or
- anywhere on the sixteen sections of Land Withdrawal Area.

Implementation of the CP may be required when any of the following types of materials are involved.¹

- Hazardous waste (site generated)
- Hazardous materials /substances

When the CP is implemented, it governs the management of the event through the following stages

- assessment,
- response,
- abatement,
- cleanup
- close out reporting

¹ Specific criteria must be met

E.O. #6 – Describe events that do not require the CP to be implemented.

A medical emergency, non-emergency, and Level I event do not require implementation of the CP.

Medical emergency only

Guidance – Includes heart attack, stroke, fainting and medical only mass casualty

Spill or release only involved materials excluded from regulation by SARA Title III, Statute 42.U.S.C. 11021(e)?

Guidance – Excluded materials that could be at the WIPP site are:

- Substances present in the same form and concentration as a product packaged for distribution and use by the general public.
- Any substance to the extent it is used in a research laboratory or a hospital or other medical facility under the direct supervision of a technically qualified individual.

Spill or release involved only crude oil or fraction thereof?

Guidance – EPA interprets CERCLA section 101(14) to exclude crude oil and fractions of crude oil from the definition of hazardous substances. This includes substances that indigenous in crude oil (e.g. Benzene). Also included in this exclusion are natural gas, natural gas liquids, liquefied natural gas, and synthetic gas usable for fuel. These substances are not expected to be on the WIPP site but could be released on the access roads or right of ways.

Fire is already out and did not involve any hazardous materials?

Guidance – Examples are a fire in trash can, greasy rags, etc. Fire is controlled at incipient stage.

Level I criteria (as well as for Levels II & III) are based on NFPA Standard 471, *Recommended Practice for Responding to Hazardous Materials Incidents*, Table 5.1 which characterizes emergency events into levels of potential or actual hazards. The table is meant to be used by emergency response organizations to help in response planning. NFPA characterizes emergency events in terms of seven categories that affect the seriousness of the event.

When the CP was developed, the WIPP and NMED agreed upon use of the NFPA criteria to determine when the CP would be implemented. This method of “grading” an incident is to initiate use of the CP when event conditions could reasonably be expected to represent a level of risk to people or the environment from TRU mixed waste, hazardous waste, or hazardous material that warrants CP activation.

Section 1 (Permit - Level I Incident)		
Product Identification	1. Materials DO NOT require a U.S. Department of Transportation (DOT) Placard? <i>Guidance – DOT placards are only applicable during transportation events on public roadways if the amount of materials on the transport vehicle is in large quantities. Loaded TRUPACT containers on trailers are placarded shipments. Placards also may occur on other transport vehicles on the WIPP access roads, the sixteen sections, or with delivery vehicles (e.g. UPS, Federal Express - although this is not likely).</i>	NWP Transportation
	2. Materials are rated NFPA 0 or 1 for any category? (see NFPA charts) <i>Guidance – NFPA 0 or 1 indicates minimal to slight hazards for health, flammability, and instability i.e. material involved must not burn easily (e.g., it needs a strong heating source to ignite), must not react under normal conditions, and must not present more than a minimal health hazard.</i>	NWP Fire Protection Engineer
	3. Materials are DOT Other Regulated Materials (ORM)-D? <i>Guidance – These are materials that present limited hazards during transportation due to form, quantity, and packaging. Examples of ORM-D materials include consumer commodities and small arms ammunition. At the WIPP site, Hilti Cartridges are ORM-D materials. (ORM-D materials may be present in warehouse or product storage areas, on a delivery truck (e.g., UPS or Federal Express), or in carts or vehicles on the surface or in the underground. They should not be present in WIPP waste.</i>	NWP Transportation
Fire/Explosion Potential	4. Material(s) instability rating is less than 2? (See Section 1, Item 2.) <i>Guidance – An instability rating less than 2 means the material is normally stable and will not react, burn, or explode under normal conditions</i>	NWP Fire Protection Engineer
Release/Leak Severity	5. There was no release or a small release that is/was easily contained or confined with readily available resources? <i>Guidance – Release is easily contained with materials such as rags, kitty litter, or soil.</i>	SEC
Life Safety	6. There is no life-threatening situation from the materials involved? <i>Guidance – incident does not threaten human life. However, personal protective equipment (PPE) may need to be required for clean-up activities. Consult Industrial Hygienist for required PPE.</i>	Emergency Services
Environmental Impact (Potential)	7. There is no, or minimal, potential environmental impact? <i>Guidance – There is no lasting impact to the environment. Short-term environmental impact, if any, is easily remedied by spill clean-up. Level I releases are easily cleaned up using materials such as absorbent or neutralizer (e.g., kitty litter or acid neutralizing materials), rags, or pigs, or by removing limited amounts of soil.</i>	SEC

E.O #7 – State when the CP is to be implemented.

The CP is to be implemented when the event meets the criteria for a Level II or Level III incident as defined in the CP OR whenever the REC determines the emergency event has or has the potential to threaten human health or the environment.

The REC has the authority to implement the CP based on professional expertise and conservative judgment whether or not Level II or III criteria are met.

E.O. #8 – Describe criteria II and III incidents.

Criteria for classification of an incident as defined by the CP are incorporated into the Contingency Plan Implementation Determination Matrix (hereafter referred to as CP Matrix). This matrix's form number is EA 12ER4920-1-0 and a copy is included in this training as Attachment 1. The matrix must be used to document the basis for deciding whether or not to implement the CP.

E.O. #9 – Describe how to determine if the CP must be implemented.

Using the incident information provided by the emergency responders, the FSM determines if CP implementation is appropriate by taking following steps.

1. Determine if the event is within the geographical area covered by the CP.
2. Determine if the event meets the Screening or Level 1 Criteria. (If, do not implement CP)
3. *Determine if the event meets the specific incident parameters as spelled out in incident type procedures (e.g. fire, radiological or spill/release event).*

Incident Type	Preestablished Level II / III Events
Underground Fire	<p>If any one of the following conditions are met.</p> <ul style="list-style-type: none"> Multiple containers of TRU waste that is (are) fully involved or has (have) the potential to become fully involved in fire OR if the number of containers involved in the fire is unknown. A fire in the underground has the potential to fully involve an area that contains more than 5 times the Reportable Quantity of hazardous materials as determined by the FSM in consultation with Site Environmental Compliance. It should be noted that WIPP is not expected to possess such quantities.
Surface Fire	<p>If any one of the following conditions are met.</p> <ul style="list-style-type: none"> Tanker Truck transporting diesel or gasoline is fully involved or has the potential to become fully involved in fire. Multiple containers of TRU waste that is (are) fully involved or has (have) the potential to become fully involved in fire. One or more of the following areas are fully involved or have the potential to become fully involved in fire. <ul style="list-style-type: none"> [A] Storage Building 474 [B] Analytical Lab Building 451 [C] Low Level Counting Lab 452 A fire has the potential to fully involve an area or vehicle (e.g., U.S. Department of Transportation [DOT]) placard chemical delivery truck) that contains more than five times the Reportable Quantity of hazardous materials as determined by the FSM in consultation with Site Environmental Compliance (SEC).
Hazardous Material Spill	<p>If any of the following conditions are met</p> <ul style="list-style-type: none"> Tanker truck transporting diesel or gasoline has released its contents (in excess of 1,000 gallons). The contents of one standard waste box or two or more 55-gallon drums of CH/RH TRU waste have been spilled. (The Standard Large Box [SLB2] or Ten Drum Overpack exceed the contents of the standard waste box or two 55-gallon drums.) Leak to the environment involving more than 50% (approximately 1,500 gallons) of the contents of the Waste Handling Building (WHB) chiller system ethylene glycol.

Incident Type	Preestablished Level II / III Events
Surface Rad event	<p>If any one of the following conditions are met</p> <ul style="list-style-type: none"> • Portable continuous air monitor (CAM) alarm in/near surface structures that has been confirmed to not be naturally occurring radiological material (NORM) present by Radiological Control personnel. • Waste Handling Building (WHB) DOCK CAM or RH CAM alarm that has been confirmed to be non-NORM present by Radiological Control personnel. • Actual or suspected breach of one or more Contact- or Remote-Handled (CH/RH) Transuranic (TRU) waste containers as a result of an accident in the Waste Handling (WH) process, fire, an external event (e.g., airplane crash), a natural phenomenon event (e.g., tornado, earthquake), or a security event. • A failure of shielding in a shielded waste container such that the measured dose rate exceeds 1 rem at 100 cm.
UG Rad Event	<p>Any one of the following conditions are met</p> <ul style="list-style-type: none"> • Underground (U/G) Room Exit continuous air monitors (CAMs) HI or HI-HI radiation alarm. • Portable CAM alarm in the U/G that has been confirmed to not be naturally occurring radiological material (NORM) present by Radiological Control personnel. • Station B CAM HI-HI Alarm of 40 DAC-hr or direct frisk of Station B filter that reads greater than two times background. • Actual or suspected breach of one or more Contact- or Remote-Handled (CH/RH) Transuranic (TRU) waste containers as a result of an accident in the U/G Waste Handling (WH) process, spalling/roof fall in an active disposal room or waste transport path, fire, an external event (e.g., airplane crash), a natural phenomenon event (e.g., tornado, earthquake), or a security event. • A failure of shielding (RH shielding or CH shielded waste container) such that the measured dose rate exceeds 1 rem at 100 cm. Error! Reference source not found.

Early in the WIPP project's life, an analysis was performed to determine onsite materials and quantities that could lead to triggering a Level II or III incident if involved in an emergency event. These substances, their locations and primary hazard categories are listed in Table D-1 of the CP and are included as Attachment 2. The analysis also resulted in determining specific incident parameters that would trigger CP implementation. These specific incident criteria have been incorporated into the applicable procedures (spills/releases, rad events, fires).

4. *If step 1 does not require implementing the CP, complete the CP Matrix in accordance with WP 12 ER4920 to determine if other event characteristics would lead to CP implementation.*

Even if the event does not meet one of the pre-determined incident parameters associated with Step 1, the event may STILL REQUIRE implementation of the CP. This matrix walks the REC / REC designee through ALL the criteria for determining when to implement the CP including the FSM performing a final consideration of whether to implement the CP based on his/her professional expertise and conservative judgment.

5. *Finally, if event characteristics change such that hazards to human health or environment are increased, Steps 1 and 2 are to be revisited.*

Each of the relevant incident specific procedures directs this consideration with action statements to take the REC through this sequence.

3. IMPLEMENTING THE CP

E.O. #10 –State what it means to “implement the CP” and Identify the emergency response procedures that implement the CP.

Implementing the Contingency Plan means that the WIPP Emergency Response Procedures are implemented including the new procedure WP 12-ER4920, which directs actions unique to the CP implementation.

The procedures that direct the actions for responding to specific emergency events are designed to ensure that WIPP meets the requirements of DOE, OSHA, and MSHA related to emergency response. These same procedures are also key to meeting the requirements of RCRA and implementing the CP. The procedures are:

WP 12-ER3903	Termination, Reentry, and Recovery
WP 12-ER3906	Categorization and Classification of Operational Emergencies
WP 12-ER4902	Hazardous Material Spill and Release Response
WP 12-ER4903	Surface Radiological Event Response
WP 12-ER4904	Underground Radiological Event Response
WP 12-ER4907	Evacuation / Sheltering in Place
WP 12-ER4908	Surface Fire Response
WP 12-ER4910	Earthquake / Seismic Response
WP 12-ER4911	Underground Fire Response

Actions unique to implementing the CP are incorporated into WP 12-ER4920, RCRA CP Implementation. Actions include those for determining if an event meets the criteria for implementation, how to document implementation and make required notifications and reports .

E.O. 11– Describe when external notifications are required, the REC’s responsibility related to notifications, and identify the procedures that assure notifications are made.

Local, state, and federal authorities are required to be notified when a CP event has occurred that could threaten human health or the environment outside the facility.

The REC’s responsibility is to assure that required notifications are made. This is accomplished by either the REC or an REC designee making the notifications. The notifications are directed through the following two procedures.

- WP12-ER4920 RCRA CP Implementation
- WP12-ER3906, Categorization and Classification of Operational Emergencies

E.O. 12 – State information included in notifications to public safety and regulatory agencies.

The specific information that must be included is identified in Attachment 1, Script for Notifications for Contingency Plan Implementation in WP 12- ER4920.

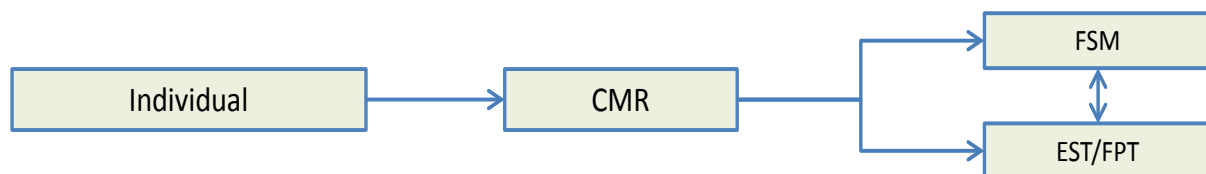
The information is

- Name and address of the facility
- Name and telephone number of the person making the external report
- Type of incident (fire, explosion, or release)
- Date and time of incident
- Type and quantity of materials involved, to the extent known
- Source of the incident
- Extent of injuries, if any
- Possible hazards to human health and the environment (air, soil, water, wildlife, etc.) outside the facility
- Name, address and telephone number of the part in charge of or responsible for the facility or activity associated with the incident.
- Name and phone number of the REC
- Identity of any surface and/or groundwater involved or threatened and the extent of actual and potential water pollution
- Steps being taken or proposed to contain and clean up the material involved in the incident.

4. INITIAL CP RESPONSE ACTIONS

The CP describes initial actions that will be taken to determine an appropriate response effort and if CP should be implemented. These initial actions include those for notification of the FSM when there is an event, and those to mobilize initial response and support organizations / teams, to gather the information needed to assess the significance of the event, plan for appropriate response, and determine whether to implement the CP.

E.O. #13 – Describe the typical notification sequence of emergency response personnel.



E.O. #14 – Describe initial response activities.

Initial Response Activity	Who Performs	Procedure
Determine if supplemental emergency responders (ERT, FLIRT, MRT, off-shift personnel) are needed and if so, initiate action to secure resources.	REC	Type Specific ER Procedures
Investigate to determine pertinent event information.	EST/FPT	Response Teams Standard Operating Guides and Training
Assess event using information from emergency responders and other organizations and determine if CP and/or EOC needs to be implemented.	REC	Type Specific ER Procedures and 12-ER4920
Assess need for and coordinate, when applicable, use of mutual aid agreements with local responders and agencies and with other external resources such as those from the Federal Response Plan.	FSM	Type Specific ER procedures and WP12-ER3906
Notify facility employees of the event as appropriate in accordance with site protocols (alarms, warnings, or announcements).	CMRO	Type Specific ER Procedures
Determine appropriate notifications (local, state, national) and after consultation with DOE, assure notifications are made.	REC	WP 12-ER4920 WP 12-ER3906
Determine if evacuation is appropriate and the area of evacuation (release site/area, building, PPA, surrounding public); direct evacuation according to procedure(s).	REC	WP 12-ER4907 WP12-ER3906
Be available to advise officials on whether or not local areas should be evacuated.	REC	

E.O. #15 – State when REC would request assistance from off-site agencies.

Assistance from off-site agencies (DOE, National Response Plan resources, MOU parties) are to be requested if on-site response resources are unable to provide all needed response actions for an emergency event.

These resources might also be call on to assist in the event of a security or medical emergency.

E.O. #16 – State the methods for notifying facility employees of an emergency.

Methods that can be used for notifying facility employees of an emergency are:

Method	Description
Local Fire Alarms	Ringling Bell
Surface Evacuation Alarm	Yelp Tone
Underground Evacuation Alarm	Yelp Tone with Flashing strobe lights
Site Notification System	Public Address (PA) system Electrons Pagers Portable Radios

RCRA regulations require that when there is an imminent or actual emergency situation, internal facility alarms or communication systems will be activated immediately to notify all facility personnel.

E.O. 17 – Describe actions to be taken when a surface or underground evacuation is declared.

Surface or underground evacuation is directed through WIPP procedure WP 12-ER4907, Evacuation/Sheltering in Place.

The CP describes the actions that are in this procedure for both surface and underground. Actions the REC will take that are specifically referenced in the CP are as follows.

- REC initiates surface evacuation notification by directing the CMRO to sound the surface evacuation alarm.
- REC decides which staging area to be used in the event of a site evacuation and advises the office wardens of the selections
- REC notifies Security of an evacuation so that security will open the gates and facilitate egress.
- REC, in the event of a surface or underground event, can call for underground personnel to report to assembly areas (Figure D-9).

Surface Evacuation Actions

- REC informs the office wardens which staging area(s) to use.
- Personnel report to their designated staging areas and receive instructions from their office warden.
- Personnel working in contaminated areas assemble at specific (segregated) staging areas.
- Office Wardens conduct accountability of personnel
- Accountability reports are given in the following sequence
 - Office wardens to assistant chief office warden to Chief Office Warden
 - Chief Office Warden to CMRO
 - CMRO to REC
- The CMRO or EST notifies ERT members to assemble at a designate location
- The EST notifies the COW of response team accountability.

Underground Evacuation Actions

- REC calls for underground personnel to report to assembly areas.
- Underground personnel evacuate using the appropriate egress hoist
- Underground controller confirms accountability with ALL personnel brass tags returned to the Underground Controller
- Underground Personnel report to their on-site staging area.

Sections 5, 6, and 7 are based on descriptive language in the CP for how to assess the actual or potential impact of an event, to determine the appropriate response to the event, and general methods for response and mitigation. The CP describes, in a significant amount of detail, actions / processes that are followed by the WIPP project in these areas. Many of the actions described in the permit would not be performed by the REC. Rather they will be performed by the EST, ERT, or other personnel within the incident command system or emergency response organization. These sections are included in this training to ensure you have the knowledge required of CP contents and will be familiar with the actions that can be taken.

5. ASSESSMENT OF INCIDENT

E.O. 18 – Describe the information needed to determine proper response to the incident and whether to implement the CP, who is primarily responsible for securing this information and potential sources for finding the information.

Needed Information. The information needed for determining whether or not to implement the CP and for proper response to the incident (protect people and environment) includes

- Location of event (release/spill, explosion, fire, natural emergency (e.g.. earthquake, flood, lightning strike), underground roof fall
- Type and quantity of material released/spilled (hazardous waste, hazardous materials)
- Source
- Areal extent of impact
- Date and time
- Weather conditions
- Potential hazards to human health or the environment

Responsible Personnel. WIPP emergency response personnel provide information during the initial response and via additional assessment efforts. Other WIPP organizations (e.g. Transportation, Environmental Compliance, and Industrial Health) may augment information to help identify hazards associated with released materials and/or additional actions needed for addressing the event.

Potential Sources. Emergency responders use physical, cognitive and technical data to help identify the hazardous material involved and its characteristics. Other organizations may use internal data systems or other resources. Sources may include any of the following.

- | | |
|------------------------|---|
| • Container shape | • United Nations/North American Product identification number (i.e. D.O.T transportation numbers) |
| • Container number | • WIPP Safety Data Sheet number and database |
| • Location / occupancy | • Waste Data System (WDS) (TRU, TRU mixed or Site Derived Waste) |
| • Markings/color | • Technical experts |
| • Placards/labels | |
| • NFPA Ratings | |

Emergency responders communicate information to the REC as it is identified both in initial and subsequent responses and in accordance with WIPP emergency response communication protocols.

It is important to reinforce that it is critical that the assessment phase be completed as promptly as practicable to ensure a good understanding of the material(s) involved and their hazards so that decisions related to response efforts and implementation of the CP are appropriate.

Enabling Objective (E.O 19.) – Define the four criteria that are evaluated in the assessment stage of an incident.

Using incident information, the following four criteria are evaluated in order to determine the impact or potential impact to human health or the environment resulting from the event.

Exposure magnitude of actual or potential exposure to employees, the general public and the environment; duration of human and environmental exposure; and pathways of exposure.

Toxicity the degree to which a substance can harm humans or animals.

Reactivity the tendency of a substance to undergo chemical reaction, either by itself or with other materials, and to release energy (etc. explode, ignite, burn).

Uncertainty the degree to which the exposures, toxicity or reactivity of involved materials is not known.

6. INCIDENT RESPONSE GENERAL ACTIONS

E.O. #20 – Describe actions involved in control, containment, and correction of an incident.

For a CP event the REC is to ensure **reasonable measures** are taken so that fires, explosions or releases do not occur, recur, or spread to TRU mixed waste or other hazardous materials at the facility both during the response and during cleanup and recovery.

The CP specifies the REC will

- Maintain overall control of the emergency and emergency response efforts until the emergency is terminated. The REC may accept and evaluate advice of WIPP facility personnel and emergency response organization members, but retains overall responsibility.
- Remain in contact with responding personnel to advise them of known hazards involved and the degree and location of the event (e.g. fire, explosion).
- Shut down operational units (e.g. process and ventilation) that have been directly or indirectly affected.
- Implement MOU's for additional support if needed
- Stop processes and operations as needed
- Ensure continued monitoring for leaks, pressure buildup, gas generation, or ruptures in valves, pipes or other equipment when processes or operations have been stopped in response to the event.
- Restrict personnel not needed for response from the incident scene
- Curtail non-essential activities in the area
- Evacuate the area, as needed
- Confirm emergency responders have implemented a means to ensure storm drains and/or sewers do not receive potentially hazardous runoff or spilled material. (e.g. dikes, absorbents)
- Maintain fire equipment on standby at the incident site in cases where ignitable liquids have been or may be released and ensuring all ignition sources are kept out of the area
- Authorize restart of operation or equipment that has been shut down to ensure areas/equipment are safe for reentry/use (e.g. materials released that are incompatible with TRU or hazardous waste have been cleaned up and removed)

- Ensure the following
 - Containers are removed and isolated
 - Released materials are collected and contained
 - Preliminary inspections of adjacent facilities and equipment to assess damage are conducted
 - Containers/drums from affected areas are over packed and/or removed
 - Damaged equipment and facilities are repaired as appropriate
 - Temporary dikes are constructed, monitored, and reinforced as needed
 - Ignitable liquids will be segregated, contained, confined, diluted, or otherwise controlled
 - No waste is received or disposed of in an affected area until cleanup operations are complete
 - TRU mixed waste remains in the waste handling building unit, the parking area unit, or the underground HWDU.

E.O. 21 – Describe physical and chemical methods of mitigation

Methods of mitigation for releases must be selected to achieve the following.

- Minimize contamination and contact to personnel
- Limit migration of contaminants
- Properly dispose of contaminated material

Methods of mitigation may include both physical and chemical methods as included below

Method	Description
Physical	
Absorption	Materials hold liquids through the process of wetting (e.g. absorbent socks, pads)
Covering	Temporary covering of radioactive materials (e.g. absorbent sheets, plastic, or ambulance blankets)
Diversions or Dikes	Use of physical barriers to prevent or reduce the quantity of liquid flowing into the environment.
Overpacking	Encasing the original leaking container in a larger, compatible container.
Plug and Patch	Use of compatible material plugs and/or patches to reduce or temporarily stop the flow of materials from small holes, rips, tears, or gashes in containers.
Transfer	Moves liquids, gases, or some solids from a leaking or damaged container to another. Transfer can be done manually or by pump.
Vapor Suppression	Use of specially designed agents to reduce or eliminate vapors emanating from a spilled or released material (e.g. using aqueous foam blanket)
Chemical	
Neutralization	Applying acids or bases to a spill to form a neutral salt.
Solidification	Adding a material to a hazardous liquid so that a solid material results.

7. INCIDENT RESPONSE - "TYPE SPECIFIC RESPONSES"

E.O. #22 - Describe actions that are to be implemented in the event of a fire.

The WIPP fire response is limited to incipient and exterior structure fires unless directed otherwise as part of a lifesaving attempt. WIPP personnel are trained to, and can, respond to interior fires. However, in the event of an interior structure fire, it is anticipated that the appropriate MOU's will be activated.

For underground fires, the first option for response is to apply mechanical methods to stop the fire (e.g. cut electrical power) and the last option is to be reconfiguring ventilation using control doors.

The following actions are implemented in the event of a fire:

- Materials involved will be determined as discussed in Section 5.
- Appropriate fire extinguishing materials are used to extinguish fires (i.e. fire response materials must be compatible with the materials involved in the fire). For TRU mixed waste fires, water and dry chemical materials have been determined to be appropriate for all components of the wastes.
- All emergency response personnel wear appropriate personal protective equipment
- Obtain airborne radioactivity samples during a fire involving radioactive materials using portable and fixed air samplers.
- If a fire spreads or increases in intensity, affected personnel will be evacuated and if the incipient stage is exceeded, a defensive approach will be taken until MOU's are activated.
- Emergency response personnel ensure dikes are built for storm drains and/or sewers to ensure they do not receive potentially hazardous runoff leading to contamination of stormwater collection ponds.
- For TRU mixed waste fires, portable adsorbent dikes (Pigs) are used to retain as much firefighting water as possible, until the water can be transferred to containers or sampled and analyzed for hazardous constituents.
- Fire suppression materials used in response to a fire are to be retained on-scene to allow for an evaluation to determine appropriate recovery and disposal methods.

Actions to be taken, as applicable, after fire response is complete and the fire is extinguished are:

- Separate and isolate any combustible materials involved from TRU mixed waste.
- For TRU waste containers where content cannot be determined, evaluate for radiological contamination and hazardous waste constituents.
- Send swipes for analysis of hazardous constituents when cleanup has proceeded to the point of finding no radionuclide activity..
- Label and place in the disposal section of the underground, TRU waste containers whose exteriors have been determined to be radiologically clean and free of any visible evidence of hazardous waste spills on the container.
- The physical areas involved in a fire must also be analyzed and if necessary declared contaminated. Any material removed from this area must be declared as radiologically/hazardous waste. The area will be controlled until declared clear of contamination.

E.O. #23 - Describe actions that are to be implemented in the event of an explosion

Actions described in the CP that are unique to an explosion event that involves or threatens hazardous or TRU mixed waste or hazardous materials are:

- Evacuate the affected area
- CMRO immediately notifies the EST and the REC
- EST renders aid and assistance to injured personnel first
- REC establishes communication and other site personnel and organizations as necessary
- EST (incident commander) directs emergency response efforts to ensure safety of personnel and control of possible fires
- Isolate, remove and dispose of radioactive or hazardous waste materials found at the scene appropriately by trained and qualified personnel.

E.O. #24 - Describe actions to be taken in the event of spills

In the event of a Level II or III spill event, the REC directs spill control, decontamination, and termination procedures. The REC is to implement the following actions.

- Evacuate immediate area.
- Review facility records to determine identity and chemical nature of released material
- Implement entry team procedures with special attention to the following.
 - Buddy system
 - Appropriate PPE
 - Backup Rescue team
 - Supplement communication signals (hand signals and hand light signals)
 - Monitoring equipment
 - Exposure time limitations
- Secure source of release when possible
- Ensure storm drains and/or sewers do not receive potentially hazardous runoff or spilled material. Dikes may be used to contain runoff.
- Ensure that no TRU mixed waste that may be incompatible with the released material is managed in an affected area until cleanup procedures are complete

E.O. #25 - Describe actions to be taken in the event of a container spill or leakage.

- Assemble appropriate response equipment
- Contain the material and stop the release by transferring released material to a container that is in good condition and/or over packing the leaking container into another container that is in good condition
- Determine the extent of migration of the release
- Initiate cleanup actions (e.g. neutralization, vacuuming, excavation)

E.O. #26 - Describe response actions to spills, leaking, or punctured CH and RH TRU mixed waste containers

Response efforts are conducted in three phases

1 Event (these actions can take place simultaneously, but must be completed before proceeding to the reentry phase)

- Stop Work
- Warn others (notify CMRO)
- Isolate area
- Minimize exposure
- Close off unfiltered ventilation.

Reentry

- Issue Radiological Work Permit
- Appropriate personnel perform surveys, sample and mitigate any problems
- Smears and air samples are counted
- Develop decontamination and recovery plan.

Recovery Phase

- Post Area
- Implement decon and recovery plan
- Minimize spread of contamination

Details of the spill and cleanup must be documented in the facility log.

E.O. #27 - Describe actions to be taken in the event of a natural emergency (earthquake, lightning strike, etc.) involving hazardous waste or materials.

The CP states the REC will ensure the following actions are taken after a natural emergency has occurred that involves hazardous waste or hazardous materials.

- Inspect or check the following areas for damage and/or leaking containers or containment systems.
 - Container storage areas.
 - Containers which have not been disposed.
 - Affected equipment areas within HWMU's.
 - Electrical boards and overhead electrical lines for damage.
 - Affected buildings and fencing directly related to hazardous waste management activities
- Conduct a general survey of the site looking for signs of land movement, etc.
- Take any necessary corrective measures, however temporary, to rectify potential or real problems.
- Record inspection results.

The CP also defines that if there is a facility emergency involving underground structural integrity, the situation will be handled as a natural emergency.

E.O. #28 - Describe response efforts in the event of spalling of ground in the underground

The following response efforts concern the spalling-of-ground within an underground waste room, and include the following:

Reentry:

- a. Coordinate with Radiological Control Technicians (RCTs) and Mine Engineering to inspect back and assure conditions allow for safe entry
- b. Determine if the waste container(s) in question are accessible
- c. Restrict access in ventilation flow path downstream of incident
- d. Restrict ventilation to the affected room
- e. Close off unfiltered ventilation

The criteria used to determine whether a waste container is accessible are the location of the container, the amount of waste in the room, and the expense of reaching the waste container safely versus the expense of abandonment of the room. For example, if the room is 95 percent filled and spalling-of-ground punctured a waste container at or near the exit of the room, the decision to isolate the room and move waste emplacement activities to the next room would be prudent.

Recovery:

- a. Inspect containers and containment for signs of leakage or damage
- b. Determine if the affected area allows for continued waste disposal
- c. Decontaminate the area as appropriate
- d. Inspect affected equipment for proper function
- e. Depending on volume of material, repackage spilled waste
- f. Characterize containers based on the containers that were damaged
- g. Replace the removed and derived waste containers into the waste stack and update the WWIS and
- h. Document activities and record results

E.O. #29 - Describe response efforts in the event of a roof fall in the underground

The CP states the REC will take the following actions following actions in the event of a roof fall in an active waste emplacement area of the underground. For implementation of the CP, the REC is to ensure these actions are taken.

Reentry:

- a. Coordinate with RCT and Mine Engineering to inspect back and assure safe conditions
- b. Restrict access in ventilation flow path downstream of the incident
- c. Withdraw the room from ventilation
- d. Survey for radiological contamination and establish the Rad. Buffer area
- e. Install barricade devices

Recovery:

- a. Inspect containers and containment for signs of leakage or damage
- b. Determine if the affected area allows for continued waste disposal
- c. Decontaminate the area as appropriate
- d. Inspect affected equipment for proper function
- e. Depending on volume of material, repackage spilled waste
- f. Characterize containers based on the containers that were damaged
- g. Replace the removed and derived waste containers into the waste stack and update the WWIS and
- h. Document activities and record results

E.O. #30 - State who is responsible for the radiological decontamination of personnel.

The Radiological Control section is responsible for the decontamination of personnel contaminated with radioactive material.

Persons contaminated and on their way to the staging area should:

- Cover the contaminated area
- Radiological Control will escort the person to the staging area

Note: During an immediate evacuation, the contaminated area can be covered by any method warranted, with the attempt being to cover the entire contaminated area.

Contaminated persons arriving at the staging area are decontaminated at one of the following:

- The portable decontamination shower
- The decontamination trailer
- A temporary controlled area posted by radiological control personnel

8. POST EMERGENCY ACTIONS AND CLOSING OUT THE CP IMPLEMENTATION

E.O. #31 - Describe events to be completed during the emergency termination phase

The following items are completed to transition from the emergency phase to the clean-up phase for all emergencies:

- Emergency scene must be stable
- Release of hazardous substances must be stopped
- Reaction of hazardous substances must be controlled
- Released hazardous substances must be contained within a localized and manageable area and
- Area of contamination must be adequately secure from unauthorized entry

When the preceding actions are all completed, the incident is out of the emergency phase.

E.O. #32 - Describe events to be completed during the cleanup phase

During this phase, the REC ensures the following actions are taken

- An incident-specific decontamination plan for either a level II or III incident is developed and used.
- The On-scene Incident Commander remains on-scene until the hazard has been mitigated
- Verification of samples (air, soil, or water) is directed as necessary
- Provision is made for the treatment, storage, or disposal of recovered waste or contaminated materials in accordance with regulations.
- No waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are complete
- All emergency equipment listed in the contingency plan, is cleaned and readied for use, or replaced before operations resume
- Any necessary verification of air, soil, or water samples are directed

E.O. #33 - Describe the record keeping and reporting requirements in the event the Contingency Plan is implemented

WP 12-ER4920 directs the record keeping and reporting that must be made when the Contingency Plan is implemented. These requirements are:

- The REC is to ensure that the time, date, and details of any incident that implements the CP is recorded in the facility log maintained by the CMRO. This log is to be part of the RCRA Operating Record.
- The "WIPP Hazardous Materials Incident Report" is to be completed to document the incident. The report is to be initiated by the EST/FPT with the REC, CMRO, Environmental Compliance representative, and a Hazardous Waste Operations Representative completing their respective sections.
- Within 15 days after the incident, WIPP must submit a written report on the incident to EPA Region VI Administrator and to the Secretary of the NMED. The report must also be submitted to other agencies as specified in the CP. The Site Environmental Compliance group is responsible for preparing the report. The report must include the
 - Name, address, and telephone number of the owner/operator
 - Name, address, and telephone number of the facility
 - Date, time and type of incident (e.g., fire, explosion or release)
 - Name and quantity of material(s) involved
 - Extent of injuries, if any
 - Assessment of actual and potential hazards to human health or environment, where this is applicable and
 - Estimated quantity and disposition of recovered material resulting from the incident
- The Secretary of the NMED and EPA Region VI Administrator must be notified that the WIPP facility that all emergency equipment, used in the emergency response, has been cleaned, repaired, or replaced and is fit for its intended use prior to the resumption of waste management operations in affected areas.

E.O. #34 - State when Contingency Plan Implementation can be closed out.

Implementation of the Contingency Plan ends when the emergency response is complete, emergency equipment has been cleaned, repaired or replaced and is fit for its intended use and notification of the Secretary of the NMED and EPA Region VI Administrator has been completed.

Attachment 1

SCOPE - The decision to implement the WIPP RCRA Contingency Plan is made for fires and hazardous material events occurring within the Property Protection Area and the sixteen sections of the Land Withdrawal Area including the South Access Road to the Intersection of the Jal Highway and North Access road to the intersection of the Hobbs Highway. The decision must evaluate events related to TRU waste in TRU waste management areas, other hazardous wastes (e.g., wastes in Area 474), AND events related to hazardous substances and hazardous materials including radiological materials.

Contingency Plan Implementation Determination Matrix					
NFPA Criteria	Permit Criteria with Guidance	Technical Assistance Contact	Yes	No	NA
Screening Section					
N.A.	1. Is this a medical emergency only? <i>Guidance – Includes heart attack, stroke, fainting and including medical only mass casualty</i>	N.A.			
	2. Spill or release only involved materials excluded from regulation by SARA Title III, Statute 42.U.S.C. 11021(e)? <i>Guidance – Excluded materials that could be at the WIPP site are:</i> <ul style="list-style-type: none"> • Substances present in the same form and concentration as a product packaged for distribution and use by the general public. • Any substance to the extent it is used in a research laboratory or a hospital or other medical facility under the direct supervision of a technically qualified individual. 	Site Environmental Compliance (SEC)			
	3. Spill or release involved only crude oil or fraction thereof? <i>Guidance – EPA interprets CERCLA section 101(14) to exclude crude oil and fractions of crude oil from the definition of hazardous substances. This includes substances that indigenous in crude oil (e.g. Benzene). Also included in this exclusion are natural gas, natural gas liquids, liquefied natural gas, and synthetic gas usable for fuel. These substances are not expected to be on the WIPP site but could be released on the access roads or right of ways.</i>	SEC			
	4. The fire is already out and did not involve any hazardous materials? <i>Guidance – Examples are a fire in trash can, greasy rags, etc. Fire is controlled at incipient stage.</i>	N.A.			
If the above screening questions are answered yes or NA, this incident does not require implementation of the Contingency Plan. Sign and date this matrix. Otherwise, complete Section 1.					

Contingency Plan Implementation Determination Matrix					
NFPA Criteria	Permit Criteria with Guidance	Technical Assistance Contact	Yes	No	NA
Section 1 (Permit - Level I Incident)					
Product Identification	1. Materials DO NOT require a U.S. Department of Transportation (DOT) Placard? <i>Guidance – DOT placards are only applicable during transportation events on public roadways if the amount of materials on the transport vehicle is in large quantities. Loaded TRUPACT containers on trailers are placarded shipments. Placards also may occur on other transport vehicles on the WIPP access roads, the sixteen sections, or with delivery vehicles (e.g. UPS, Federal Express - although this is not likely).</i>	NWP Transportation			
	2. Materials are rated NFPA 0 or 1 for any category? (see NFPA charts) <i>Guidance – NFPA 0 or 1 indicates minimal to slight hazards for health, flammability, and instability i.e. material involved must not burn easily (e.g., it needs a strong heating source to ignite), must not react under normal conditions, and must not present more than a minimal health hazard.</i>	NWP Fire Protection Engineer			
	3. Materials are DOT Other Regulated Materials (ORM)-D? <i>Guidance – These are materials that present limited hazards during transportation due to form, quantity, and packaging. Examples of ORM-D materials include consumer commodities and small arms ammunition. At the WIPP site, Hilti Cartridges are ORM D materials. (ORM-D materials may be present in warehouse or product storage areas, on a delivery truck (e.g., UPS or Federal Express), or in carts or vehicles on the surface or in the underground. They should not be present in WIPP waste.</i>	NWP Transportation			
Fire/Explosion Potential	4. Material(s) instability rating is less than 2? (See Section 1, Item 2.) <i>Guidance – An instability rating less than 2 means the material is normally stable and will not react, burn, or explode under normal conditions</i>	NWP Fire Protection Engineer			
Release/Leak Severity	5. There was no release or a small release that is/was easily contained or confined with readily available resources? <i>Guidance – Release is easily contained with materials such as rags, kitty litter, or soil.</i>	SEC			
Life Safety	6. There is no life-threatening situation from the materials involved? <i>Guidance – incident does not threaten human life. However, personal protective equipment (PPE) may need to be required for clean-up activities. Consult Industrial Hygienist for required PPE.</i>	Emergency Services			
Environmental Impact (Potential)	7. There is no, or minimal, potential environmental impact? <i>Guidance – There is no lasting impact to the environment. Short-term environmental impact, if any, is easily remedied by spill clean-up. Level I releases are easily cleaned up using materials such as absorbent or neutralizer (e.g., kitty litter or acid neutralizing materials), rags, or pigs, or by removing limited amounts of soil.</i>	SEC			

Contingency Plan Implementation Determination Matrix					
NFPA Criteria	Permit Criteria with Guidance	Technical Assistance Contact	Yes	No	NA
If the Section 1 questions are answered yes or NA, implementation of the Contingency Plan is not required. Sign and date this matrix. If any question is answered no, complete Section 2.					
Section 2 (Permit – Level II Incident)					
Product Identification	General Guidance - Materials normally on site that can trigger meeting the product requirements include: <ul style="list-style-type: none"> Ethylene glycol (in site chiller system) Diesel fuel (in underground storage or at fueling stations on surface and in underground) TRU waste TRU waste containing PCBs (when no fire is involved) 				
	1. Material requires a DOT placard? <i>Guidance – DOT placards are only applicable during transportation events on public roadways if the amount of materials on the transport vehicle is in large quantities. Placarded shipments are applicable for loaded TRUPACT containers on trailers. They also may occur on other transport vehicles on the WIPP access roads, the sixteen sections, or with delivery vehicles (e.g., UPS, Federal Express - although this is not likely).</i>	NWP Transportation			
	2. Material is rated NFPA 2 for any category? <i>Guidance – NFPA 2 means moderate hazards for health, flammability, and instability i.e. the material involved will be reactive (unstable or reacts with water) and/or combustible (Flash Point between 100°F and 200°F), and/or requires the use of a breathing apparatus.</i>	NWP Fire Protection Engineer			
	3. Material is an Environmental Protection Agency (EPA regulated waste)? <i>Guidance – This includes TRU or TRU mixed waste, site generated hazardous waste, PCB containing waste.</i>	SEC			
Container Size	4. Material meets any Section 2 product identification criteria AND involves medium sized containers or the container size is unknown? <i>Guidance – Containers may be multiple packages (e.g., 55 drums), but could also be a single portable container (e.g., one Standard Waste Box [SWB]) or a nurse tank (e.g. trailer mounted tank). NFPA 471 indicates a medium size container is one that is less than one ton</i>	SEC			
Fire/Explosion Potential	5. Material meets any Section 2 product identification criteria AND there is the potential for the fire to spread or the material to explode? <i>Guidance – Incident involves material that requires only moderate heating to ignite. This is applicable if the NFPA rating is 2 for flammability (below 200°F) or for instability (violent chemical changes are possible and thus may be explosive). Materials normally on site that may trigger this requirement are diesel fuel and TRU waste.</i>	NWP Fire Protection Engineer			
Release/Leak	6. Material involved meets any Section 2 product identification criteria AND the release may not be controllable without special resources?	SEC			

Contingency Plan Implementation Determination Matrix					
NFPA Criteria	Permit Criteria with Guidance	Technical Assistance Contact	Yes	No	NA
Severity	<i>Guidance – Release most likely requires large amounts of absorbent or pigs to contain the release.</i>				
Life Safety	7. Material involved meets any Section 2 product identification criteria AND requires evacuation of a limited, localized area for life safety? <i>Guidance – This includes evacuation of a building, the underground, the WIPP Site (Property Protection Area [PPA]) and LWA up to the LWA Boundary and access road from the WIPP facility up to the Guard posts.)</i>	Emergency Services			
Environmental Impact (Potential)	8. Material involved meets any Section 2 product identification criteria AND the potential for environmental impact is limited to soil and air within incident boundaries? <i>Guidance – Incident is contained within the LWA boundary. Clean-up of release may require the use of equipment (e.g., pumps, backhoes) and non-sparking tools in addition to absorbent or pigs.</i>	SEC			
Container Integrity	9. Material involved meets any Section 2 product identification criteria AND the container is damaged but able to contain the contents to allow handling or transfer of product? <i>Guidance – The container is tipped over and the lid has been damaged or the container has a small hole (e.g., half-dollar size) resulting from corrosion or other damage. Release can be stopped temporarily by repositioning the container (e.g., standing it upright and securing the lid or turning it so the hole faces upward). However, the contents will need to be transferred to another container or over packed.</i>	SEC			
If any of questions 4 – 9 are answered yes, then the Contingency Plan must be implemented. Sign and date this matrix.					
If questions 4 – 9 are answered no, complete Section 3.					
Section 3 (Permit Level III Incident)					
Product Identification	General Guidance - Materials normally on site that could meet one of Section 3 product identification criteria include: <ul style="list-style-type: none"> • Sulfuric acid is an Extremely Hazardous Substance (EHS) (only if large batteries are involved) • Unleaded gasoline • TRU waste containing PCBs (when fire is involved) 				
	1. Product is rated NFPA 3 or 4 for any categories including special hazards? <i>Guidance – NFPA 3 and 4 mean serious to extreme hazards for health, flammability, and instability. The material involved will at a minimum detonate with shock, heat or water and/or is highly flammable (Flash Point less than 100°F), and/or requires the use of a full protective suit and a breathing apparatus. The substance may even be fatal on short-term exposure.</i>	NWP Fire Protection Engineer			

Contingency Plan Implementation Determination Matrix					
NFPA Criteria	Permit Criteria with Guidance	Technical Assistance Contact	Yes	No	NA
	2. Product is or contains a radioactive material?	Rad Control			
	3. Product is or contains a PCB and is involved in a fire?	SEC			
	4. Product is a DOT Class 2, Division 2.3 – poisonous gas? <i>Guidance – These can include but are not limited to chlorine, fluorine, and anhydrous ammonia; or one that poses an inhalation hazard (inhalation hazards also can be DOT Class 6, Division 6.1). Under normal conditions, these are not present at the WIPP site. These could potentially be transported on highways within the Land Withdrawal Area (LWA)</i>	NWP Transportation			
	5. Product is an EPA extremely hazardous substance (EHS)? <i>Guidance – many MSDS note EHS designations or this information can be found in EPA's Consolidated List of Lists (http://www2.epa.gov/epcra/consolidated-list-lists) or using the ORNL Tool http://homer.ornl.gov/rq/find.cfm. Typically the only EHS at the WIPP site is sulfuric acid.</i>	SEC			
	6. Product is a DOT Class 1, Division 1.1 or Division 1.2 explosive? <i>Guidance – These materials include explosives with a mass explosion or projection hazard (e.g. pyrophoric or pyrotechnical articles). Under normal conditions, these materials are not present at the WIPP site.</i>	NWP Transportation			
	7. Product is an organic peroxide, a materials dangerous when wet, or a cryogenic? <i>Guidance – Under normal conditions, these are not present at the WIPP site.</i>	NWP Transportation			
Container Size	8. Material involved meets any Section 3 product identification criteria AND container(s) involved are large or container size is unknown? <i>Guidance – NFPA 471 defines a large container to include a tank car, tank truck, stationary tank, hopper car/truck or multiple medium packages. At the WIPP site, this would include SWBs (medium packages) and fuel storage tanks.</i>	SEC			
Fire/Explosion Potential	9. Material involved meets any Section 3 product identification criteria AND there is high potential for a fire or explosion or for the fire to spread? <i>Guidance – Incident involves material that readily ignites, burns easily, or has the potential to cause a catastrophic explosion. (e.g., Materials have NFPA 3 or 4 ratings for flammability or instability.) Also answer yes if the materials involved have a significant health hazard when burned.</i>	NWP Fire Protection Engineer			
Release/Leak Severity	10. Material involved meets any Section 3 product identification criteria AND release may not be controllable even with special resources? <i>Guidance – It will most likely not be possible to stop or control the release.</i>	SEC			
Life Safety	11. Material involved meets any Section 3 product identification criteria AND the incident requires mass evacuation of a large area for life safety.	Emergency Services			

Contingency Plan Implementation Determination Matrix					
NFPA Criteria	Permit Criteria with Guidance	Technical Assistance Contact	Yes	No	NA
	<i>Guidance – This includes incidents at the WIPP that may require evacuation of the WIPP site and surrounding areas.</i>				
Environmental Impact (Potential)	12. Material involved meets any Section 3 product identification criteria AND the potential for environmental impact is severe? <i>Guidance – Incident will not be contained within the WIPP site. Cleanup and restoration of impacted area will likely be initiated at a time significantly removed from the initial incident (weeks or months) and require a significant time frame to recover (months or years). This criterion also includes releases of hazardous materials in an amount greater than or equal to 5 times the Reportable Quantity.</i>	SEC			
Container Integrity	13. Material involved meets any Section 3 product identification criteria AND the container is damaged to such an extent that catastrophic rupture is possible or it is unknown if the container has ruptured? <i>Guidance – The container is damaged to the extent that it is incapable of holding its contents or it is in danger of imminent rupture (e.g., bulging or pressurized).</i>	SEC			
If any of questions 8 – 13 are answered yes, the Contingency Plan must be implemented. Sign and date this matrix.					
If questions 8 – 13 are answered no, complete Section 4.					
Section 4 – Final Check					
N.A.	Is there an emergency event including a fire, an explosion, or a release of hazardous waste or hazardous waste constituents which could or has the potential to threaten human health or the environment? If the answer to this question is “Yes,” implement the Contingency Plan.	SEC			

This completed matrix documents the decision to implement or not implement the RCRA Contingency Plan.

RCRA Coordinator

Print Name

Signature

Date

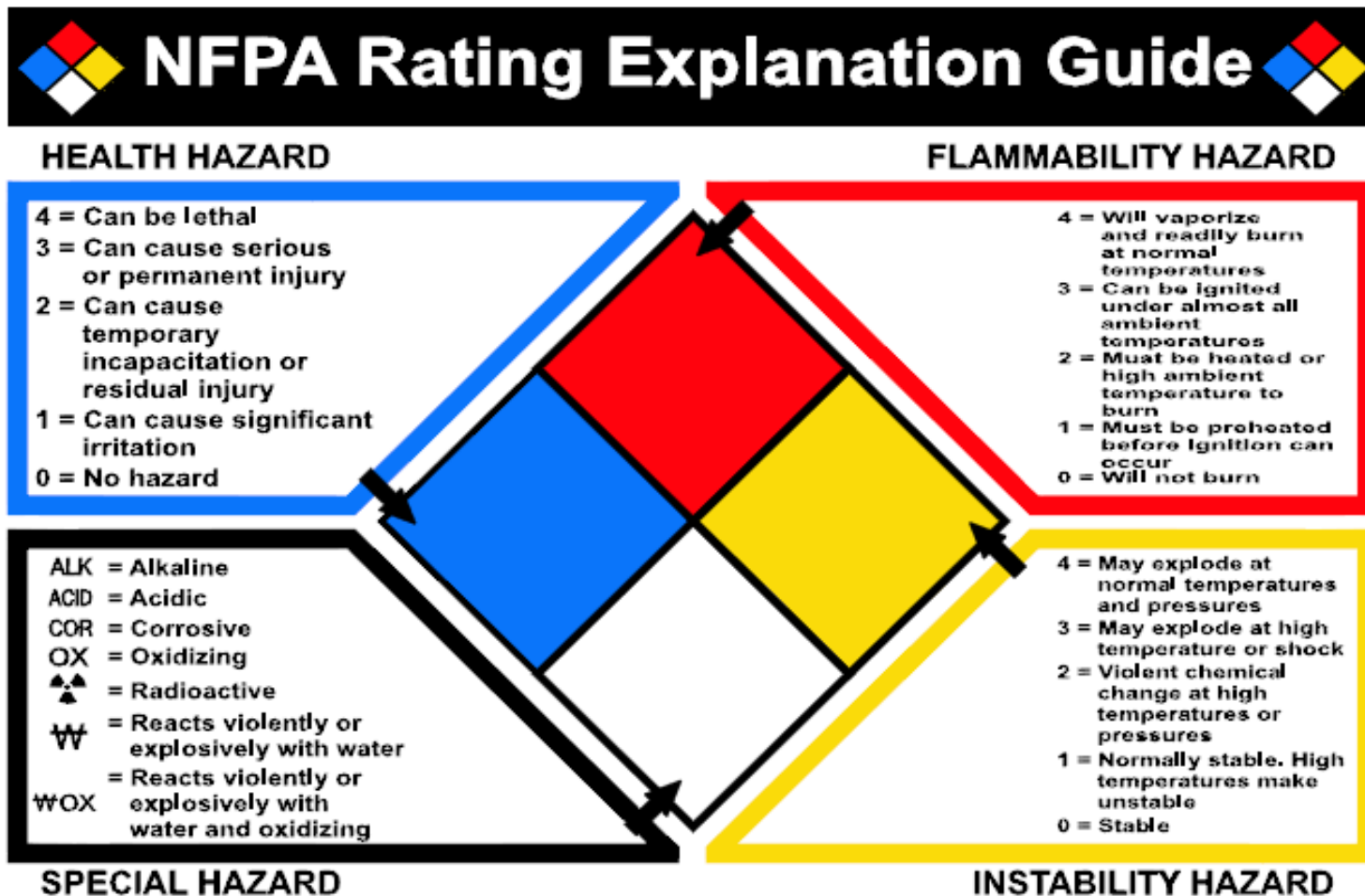
Site Environmental Compliance

 Print Name

Signature

Date






NFPA hazard categories refer to the categories in the NFPA 704 Standard. These are normally identified by the NFPA diamond. Three of the hazard categories (Health, Flammability, and Instability) are rated from 0-4. The fourth, Special, identifies specific hazards of the material/waste. Below is an example of the NFPA diamond and a description of the hazard category ratings.



This chart for reference only - For complete specifications consult the NFPA 704 Standard

NFPA Rating Information

(This chart conveys the same information as the NFPA Diamond in a matrix format.)

 NFPA Rating Explanation Guide 					
RATING NUMBER	HEALTH HAZARD	FLAMMABILITY HAZARD	INSTABILITY HAZARD	RATING SYMBOL	SPECIAL HAZARD
4	Can be lethal	Will vaporize and readily burn at normal temperatures	May explode at normal temperatures and pressures	ALK	Alkaline
3	Can cause serious or permanent injury	Can be ignited under almost all ambient temperatures	May explode at high temperature or shock	ACID	Acidic
2	Can cause temporary incapacitation or residual injury	Must be heated or high ambient temperature to burn	Violent chemical change at high temperatures or pressures	COR	Corrosive
1	Can cause significant irritation	Must be preheated before ignition can occur	Normally stable. High temperatures make unstable	OX	Oxidizing
0	No hazard	Will not burn	Stable		Radioactive
					Reacts violently or explosively with water
					Reacts violently or explosively with water and oxidizing

This chart for reference only - For complete specifications consult the NFPA 704 Standard

Attachment 2

Waste Isolation Pilot Plant
Hazardous Waste Permit
October 2013

Table D-1
Hazardous Substances in Large Enough Quantities to Constitute a Level II Incident

Chemical Description	Building Location	Hazard Category
Ethylene Glycol Solution - 35%	Buildings 411; 412; 451; 452; 486; 463; 474C; FAC 414	Immediate (acute) Delayed (chronic)
Gasoline, Unleaded GASC0001	FAC 480	Fire Immediate (acute) Delayed (chronic)
No. 1 Diesel Fuel Oil GASC0210	U/G Fuel Station; Oil Depot U/G; FACs 480, 255.1 & 255.2; Transport Tank; Building 456	Fire Immediate (acute) Delayed (chronic)
Multiple containers of TRU Waste as described in Permit Section 3.3.1	WHB Waste Shaft U/G	Delayed (chronic)
Hazardous materials in quantities that exceed 5 times the Reportable Quantity (Per DOE O 151.1) values as defined in 40 CFR 302	It should be noted that WIPP is not expected to possess such quantities.	Fire Immediate (acute) Delayed (chronic)



SAF-645

RCRA Emergency Coordinator
(WIPP Contingency Plan
Procedure)

Rev 4

Slide 1

Safety Minute

Terminal Objective

Upon completion of this course, the student will be able to perform the duties of the RCRA Emergency Coordinator (REC) in accordance with the WIPP Hazardous Waste Facility Permit (Permit) Attachment D, RCRA Contingency Plan (CP), and the driving regulations.

Mastery of the TO will be demonstrated by scoring 80 percent or higher on the course examination (open book).

Enabling Objectives

Permit specifies 28 objectives

Six additional objectives to emphasize decision process for implementation

Enabling Objectives

- EO 01 State the purpose of the Contingency Plan (CP).
- EO 02 State the level of authority the RCRA Emergency Coordinator (REC) holds for implementation of the RCRA Contingency Plan.
- EO 03 Describe the general responsibilities of the REC.
- EO 04 Identify WIPP emergency response groups and their responsibilities.
- EO 05 Describe the area covered by the CP, the types of materials and events that can trigger its implementation, and the emergency event stages the CP covers.
- EO 06 Describe events that do not require the CP to be implemented.
- EO 07 State when the CP is to be implemented.
- EO 08 Describe criteria II and III incidents.
- EO 09 Describe how to determine if the CP must be implemented.
- EO 10 State what it means to "implement the CP" and identify the emergency response procedures that implement the CP.
- EO 11 Describe when external notifications are required, the REC's responsibility related to notifications, and identify the procedures that assure notifications are made.
- EO 12 State information included in notifications to public safety and regulatory agencies.
- EO 13 Describe the typical notification sequence of emergency response personnel.
- EO 14 Describe initial response activities.
- EO 15 State when REC would request assistance from off-site agencies.
- EO 16 State the methods for notifying facility employees of an emergency.
- EO 17 Describe actions to be taken when a surface or underground evacuation is declared.
- EO 18 Describe the information needed to determine proper response to the incident and whether to implement the CP, who is primarily responsible for securing this information, and potential sources for finding the information.
- EO 19 Define the four criteria that are evaluated in the assessment stage of an incident.
- EO 20 Describe actions involved in control, containment, and correction of an incident.
- EO 21 Describe physical and chemical methods of mitigation.
- EO 22 Describe actions that are to be implemented in the event of a fire.
- EO 23 Describe actions that are to be implemented in the event of an explosion.
- EO 24 Describe actions to be taken in the event of spills.
- EO 25 Describe actions to be taken in the event of a container spill or leakage.
- EO 26 Describe response actions to spills, leaking, or punctured CH and RH TRU mixed waste container.
- EO 27 Describe actions to be taken in the event of a natural emergency (earthquake, lightning strike, etc.) involving hazardous waste or materials.
- EO 28 Describe response efforts in the event of spalling of ground in the underground.
- EO 29 Describe response efforts in the event of a roof fall in the underground.
- EO 30 State who is responsible for the radiological decontamination of personnel.
- EO 31 Describe events to be completed during the emergency termination phase.
- EO 32 Describe events to be completed during the cleanup phase.
- EO 33 Describe the record keeping and reporting requirements in the event the Contingency Plan is implemented.
- EO 34 State when Contingency Plan Implementation can be closed out.

Purpose of the CP

- **minimize** hazards to human health or the environment
- **from** fires, explosions, or any unplanned sudden or non-sudden release
- **of** hazardous waste or hazardous waste constituents
- **to** air, soil, or surface water

Because the CP is integrated with and implemented through the overall WIPP Emergency Management Program, it will also be implemented in the event of releases of hazardous materials that reach a pre-defined magnitude.

REC CP Authority & Responsibilities

The REC has the authority to commit the resources needed to carry out the contingency plan.

Responsibility

1. Assume responsibility for management of activities related to the assessment, abatement, and/or cleanup of an incident once notified of event

General responsibilities of the REC

Responsibility

3. Be thoroughly familiar with:
 - All aspects of the CP
 - All operations and activities at the facility
 - Location and characteristics of waste handled
 - Location of all records within the facility
 - Facility layout

REC CP Authority & Responsibilities

Responsibility

2. To take, direct, **or ensure actions are taken**, to minimize hazards to human health or the environment throughout an event that implements the CP

Actions

- Maintain overall control and responsibility of the emergency.
- Stop processes and operations when necessary.
- Remove or isolate containers.
- Ensure continued monitoring for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, if operations are stopped

CP Roles and Responsibilities

Match role to emergency response responsibilities

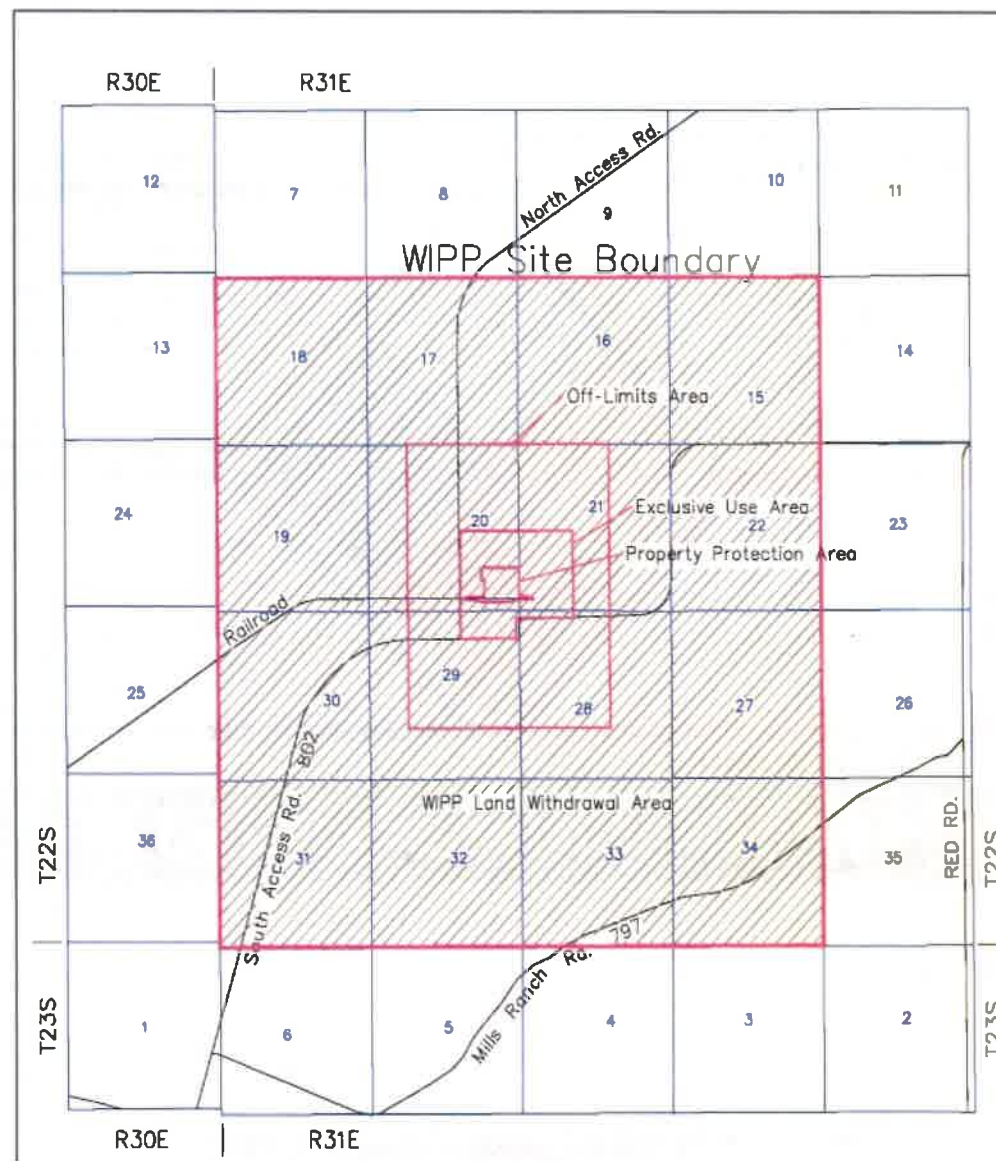
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|---------------|---|
| 1. ACOW | A. responsible for overall accountability at designated staging areas in the event of an evacuation. |
| 2. CMRO | B. initial responders concerning general underground emergencies involving medical, HAZMAT, incipient firefighting activities, and backup support for ERT |
| 3. COW | C. minimum of three NWP management positions (Crisis Manager, Safety Representative, Operations Representative) responsible for providing support for the REC to appropriately manage the emergency event. |
| 4. ERT | D. a trained team responsible for surface response, incipient and exterior firefighting operations, emergency first aid, and response to releases of hazardous waste (HAZWOPPER) or to Hazardous Materials Incidents (HAZMAT.) |
| 5. EST | E. employee whose regular job is that of full-time emergency responder. When designated, may act as the on-scene Incident Commander/coordinator for an emergency response event. During emergency conditions, conducts inspections on the facility fire suppression systems emergency equipment and completes specific sections of the WIPP Hazardous Material Incident Report. |
| 6. FSM | F. responsible for assuring that personnel are evacuated from their assigned area or building during evacuations. |
| 7. FLIRT | G. volunteer force that consists of underground personnel as supplemental first responders in an underground event, and as support for ESTs and ERT. |
| 8. MRT | H. responsible for CMR operations, coordination of all facility communications, and maintaining the official facility log. |
| 9. OW | I. senior shift representative in charge of all plant operations and for directing activities at the WIPP site during emergency situations as the REC. |
| 10. EOC Staff | J. coordinates personnel accountability for particular sections of the site. |

Determining when to Implement the CP

Did the event occur...

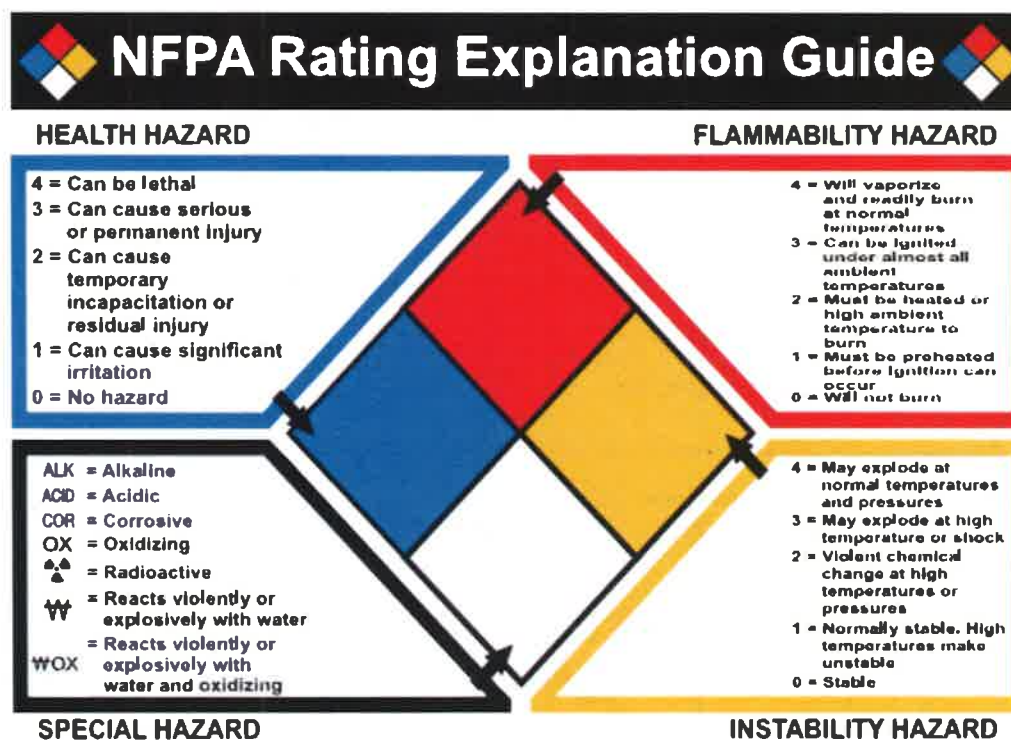
- within the WIPP property protection area,
- on the north and south access roads or right of ways to the Hobbs or Jal highway, respectively, or
- anywhere on the 16 sections of Land Withdrawal Area.

Note: specific criteria must be met



Did the event involve....

- Hazardous waste
 - TRU waste
 - Site generated (e.g. 474)
- Hazardous materials /substances

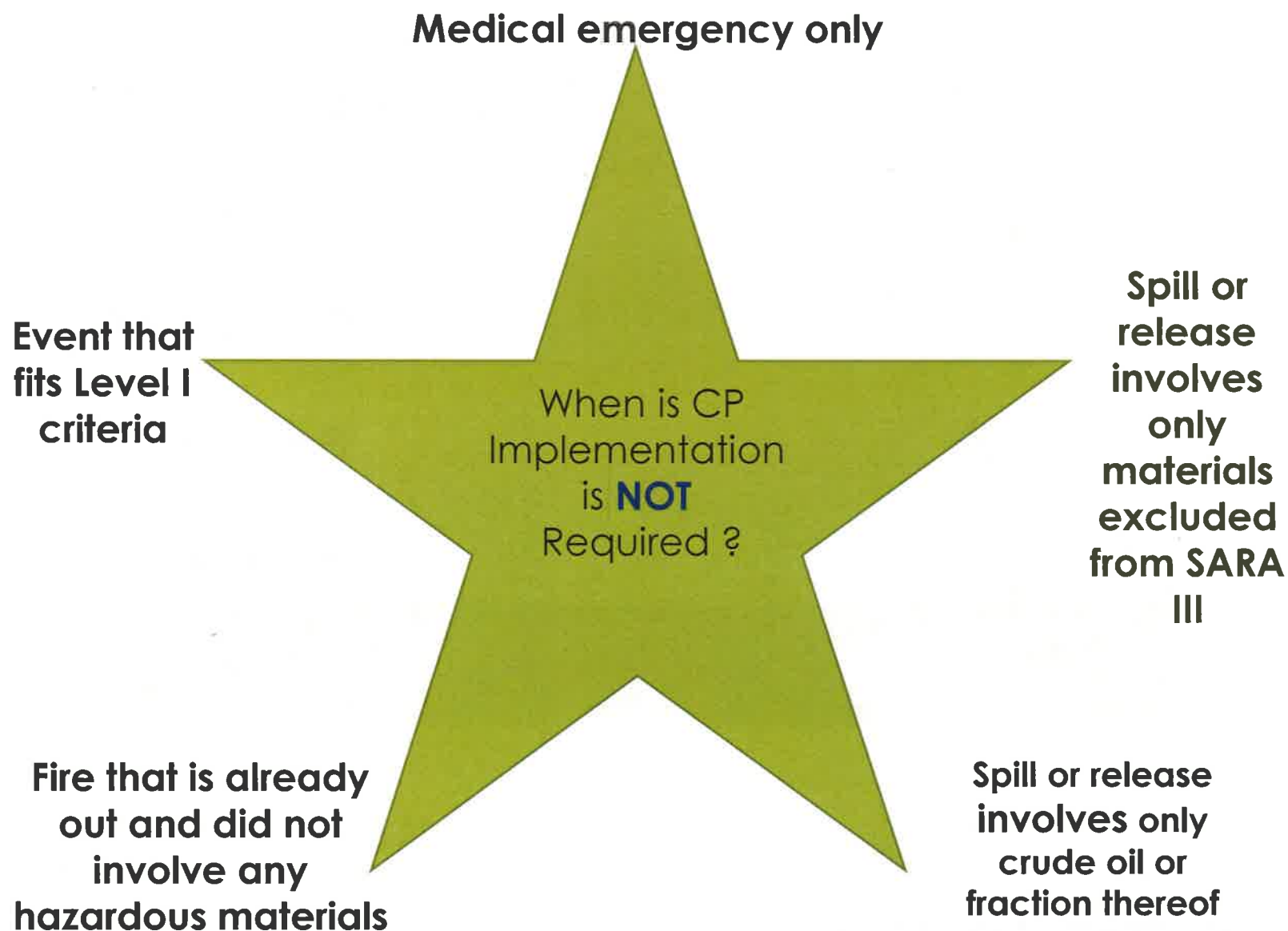


This chart for reference only - For complete specifications consult the NFPA 704 Standard

Note: specific criteria must be met

Stage(s) of Event Management Covered by CP

Stage	Covered when CP Activated
Assessment	✓
Response	✓
Abatement	✓
Cleanup	✓
Close out reporting	✓



- Adapted from NFPA 471, Table 5.1 (used for response planning by emergency responders)
- Characterizes events into levels of significance based on potential or actual hazards
- Significance based on
 - Product Identification
 - Fire Explosion Potential
 - Release/Leak Severity
 - Life Safety
 - Potential or actual environmental impact
 - Container Integrity
- NMED & WIPP agreed to use criteria when original CP was developed.

Background

CP Implementation
Determination Criteria -
Levels I, II, and III

Level 1 Criteria...

1. Materials DO NOT require a DOT placard
2. Materials are rated NFPA 0 or 1 for any category
3. Materials are DOT 'Other Regulated Materials'
4. Materials instability rating is < 2
5. No release or a small release easily contained or confined with readily available resources
6. No life threatening situation from materials involved
7. No, or minimal, potential environmental impact

- Event meets criteria ***predetermined to be Level II or III***
 - Event specific procedures (e.g. fire, spill)
- Event meets criteria for ***Level II or III***
- ***REC determines*** emergency event has threatened, or has the potential to threaten, human health or environment
- ***REC chooses*** to implement based on professional expertise and conservative judgment, ***even if*** Level II or III criteria are not met.

**Implement the CP
When....**

Level II Criteria

NFPA Rating Explanation Guide

FLAMMABILITY HAZARD

- 4 = Will vaporize and readily burn at normal temperatures
- 3 = Can be ignited under almost all ambient temperatures
- 2 = Must be heated to high ambient temperature to burn
- 1 = Must be preheated before ignition can occur
- 0 = Will not burn

- 4 = May explode at normal temperatures and pressures
- 3 = May explode at high temperature or shock
- 2 = Violent chemical change at high temperatures or pressures
- 1 = Normally stable. High temperatures make unstable
- 0 = Stable

INSTABILITY HAZARD

Consult the NFPA 704 Standard

Onsite Materials

Material meets

- Requires D
- Rated NFP
- EPA regul

- Ethylene glycol
- Diesel fuel
- TRU waste
- TRU waste containing PCBs (when no fire is involved)

AND
meets
one or
more

- Medium or unknown container size
- Potential for fire to spread or material to explode
- Release may not be controllable without special resources
- Event requires evacuation of limited, localized area for life safety
- Potential environmental impact limited to soil and air within incident boundaries
- Container is damaged but able to contain contents to allow handling or transfer or product

Level III Criteria

Material
is one
or more

Onsite Materials

- Sulfuric acid is an EHS (large batteries)
- Unleaded gasoline
- TRU waste containing PCBs (when fire is involved)

AND
meets
one or
more

7. Container size is large or unknown
8. High potential for fire or explosion or for fire to spread
9. Release may not be controllable even with special resources
10. Requires mass evacuation of a large area for life safety
11. Potential for environmental impact is severe
12. Container is damaged such that catastrophic rupture is possible or it is unknown if the container has ruptured.



ER4902-Step 2.3



ER4908-Step 4.8
ER4811-Step 4.11



None

Pre-Determined
Level II or III
Events

“Contingency Plan Implementation Determination Matrix”

- NEW Form EA12ER4920-1-0

Contingency Plan Implementation Determination Matrix					
NFPA Criteria	Permit Criteria with Guidance	Technical Assistance Contact	Yes	No	NA
Screening Section					
N.A.	1. Is this a medical emergency only? <i>Guidance – Includes heart attack, stroke, fainting and including medical only mass casualty</i>	N.A.			
	2. Spill or release only involved materials excluded from regulation by SARA Title III, Statute 42.U.S.C. 11021(e)? <i>Guidance – Excluded materials that could be at the WIPP site are:</i> <ul style="list-style-type: none"> Substances present in the same form and concentration as a product packaged for distribution and use by the general public. Any substance to the extent it is used in a research laboratory or a hospital or other medical facility under the direct supervision of a technically qualified individual. 	Site Environmental Compliance (SEC)			
	3. Spill or release involved only crude oil or fraction thereof? <i>Guidance – EPA interprets CERCLA section 101(14) to exclude crude oil and fractions of crude oil from the definition of hazardous substances. This includes substances that indigenous in crude oil (e.g. Benzene). Also included in this exclusion are natural gas, natural gas liquids, liquefied natural gas, and synthetic gas usable for fuel. These substances are not expected to be on the WIPP site but could be released on the access roads or right of ways.</i>	SEC			
	4. The fire is already out and did not involve any hazardous materials? <i>Guidance – Examples are a fire in trash can, greasy rags, etc. Fire is controlled at incipient stage.</i>	N.A.			
If the above screening questions are answered yes or NA, this incident does not require implementation of the Contingency Plan. Sign and date this matrix. Otherwise, complete Section 1.					

- Must Be Used** to document the basis for deciding whether or not to implement the CP

See Handout EO 08 and Attachment

Steps to Make Determination

Question	Answer	Action CP
1. Is this even within the geographical area covered by the CP	Yes No	Continue to Step 2 Do not implement CP
2. Does the event meet the screening or Level I criteria	Yes	Do Not Implement CP
3. Does event meet specific incident parameters as spelled out in incident "type" procedures ?	YES	Implement CP
4. Does completion of Determination Matrix require implementation of CP?	YES	Implement CP
5. Have event characteristics changed such that hazards to human health or environment have increased	YES	REPEAT STEPS 1 & 2

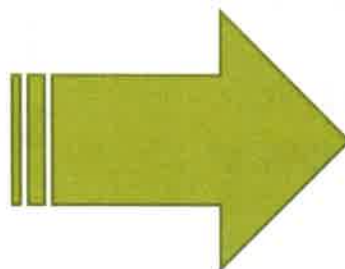
See Handout, EO 09 for more details on each of these steps

What Does Implementing the CP Mean?

Implement WIPP Emergency Response Procedures as they apply to the type of incident

- WP 12-ER3903, *Termination, Reentry, and Recovery*
- WP 12-ER3906, *Categorization and Classification of Operational Emergencies*
- WP 12-ER4902, *Hazardous Material Spill and Release Response*
- WP 12-ER4903, *Surface Radiological Event Response*
- WP 12-ER4904, *Underground Radiological Event Response*
- WP 12-ER4907, *Evacuation / Sheltering in Place*
- WP 12-ER4908, *Surface Fire Response*
- WP 12-ER4910, *Earthquake Response*
- WP 12-ER4911, *Underground Fire Response*
- **WP 12-ER4920, RCRA Contingency Plan Implementation**

WP 12-ER4920
“RCRA
Contingency
Plan
Implementation”



- **Determine when to implement the CP**
- **Document the basis for the decision**
- **Document the implementation**
- **Initial and 15 day reporting**

**UPCOMING REVISION WILL INCLUDE CRITERIA FOR
EXITING THE CONTINGENCY PLAN**

Make notifications as directed in CP

Notifications

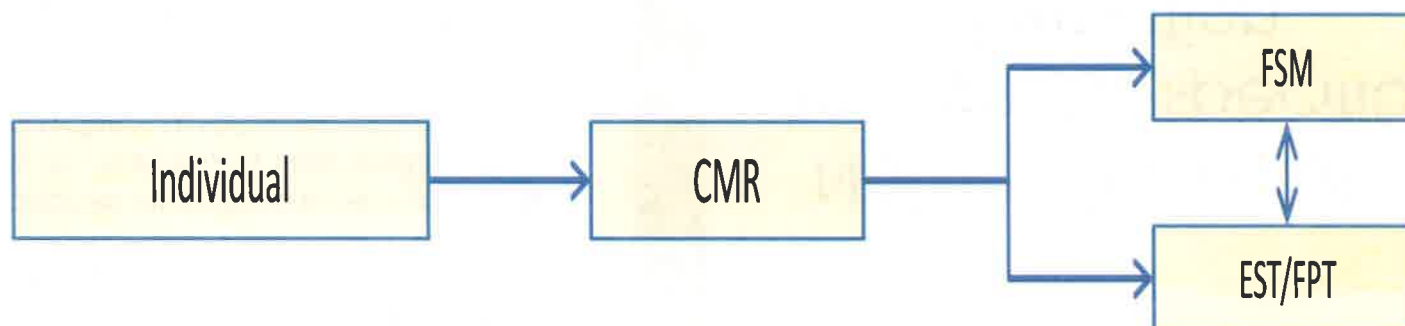
- must be made when a CP event has occurred that could threaten human health or the environment outside the facility.
- will be made in accordance with WIPP Procedures
 - **WP 12-ER3906**
Categorization and Classification of Operational Emergencies
 - **WP 12-ER4920**
RCRA Contingency Plan Implementation

- Name and address of the facility
- Name and telephone number of the person making report
- Type of incident (fire, explosion, or release)
- Date and time of incident
- Type and quantity of materials involved, to the extent known
- Source of the incident
- Extent of injuries, if any
- Possible hazards to human health and the environment (air, soil, water, wildlife, etc.) **outside** the facility
- Name, address and telephone number of the party in charge of or responsible for the facility or activity associated with the incident.
- Name and phone number of the REC
- Identity of any surface and/or groundwater involved or threatened and the extent of actual and potential water pollution
- Steps being taken or proposed to contain and clean up the material involved in the incident.

Notifications must
include this specific
information

WP 12-4920 directs this
content be provided

Implementing the CP Requires REC to Know



- The initial (typical) sequence for internal notification of an event to the REC
- How initial response and support teams will be mobilized
- How information will be gathered to assess the significance of the event and plan an appropriate response
- Initial response activities

CP's initial response actions are carried out by several different parties....

Who	Initial Response Actions	Procedure
REC	Determine if supplemental emergency responders (ERT, FLIRT, MRT, off-shift personnel) are needed If needed, initiate action to secure resources.	Type Specific ER Procedures
EST/FPT	Investigate to determine pertinent event information.	Response Teams Standard Operating Guides & Training
REC	Assess event using information from emergency responders and other organizations Determine if CP and/or EOC needs to be implemented.	Type Specific ER Procedures WP 12-ER4920, RCRA CP Implementation
FSM	Assess need for and coordinate, when applicable, use of <ul style="list-style-type: none"> • mutual aid agreements with local responders and agencies • other external resources (e.g. Federal Response Plan. 	Type specific ER procedures WP 12-ER3906, Categorization and Classification of Operational Emergencies

See Handout, EO 14 for this matrix

CP's initial response actions continued ...

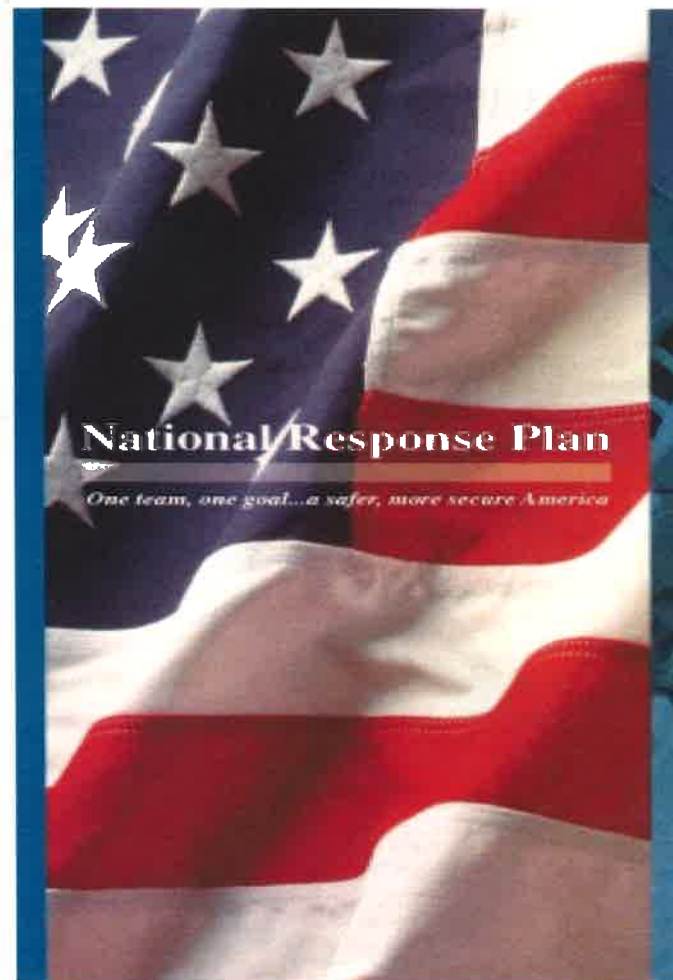
Who	Initial Response Actions	Procedure
CMR	Notify facility employees of the event using site protocols (alarms, warnings, or announcements).	Type Specific ER Procedures
REC	Determine appropriate notifications (local, state, national) After consultation with DOE, assure notifications are made.	WP 12-ER3906 (Cat & Class) WP 12-ER4920, (RCRA CP Implementation)
REC	Determine if evacuation is appropriate Determine area to evacuate (release site/area, building, PPA, LWA) Direct evacuation according to procedure(s).	WP 12-ER4907, Evacuation / Sheltering In Place WP12-ER3906 (Cat & Class)
REC	Be available to advise officials on whether or not local areas should be evacuated.	

See Handout, EO 14 for this matrix

When will REC
request assistance
from off-site
agencies ?

Off-site agencies...

- MOU parties
- DOE
- National Response Plan resources



Internal Notifications

RCRA regulations require that all facility personnel be notified when there is an imminent or actual emergency situation.



Internal facility alarms or communications system meet this requirement

Method	Description
Local Fire Alarms	Ringling Bell
Surface Evacuation Alarm	Yelp Tone
Underground Evacuation Alarm	Yelp Tone with Flashing strobe lights
Site Notification System	PA system, Plectrons Pagers, Portable Radios

REC Actions to be taken for Surface or Underground Evacuation

- Decide staging area to be used (site evacuation)
- Initiate notification by directing CMRO to sound the surface evacuation alarm.
- Advise office wardens of the staging area(s)

CP also describes actions taken by site personnel during evacuation.

Which procedure directs evacuation?

- Notify Security so that security will open the gates and facilitate egress.
- Call for underground personnel to report to assembly areas. (REC may call for underground personnel to report to assembly areas for surface and /or underground event.)

- Assess actual or potential impact of event and determine appropriate response
- Incident Response
 - General Methods
 - Type Specific Methods
- Post Emergency Actions
- Exiting CP

REC Responsibility

“Be thoroughly familiar with contents of CP”

What information is needed to determine a proper response and whether to implement CP



Who is primarily responsible for gathering information?

- Emergency Response Personnel
- Transportation
- Environmental Compliance
- Safety
- Industrial Health



Physical, cognitive and technical data

- | | |
|--------------------|-----------------------|
| • Container Shape | • Markings/Color |
| • Container Number | • Placards/labels |
| • Location | • D.O.T. (UN) numbers |
| • Occupancy | • NFPA Ratings |

Internal data systems/resources

- Safety Data Sheets
- Waste Data System
- Technical experts

Four criteria are to be used
to evaluate an event in the assessment stage



Ensure reasonable measures are taken so that fires, explosions, or releases do not occur, recur, or spread to TRU mixed waste or other hazardous materials during response, cleanup, and recovery

**Incident Response -
CP Specifies REC
General Actions For
Control, Containment,
and Correction of
Incident**

Reasonable Measures



- Maintain overall control of response until emergency is terminated.
- Remain in contact with responding personnel
- Implement MOU's if needed
- Stop, as needed, processes and operations affected.
- Ensure continued monitoring of stopped processes / operations
- Restrict personnel not needed for response from the incident scene
- Curtail non-essential activities in area
- Evacuate area, as needed
- Authorize restart of processes / operations (to ensure areas/equipment are safe for reentry/use)

Reasonable Measures



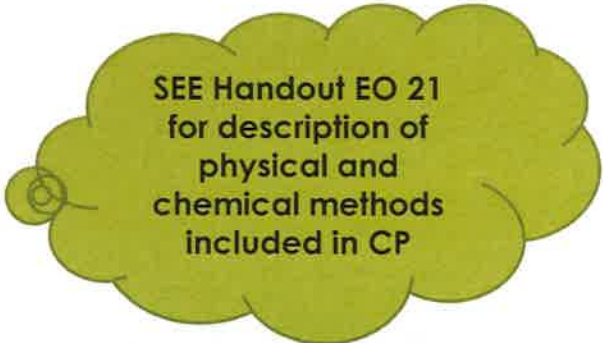
Ensure....

- Released materials are collected and contained
 - Containers are removed and isolated
 - Containers/drums from affected areas are over packed and/or removed
 - Preliminary inspections of adjacent facilities and equipment to assess damage are conducted
 - Damaged equipment and facilities are repaired as appropriate
-
- Temporary dikes are constructed, monitored, and reinforced as needed to protect stormwater and sewage
 - Ignitable liquids are segregated, contained, confined, diluted, or otherwise controlled
 - Fire equipment is on standby where ignitable liquids have or may be released
 - Ignition sources are kept out of the area.
 - No waste received or disposed of in an affected area until cleanup operations are complete
 - TRU mixed waste remains in Permitted HWDUs

See Handout EO 20 for this list

Mitigation Methods Must Be Selected To:

- ***Minimize contamination and contact to people***
- ***Limit migration of contaminants***
- ***Properly dispose of contaminated material***



SEE Handout EO 21
for description of
physical and
chemical methods
included in CP

CP Describes Response Actions for Specific Types of Events

Fire
Explosion
Spill / Release
Natural Emergency
Underground Spalling of Ground
Underground Roof Fall

CP actions for a FIRE event...

- Response is limited to incipient and exterior structure fires unless directed otherwise as part of a lifesaving attempt.
- WIPP personnel are trained to, and can, respond to interior structure fires. However, in the event of such a fire it is anticipated that the appropriate MOU's will be activated.
- For underground fires
 - first response option is to apply mechanical methods to stop the fire (e.g. cut electrical power)
 - the last option is to reconfigure ventilation using control doors.



See Handout EO 22 for list of CP described actions for fire event

Actions in the Event of an Explosion

CP actions that are unique to an explosion event that involves or threatens hazardous or TRU mixed waste or hazardous materials are:

- ✓ Evacuate the affected area.
- ✓ CMRO immediately notifies the EST and the REC.
- ✓ EST renders aid and assistance to injured personnel first.
- ✓ REC establishes communication and other site personnel and organizations as necessary.
- ✓ Incident Commander (EST) directs emergency response efforts to ensure safety of personnel and control of possible fires.
- ✓ Isolate, remove and dispose of radioactive or hazardous waste materials found at the scene appropriately by trained and qualified personnel.

Actions For Spill Events

For a level II or III spill/release event, the REC is to:



- Evacuate the immediate area
- Review facility records to determine identity and chemical nature of released material
- Implement standard entry team procedures
- Secure source of release
- Ensure runoff is contained
- Ensure TRU mixed waste that may be incompatible with released material is managed in the affected area until cleanup procedures are complete

CP Actions for a Container Spill or Leak

- Assemble appropriate response equipment.
- Contain the material
- Stop the release
 - transfer released material to a container in good condition and/or
 - over pack leaking container
- Determine extent of migration of material
- Initiate cleanup actions (e.g. neutralization, vacuuming, excavation)



Actions for CH and RH Container Spill, Leak, or Puncture

RESPONSE EFFORTS ARE CONDUCTED IN THREE PHASES

Event

- Stop work
- Warn others (notify CMRO)
- Isolate area
- Minimize exposure
- Close off unfiltered ventilation

Reentry

- Issue RWP
- Appropriate personnel perform surveys, sample and mitigate any problems
- Smears and air samples counted
- Decon and Recovery Plan developed

Recovery

- Post Area
- Appropriate personnel perform surveys, sample and mitigate any problems
- Smears and air samples counted
- Decon and Recovery Plan developed

See Handout EO 26 for list of CP described actions

Actions - Natural Emergency Involving Hazardous Waste/Materials

- ✓ Inspect or check the following areas for damage and/or leaking containers or containment systems.
- ✓ Conduct a general survey of the site looking for signs of land movement, etc.
- ✓ Take any necessary corrective measures, however temporary, to rectify potential or real problems.
- ✓ Record inspection results.

Examples

Earthquake

Lightning Strike

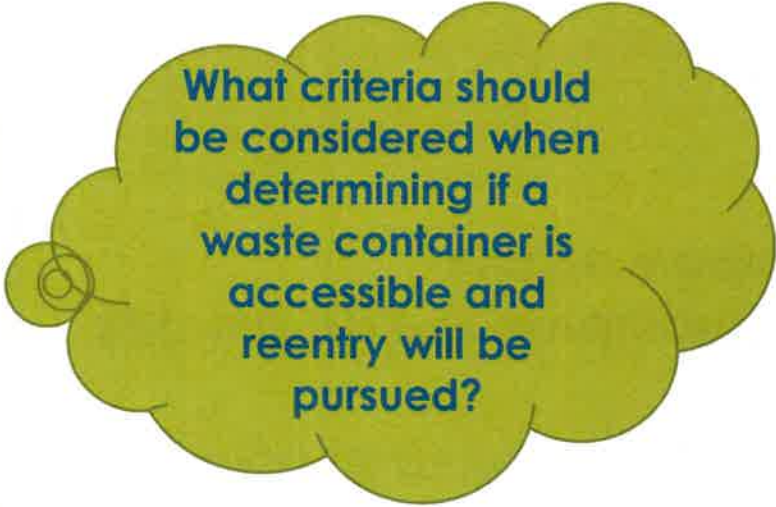
**Facility emergency involving
underground structural integrity**

See Handout EO 27 for actions

Two phases

- Reentry
- Recovery

See Handout, EO 28 for specific actions in each phase.



What criteria should be considered when determining if a waste container is accessible and reentry will be pursued?

Actions - Spalling of Ground in Active Waste Emplacement Area

Actions – Roof Fall in Underground

REC will take (coordinate) the following actions for a roof fall in active waste emplacement area...

Reentry

- inspection of back and assurance safe conditions
- Restriction of access in ventilation downstream of incident
- Withdraw room from ventilation
- Survey for rad contamination
- Installation of barricades

Recovery

- Inspect containers and containment
- Determine if area allows for continued waste disposal
- Decontaminate area as appropriate
- Inspect affected equipment for proper function
- Repackage spilled waste, (depending on volume)
- Characterize containers
- Replace removed and derived waste containers into the waste stack
- Update the WDS
- Document Activities and Record Results

Radiological Decontamination of Personnel

The CP states that Radiological Control staff are responsible for decontamination of personnel contaminated with radioactive material.



See Handout EO 30 for further CP details on decontamination

Post Emergency Actions and Close Out of CP Implementation

To Transition from Emergency to Clean Up

1
**Emergency scene
must be stable**

2
**Release of hazardous
substances must be stopped.**

5
**Area of contamination
must be adequately
secure from
unauthorized entry.**



3
**Reaction of hazardous
substances must be
controlled**

4
**Released hazardous substances must be
contained in a localized and manageable area**

These Actions Must be Complete (per CP)

Events Completed - Clean-Up Phase



- Incident specific decon plan is developed and used
- IC remains on scene until hazard is mitigated
- Verification samples (air, soil, water) are directed as necessary
- Provision is made for treatment, storage, or disposal of recovered waste/contaminated materials
- No waste incompatible with released material is treated, stored, or disposed until cleanup is complete
- All emergency equipment listed in CP is cleaned and readied for use or replaced before operations resume.

Required Record Keeping and Reporting

Recordkeeping

- Ensure time, date, and details of event are recorded in facility log maintained by CMRO (REC)
- Complete Hazardous Material Incident Report (EST/FPT, REC, CMRO, SEC, Haz Waste Operations Representative)
- Document decision to implement CP via completed Contingency Plan Implementation Determination Matrix (REC)

Reporting

- 15 day Report
 - EPA
 - NMED
- Notification that emergency equipment is clean, repaired or replaced and is fit for its intended use

- Emergency response is complete
- Complied with requirements for cleanup of affected area(s)
- Emergency equipment clean and fit for intended use
- Notification of the above made to
 - NMED
 - EPA

When does CP
implementation
end?

- Questions?
 - On Course
 - On governing procedure
 - On exam
 - On program

- Feedback?
 - Verbal for Instructor
 - Student Questionnaire

ATTACHMENT 9
WP 12-ER4911 UNDERGROUND FIRE RESPONSE
8 PAGES

WP 12-ER4911

Revision 18

Underground Fire Response

Emergency Response Procedure

EFFECTIVE DATE: 11/25/15

David Stuhan
APPROVED FOR USE

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3.0 SUBSEQUENT ACTIONS 7

4.0 EXIT CONDITIONS 8

CHANGE HISTORY SUMMARY

REVISION NUMBER	DATE ISSUED	DESCRIPTION OF CHANGES
14	07/31/14	<ul style="list-style-type: none"> Added WP 12-ER4903, WP 12-ER4920, and EA12ER4920-1-0 to References table. Designated DOE O 151.1C and the HWFP as Key Steps. Added notes before step 3.1 regarding air purifying respirator limitations and separation of potentially contaminated personnel. Added substep 3.1.1 regarding fueled vehicle fire response. Moved step 3.4 to step 3.6. Added step 3.7 regarding FSM action if fire involves a waste container or is in a contaminated area. Deleted step 4.1 regarding disabling filtration. Added substep 4.2.3 and steps 4.3 through 4.5 regarding U/G control door closure, in accordance with required CAP actions. Deleted steps 4.4 through 4.7 regarding inundation of shaft(s) and evacuation measures. Added step 4.10 incorporating actions required by WP 12-ER3906 and WP 12-ER4907. Added steps 4.12 and 4.13 regarding FSM's evaluation of the need to implement the RCRA Contingency Plan for events other than those specified in step 4.14. Clarified in step 5.1 specific exit conditions.
15	09/23/14	<ul style="list-style-type: none"> Complete rewrite. Major changes include: <ul style="list-style-type: none"> - Revised notification and activation requirements. - Revised immediate and subsequent action statements and re-ordered. - Added Note above step 3.1.4 clarifying that NO change in ventilation configuration is permitted when personnel are underground.
16	01/07/15	<ul style="list-style-type: none"> Updated References table. Changed in substep 3.2.7 referenced document from WP 12-ER3906 to WP 12-ER3907.
17	07/09/15	<ul style="list-style-type: none"> Removed all CMR and FSM steps and responsibilities. Updated References table. Removed Key Steps.
18	11/25/15	<ul style="list-style-type: none"> Updating to align with new MP 1.55, <i>Underground Firefighting</i>, and updated 12-ER.04, <i>Fire Suppression Operations</i>.

1.0 ENTRY CONDITIONS

1.1 Any of the following conditions have occurred:

- Fire or smoke is discovered in the underground.
- Underground (U/G) fire alarm is alarming.
- Central Monitoring Room Operator (CMRO) makes notification of underground fire.
- Carbon Monoxide reading of greater than or equal to 50 ppm.

2.0 IMMEDIATE ACTIONS

CAUTION

Air purifying respirators for radiological protection will not protect against carbon monoxide.

2.1 Emergency Notifications and Communications

2.1.1 U/G worker discovering a fire underground,
IMMEDIATELY **PERFORM** the following:

- **MAKE** verbal announcement to workers in the area.
- **ACTIVATE** any nearby audible alarm, if available.

NOTE

When notifying CMRO, personnel should:

- Speak slowly, clearly, and accurately to include nature, severity, and location of the incident.
 - Use repeat backs when exchanging critical information to ensure effective and accurate communications.
 - Avoid using acronyms during emergency notifications so that all personnel are clear on what is being communicated.
-

- **NOTIFY** the CMRO by mine pager phone or by calling the Central Monitoring Room (CMR) at Ext. 8111, **AND REPORT** the following at a minimum:

- Fire or emergency location
- Your name/job title
- Material involved
- Any known hazards
- On-scene conditions (e.g., smoke, injuries, egress conditions,)

2.1.2 U/G worker discovering the fire, **IF** conditions or hazards change, **THEN NOTIFY** CMR, when it is safe to do so.

2.1.3 U/G workers not in the immediate area of the fire, **EVACUATE** to the appropriate hoist station, as directed by CMR.

2.1.4 U/G workers NOT in the immediate area and NOT attempting to extinguish the incipient stage fire, at first sign of fire or smoke, **DON** self-rescuer or Self-Contained Self-Rescuer (SCSR) for evacuation.

NOTE

Incipient stage fires underground threatening radiological waste will be extinguished according to this procedure, if safe to do so.

Radiological waste that generates heat or smoke from an internal reaction will not be extinguished and an immediate evacuation will occur.

- 2.1.5 U/G worker discovering the fire or in the immediate area of the fire, **IF** the fire involves radiological materials, **THEN PERFORM** the following:

- **COMMUNICATE** the radiological hazard to other workers.
-

NOTE

Radiological Control personnel will attempt to segregate potentially contaminated workers as they exit the underground to limit the spread of contamination, however, life safety/medical treatment always has the highest priority.

- **REMAIN SEPARATED** from other mine personnel if safe to do so until cleared by Radiological Control personnel to minimize spread of contamination.

- 2.1.6 U/G workers in the Contaminated Area, **PERFORM** the following:

- **IF** smoke is visible **OR IF** directed by an emergency announcement, **THEN IMMEDIATELY DON** self-rescuer or self-contained self-rescuer **AND PROCEED** to the egress hoist station for a rapid evacuation.
- **IF** smoke is NOT visible, **THEN IMPLEMENT** a controlled egress to the transition line, **DOFF** personal protective equipment/protective clothing **AND PERFORM** self-surveys according to Rad Worker training, if time permits and it is safe to do so, **AND PROCEED** to the egress hoist station.

- 2.1.7 Hoist Operators, upon notification of an underground fire, **IMPLEMENT** WP 04-HO1002, *Salt Handling Shaft Operation*, WP 04-HO1003, *Waste Handling Hoist Operation*, or WP 04-HO1004, *Air Intake Shaft Operation*, **AND PERFORM** the following:

- **COMPLETE** any man trips in progress.
- **POSITION** the conveyance(s) at the Shaft Station.

REFERENCE USE

3.0 SUBSEQUENT ACTIONS

3.1 U/G Fire Emergency Actions and Extinguishment

NOTE

An “incipient fire” is a fire that does not fill an entire space, can be approached from the fresh air side with a clear exit path wearing normal work clothes, without supplemental breathing equipment, and can possibly be extinguished with available equipment. This may be a fire smoldering for several hours. A fire is considered to be beyond the incipient stage when the use of thermal protective clothing or self-contained breathing apparatus is required.

NOTE

Fire Suppression Vehicles are staged in strategic locations within the mine based on underground work activities. These Underground Suppression Vehicles are equipped with one dry chemical fire extinguisher and one extinguisher with Aqueous Film-Forming Foam solution. Portable fire extinguishers are also available on all underground vehicles.

NOTE

WIPP Fire Department personnel and Emergency Response Team members assigned underground will not perform any coordinated firefighting underground and will only perform the same level of firefighting as other Underground Workers.

3.1.1 U/G workers who discover the fire or are in the immediate area may **PERFORM** the following, if it is safe to do so:

- **IF** the fire involves fueled vehicles,
THEN IMMEDIATELY ACTIVATE the on-board manual/auto fire suppression system (if vehicle is so equipped).
- **IF** the incipient fire can be approached safely,
THEN ATTEMPT TO EXTINGUISH the fire with a hand-held fire extinguisher.
- **IF** trained on the U/G Fire Suppression Vehicle,
THEN ATTEMPT TO EXTINGUISH the incipient fire.

NOTE

A complete evacuation of the underground is required for all fires, even for incipient fires that are immediately extinguished.

- **IF** the fire is extinguished,
THEN DON self-rescuer or self-contained self-rescuer
AND EVACUATE.
- **IF** the fire cannot be extinguished,
THEN DON self-rescuer or self-contained self-rescuer
AND EVACUATE.

3.1.2 U/G worker attempting to extinguish the incipient fire, **IF** the fire has been extinguished **OR IF** attempts to extinguish the fire are being abandoned,
THEN NOTIFY CMR, when it is safe to do so.

3.1.3 Hoisting Toplander and Underground Controller, **GO TO** WP 04-AD3013, *Underground Access Control*, **AND COMPLETE** underground emergency accountability.

4.0 EXIT CONDITIONS

4.1 **WHEN** the following conditions have been confirmed to exist, as applicable, **EXIT** this procedure:

- Fire is extinguished and action has been initiated in accordance with WP 15-MD3102, *Event Investigation*, as required.
- An alarm or condition has been verified as a false indication and there is no impact to worker health and safety.
- Underground evacuation has been completed.

ATTACHMENT 10
WIPP THREE YEAR DRILL AND EXERCISE PROGRAM FY 2015 - 2017
7 PAGES

U.S. DEPARTMENT OF ENERGY CARLSBAD FIELD OFFICE



WASTE ISOLATION PILOT PLANT
THREE-YEAR DRILL & EXERCISE PLAN
FY2015 – FY2017

REVISION 0

EMERGENCY MANAGEMENT AND SECURITY DEPARTMENT

Prepared By: Drill and Exercise Program

EXERCISE PROGRAM OVERVIEW

To validate emergency management response elements, U. S. Department of Energy (DOE) Order 151.1C, *Comprehensive Emergency Management System*, requires exercises be developed and conducted based on site-specific hazards. A formal exercise program ensures the testing and validation of elements of a facility or emergency management program elements over a period of time. The exercise program provides a continuing series of periodically conducted exercises to evaluate emergency response capabilities and to provide assurances that members of the Emergency Response Organization (ERO) are prepared to respond promptly, efficiently, and effectively to an actual emergency.

Exercises test the adequacy and effectiveness of the following response elements: organizational command and control, implementation of procedures, notification and communication systems, emergency equipment, ERO performance, and overall emergency response and recovery program performance. While exercises are designed and conducted for maximum realism and attempt to duplicate the sense of stress inherent in an actual emergency, drills are an opportunity for low-stress training.

The Waste Isolation Pilot Plant (WIPP) has two separate distinctive locations identified with one Emergency Planning Hazards Assessment (EPHA). These locations are identified as the Waste handling Building and the underground operation. The WIPP is required to conduct a series of specific drills that include both discussion-based and operations-based drills to ensure facility level and site-level responders are prepared to respond to an actual emergency.

The WIPP is required to conduct an evaluated facility operations-based exercise annually. In addition, the WIPP will conduct a site operations-based exercise every 3 years that includes an external departmental evaluation and will include offsite response organizations.

WIPP participates in the No-Notice Exercise (NNX) Program sponsored by the U.S. Department of Energy/National Nuclear Safety Administration (DOE/NNSA) Office of Emergency Management. The primary purpose of the NNX Program is to provide an objective test of the key capabilities of WIPP's no-notice emergency response to a simulated operational emergency. In preparation, the WIPP Drill and Exercise Program will perform one no-notice drill on a selected capability per month.

The Emergency Management Section plans and conducts all annual functional and full scale operations-based exercises. The WIPP provides facility representatives and functional area representatives to serve on the Exercise Planning Team. Exercises are developed utilizing credible scenarios identified in the facility EPHA. Areas identified as weak during quarterly drills and discussion- or operations-based exercises will be addressed and then validated during the annual exercise, as necessary.

All site operations-based exercises will include additional pre-exercise activities that may include discussion- or operations-based exercises to ensure the entire ERO is prepared. Activities may include tabletops, seminars, workshops, games, or drills.

WIPP ANNUAL REQUIREMENTS

Drills

WIPP conducts a total of nine required drills per year that include both discussion-based and operations-based activities to ensure facility-level responders are prepared to respond to an actual emergency. The nine required drills are as follows:

- One Annual Site Evacuation Drill or Exercise
- Two total Mine Safety and Health Administration (MSHA) Underground Evacuation Drills (every 6 months)
- Two total MSHA Surface Fire Response Drills (every 6 months)
- Four total Hazardous Materials Program Drills (quarterly, EPHA-specific)

Functional Exercises

Functional Exercises (FE)s are a useful tool used to further test and train selected elements of the ERO. FEs are limited in scope and developed with focused objectives for selected response elements. For instance, the Emergency Operations Center (EOC) may be exercised by a team of expert simulators on two phases: Activation and Initial EOC Management. No other ERO venue or capability needs be involved to meet the objectives.

- Emergency Management intend to use FEs as needed to train and test ERO elements that are undergoing significant change or have added a number of new personnel in any given year.

Full Scale Exercise/Full Participation Exercise

A Full Scale Exercise (FSE) or a Full Participation Exercise (FPE) at WIPP must include the Central Monitoring Room (CMR), Fire/EMS, Emergency Response Team, EOC, as well as other key site responders to demonstrate an integrated response capability. Offsite response organizations are not required to participate in an FSE, but will be invited. Pre-exercise tabletop drills or functional exercises may be conducted prior to the FSE to serve as a refresher or to validate any changes made to procedures. A FPE consists of a FSE with the participation of offsite response organizations.

- WIPP will develop and execute at least one FSE per year.
- WIPP will develop and execute at least one FPE every 3 years.

WIPP is developing enhanced relations with offsite local Emergency Management Organizations (EMO). To enhance cooperation, local EMOs will be invited to participate each year in the WIPP FSE rather than just every 3 years.

Abnormal Condition Drill Program

A full Abnormal Condition Drill (ACD) Program is under development for WIPP.

- The goal of the ACD Program is to conduct at least one drill per quarter for each functional group or organization.

Additional Drill/Exercise Considerations:

WIPP will conduct a (severe event) Natural Phenomena Event exercise at least every 5 years. The scenario will include cascading consequences that pushes WIPP beyond the design basis and will require a large-scale, multiple operational period response and may include recovery.

WIPP will conduct a Mass Casualty Incident drill or exercise every other year.

At least once every 3 years, the following offsite response organizations will be provided the opportunity to participate in a drill or exercise (if they do not participate, it will be documented in the After Action Report):

- National Atmospheric Release Advisory Center
- Federal Radiological Assets
- DOE Headquarters Emergency Management Team

DRILL/EXERCISE SCENARIO DEVELOPMENT

The Drill and Exercise Program will focus on the following response capabilities over the next 3 years:

- Radiological Response
- Emergency Notifications and Communications
- Incident Management/Command and Control
- EOC Management / Emergency Public Information
- Underground Fire Response
- Surface Fire Response
- Emergency Medical Services
- Security/Law Enforcement Response

Major scenarios for WIPP are derived from the hazards information contained in the WIPP EPHS/EPHA. These hazards are as follows:

- Radiological Release
- External Impact
- Underground Emergency
- Malevolent Act/Terrorism
- Natural Phenomena Event

To ensure the inclusion of all hazards, the drill and exercise program will rotate the focus of the scenarios throughout the multi-year plan. In addition, every effort will be made to engage multiple capabilities during drills and exercises rather than facilitating a separate event for each capability and hazard annually.

The goal is to develop and sustain an integrated emergency response capability for all-hazards.

DRILL AND EXERCISE APPROACH

CALENDAR YEAR 2015

1ST QUARTER: JANUARY - MARCH

Target Drill/Exercise Requirements:

- Underground Evacuation / Fire Response
- Surface Fire Response

- EPHA Hazardous Materials Program (Quarterly Drill)
- EOC Quarterly Refresher Workshop/Drill

2ND QUARTER: APRIL- JUNE

Target Drill/Exercise Requirements:

- Site Evacuation Drill or Exercise

- EPHA Hazardous Materials Program (Quarterly Drill)
- EOC Quarterly Refresher Workshop/Drill

3RD QUARTER: JULY - SEPTEMBER

Target Drill/Exercise Requirements:

- Underground Evacuation / Fire Response
- Full Scale Exercise

- EPHA Hazardous Materials Program (Quarterly Drill)
- EOC Quarterly Refresher Workshop/Drill

4TH QUARTER: OCTOBER - DECEMBER

Target Drill/Exercise Requirements:

- Surface Fire Response
- EPHA Hazardous Materials Program (Quarterly Drill)
- EOC Quarterly Refresher Workshop/Drill

EMERGENCY RESPONSE ORGANIZATION CAPABILITIES – STRATEGY/FOCUS AREAS

- Radiological Response (Surface/Underground)
- Emergency Notifications and Communications
- Emergency Medical Services
- EOC Management / Emergency Public Information

- Incident Management / Command and Control
- Surface Fire Response
- Underground Fire Response
- Security/Law Enforcement Response

CALENDAR YEARS 2016 - 2017

Drill/Exercise Requirements will remain unchanged. The Full Scale/Participation Exercise will shift to 2nd Quarter

FY 2015 EMERGENCY MANAGEMENT ABNORMAL CONDITION DRILL CALENDAR SCHEDULE

ERO	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
CMR	2	2		2	2		2	2		2
RADCON	1		1	1		1	1		1	1
Hoisting		1	1		1	1		1	1	
Waste Handling			1			1			1	

This schedule reflects at least one drill per quarter for each functional group or organization and can exceed two drills per month. Please note, dates for drills may change based on operational conditions.

ACDs will be conducted to verify knowledge and understanding of abnormal condition mitigation measures based on plans and procedures. ACDs will cover small sections of these plans and procedures and will follow the planning, conduct, and after action reporting outlined in WP 12-3006, *Abnormal Condition Drills*.

ACDs will target functional work groups that will respond to changing conditions that *may* or *may not* constitute an emergency. The goal of the ACD program is to conduct each drill multiple times to ensure all essential personnel on the various shifts have the opportunity to train.

DEFINITIONS

- I. Operations-Based Exercises:** characterized by an actual response, mobilization of apparatus and resources, and commitment of personnel over an extended period of time. Operations-based exercises include drills, functional exercises (FE), full-scale exercises (FSE), and full participation exercise (FPE).
- **Drill:** coordinated, supervised activity usually employed to test a single specific operation or function. Drills provide the opportunity to train personnel, test new policies and procedures, and practice new skills.
 - **Abnormal Condition Drills (ACD):** are based on identified hazards and risks that exist within a facility or project. The drill scenarios do not require the implementation of the emergency procedure but do require facility operations personnel to manage the altered condition to maintain safe and reliable operations.
 - **Functional Exercise (FE):** designed to test and evaluate individual capabilities, multiple functions, activities within a function, or independent groups of functions. During an FE, most movement of personnel and equipment is simulated or very limited.
 - **Full Scale Exercise (FSE):** very complex exercise that tests many aspects of an integrated emergency response. An FSE focuses on implementing, analyzing, and evaluating plans, policies, and procedures. They are conducted in a real-time, stressful environment that closely mirrors a real event. During an FSE, first responders and resources are mobilized and deployed to the scene where they conduct their actions, as nearly as possible, as if a real incident had occurred.
 - **Full Participation Exercise (FPE):** (site operations-based) a full scale exercise with the addition of offsite emergency response participation. An FPE is required every three years.
- II. Discussion-Based Exercises:** support the transition from training to execution for operational tasks and are foundational components in the building block approach to an exercise program. Typically discussion-based activities focus on strategy and policy first and then move into discussion surrounding implementation of capabilities and procedures. They usually focus on existing or new plans, policies, mutual-aid agreements, and procedures. Discussion-based exercises include the following four formats:
- **Seminars:** used to orient participants to, or provide overview of, authorities, strategies, plans, policies, procedures, protocols, response resources, and new concepts/ideas. Seminars can be a starting point when developing or making major changes to plans and procedures.
 - **Workshops:** similar to seminars but player interaction is increased and the focus is on achieving or building a product (plan or procedure). This is done by collecting and sharing information, obtaining different perspectives, training groups in coordinated activities, and team building.
 - **Tabletop:** typically focused on facilitating the understanding of concepts, identifying strengths and weaknesses, and achieving a change in attitude. Tabletop Exercises are generally focused on slow-paced problem solving rather than rapid decision-making that usually occurs during an emergency or operations-based exercise.
 - **Games:** (Force on Force) simulation of operations that often involve two or more teams, usually in a competitive environment, using rules, data, and procedures designed to depict an actual or assumed real-life situation. Players are presented with scenarios and must perform tasks associated with a scenario episode. The goal is to explore decision-making processes and the consequences of those decisions.

ATTACHMENT 11
WP 05-WH1810 UNDERGROUND TRANSURANIC MIXED WASTE
DISPOSAL AREA INSPECTIONS

11 PAGES

WP 05-WH1810

Revision 15

Underground Transuranic Mixed Waste Disposal Area Inspections

Technical Procedure

EFFECTIVE DATE: 09/03/13

Randy Britain
APPROVED FOR USE

CONTINUOUS USE PROCEDURE

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CHANGE HISTORY SUMMARY

REVISION NUMBER	DATE ISSUED	DESCRIPTION OF CHANGES
13	02/10/11	<ul style="list-style-type: none">• Changed wording in 1st bullet of the Precautions and Limitations.• Added Fax number to steps 3.1.5 and 3.1.6.• Removed word Loran from attachment 2 as there is no Loran equipment underground any more.
14	06/17/11	<ul style="list-style-type: none">• Changed SEC to WHE in step 3.0 of Prerequisite Actions.• Changed Inspector to Performer in step 1.1.5.• Changed steps 3.1.5 thru 3.1.7 to steps 3.2 thru 3.4.• Added 52-H-035 13-Ton SLB2 Handler to attachment 2.
15	09/03/13	<ul style="list-style-type: none">• Added new step 1.1 to perform a dry run when using an alternate transport path.• Changed step 3.1.1 from Verify to Ensure.• Changed checkmark to initials for satisfactory in attachment 2.

INTRODUCTION ^{1,2}

This procedure provides guidance for performing inspections of Underground (U/G) Transuranic (TRU) Mixed Waste Disposal Areas.

Performance of this procedure generates the following record(s), as applicable. Any records generated are handled in accordance with departmental Records Inventory and Disposition Schedules.

- Attachment 1, Preoperational Underground TRU Mixed Waste Disposal Area Inspections
- Attachment 2, Preoperational Waste Handling Mode Checklist

REFERENCES			
DOCUMENT NUMBER AND TITLE	BASELINE DOCUMENT	REFERENCED DOCUMENT	KEY STEP
Title 40 Code of Federal Regulations (CFR) Part 264, Subpart I, "Use and Management of Containers"	✓		
40 CFR §264.15, "General Inspection Requirements"	✓		1
40 CFR Part 761, Subpart C, "Marking of PCBs and PCB Items"	✓		
DOE/WIPP-07-3372, <i>Waste Isolation Pilot Plant Documented Safety Analysis</i>	✓		
DOE/WIPP-07-3373, <i>Waste Isolation Pilot Plant Technical Safety Requirements</i>	✓		
Hazardous Waste Facility Permit, Waste Isolation Pilot Plant, Permit No. NM4890139088-TSDF, issued by the New Mexico Environment Department	✓		
00CD-0001, <i>WIPP Mine Ventilation Plan</i>	✓		2
WP 04-AD3001, <i>Facility Mode Compliance</i>	✓		
WP 04-AU1007, <i>Underground Openings Inspections</i>		✓	
WP15-GM1002, <i>Issues Management Processing of WIPP Forms</i>		✓	
EA04AD3001-2-0, <i>Facility TSR Administrative Controls Checklist CH Waste Handling Mode</i>		✓	
EA04AD3001-4-0, <i>Return to Storage or Standby Modes Upon Completion of Waste Handling</i>		✓	
EA15GM1002-1-0, <i>WIPP Form</i>		✓	

PRECAUTIONS AND LIMITATIONS

- Only personnel qualified as a CH Floor, Yard and Emplacement Technician/CH Waste Handling Technician/Engineer (FY&E/WHT/WHE) or trainees operating under direct supervision of a qualified CH FY&E/WHT/WHE are authorized to perform CH Waste Handling activities specified in this procedure.
- Adequate ventilation must be verified before proceeding beyond boundary.

PREREQUISITE ACTIONS

- 1.0 Review previous inspection results for outstanding Action Requests (ARs) and outstanding deficiencies.
- 2.0 If a required inspection goes delinquent, perform the following:
 - 2.1 Immediately notify Site Environmental Compliance (SEC) of the delinquent inspection.
 - 2.2 Schedule and complete the inspection.
 - 2.3 Document the following in a letter to SEC within five working days:
 - The schedule for inspection
 - The reason(s) why inspection was not performed
 - Any measures taken to offset negative impacts resulting from not performing the inspection
 - Actions to prevent further delinquencies
- 3.0 WHE, **GO TO** WP 15-GM1002, and initiate a WIPP Form, EA15GM1002-1-0.

PERFORMANCE

- 1.0 PREOPERATIONAL UNDERGROUND TRU MIXED WASTE DISPOSAL AREA INSPECTIONS (ATTACHMENT 1)
 - 1.1 **IF** using an alternate transport path (i.e., E-140/W-30) **THEN** perform a dry run with waste handling equipment and a facility pallet loaded with either MgO or dunnage assemblies prior to transporting waste.

- 1.2 **IF** personnel are to be working in an active U/G TRU Mixed Waste Disposal Area,
THEN, at the start of shift, inspect areas per attachment 1, as follows:
- 1.2.1 Enter date and time of inspection in appropriate blocks.
- 1.2.2 Inspect the applicable item/condition listed on attachment 1 **AND** enter check (✓) for satisfactory items/conditions, **U** for any unsatisfactory items/conditions, **N/A** for not inspected, **OR** actual value required.
- 1.2.3 Initial applicable block.
- 1.2.4 **IF** any item/condition is unsatisfactory,
THEN perform the following:
- Describe exact location and nature of deficiency in Remarks section.
 - Notify WHE.
 - Initiate and record AR for corrective action, as applicable.
- 1.2.5 Enter printed name, signature, and initials on attachment 1 when inspection completed.
- 1.2.6 Mark "N/A" for any unused block on attachment 1.
- 1.3 Submit inspection sheet to Reviewer upon completion of Preoperational Inspection.

2.0 REVIEW

- 2.1 Reviewer, perform the following:
- 2.1.1 Review attachment 1 for unsatisfactory conditions, corrective actions taken, and outstanding or newly generated ARs.
- 2.1.2 Enter initials in block provided for specific day.
- 2.1.3 Upon completion of last inspection documented, forward attachment 1 to WHE for validation.

3.0 PREOPERATIONAL WASTE HANDLING MODE CHECKLIST (ATTACHMENT 2)

- 3.1 Operator, after equipment preoperational checks are completed, perform the following:
 - 3.1.1 Ensure date has been entered.
 - 3.1.2 Initial the applicable block(s).
 - 3.1.3 Performer, enter printed name, signature, and initials on attachment 2, when preoperational checks are completed.
 - 3.1.4 After all applicable blocks are completed, notify WHE for mode. Initial block and enter time.
- 3.2 WHE, complete applicable block of EA04AD3001-2-0, and deliver to Central Monitoring Room Operator (CMRO), either by hand or fax (234-6049).
- 3.3 WHE, upon completion of Waste Handling activities for shift, complete applicable block of EA04AD3001-4-0, and deliver to CMRO, either by hand or fax (234-6049).
- 3.4 Upon completion of last preoperational mode checklist, forward attachment 2 to WHE for validation.

4.0 VALIDATION

- 4.1 WHE, perform the following:
 - 4.1.1 Upon completion of last inspection on attachments 1 and 2, verify correctness of form. Validate inspection(s) by printing name, signing, and dating inspection sheet in spaces provided.
 - 4.1.2 Review attachments 1 and 2 weekly and forward completed attachments to Records Coordinator.

Attachment 1 – Preoperational Underground TRU Mixed Waste Disposal Area Inspections

PREOPERATIONAL U/G TRU MIXED WASTE DISPOSAL AREA INSPECTION								
	DATE							
	TIME							
U/G Work Area Ground Control Inspection satisfactory in accordance with WP 04-AU1007	√/U*							
Room ventilation rate (minimum 35,000 scfm/42,000 acfm)	Rate (scfm/a cfm)							
No evidence of adverse health/safety conditions	√/U*							
Unobstructed access to exposed face of emplaced containers	√/U*							
Area free of debris	√/U*							
No evidence of spills/leaks from containers	√/U*							
Adjacent mine pager phones operational	√/U*							
U/G phone system operational	√/U*							
Warning signs posted	√/U*							
PCB warning signs posted on radiological boundary at the entrance and exhaust side to Active Disposal Room.	√/U*							
PERFORMER INITIALS	xxxxxx							
REVIEWER INITIALS	xxxxxx							

* √ = Satisfactory U = Unsatisfactory N/A = Not Inspected

Performers enter Printed Name, Signature, and Initials:

Printed Name

Signature

Initials

Attachment 1 – Preoperational Underground TRU Mixed Waste Disposal Area Inspections

REMARKS: _____

VALIDATION: _____ / _____ / _____

WHE (Print Name) Signature Date

Attachment 2 – Preoperational Waste Handling Mode Checklist

Performers enter:

Performers enter:

Printed Name	Signature	Initials	Printed Name	Signature	Initials

WHE VALIDATION: _____ / _____ / _____
(Print Name) Signature Date

ATTACHMENT 12
WP 04-PC3018 QUARTERLY ESSENTIAL PLANT COMMUNICATION
TESTING

112 PAGES

WP 04-PC3018

Revision 0

Quarterly Essential Plant Communication Systems Testing

Technical Procedure

EFFECTIVE DATE: 07/29/15

/s/ Scott Kennedy
APPROVED FOR USE

WORKING COPY VERIFICATION
Revision Checked:
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Name:
Signature:
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CHANGE HISTORY SUMMARY

REVISION NUMBER	DATE ISSUED	DESCRIPTION OF CHANGES
0	07/29/15	<ul style="list-style-type: none">• Initial issue

INTRODUCTION

This procedure provides instructions for the complete testing of the communication systems. This test is performed quarterly or at the discretion of Plant Management, to test all Speakers, Strobe Lights, Site Notification System (SNS) units, and Mine Pager Phones at the Waste Isolation Pilot Plant (WIPP). Any Section or Sections of this procedure can be completed independent of the other Sections and at the discretion of the Facility Shift Manager (FSM). Any Section can be repeated as necessary to complete testing of equipment.

This procedure does NOT take the place of the monthly permit testing with procedure WP 04-PC3017, *Essential Plant Communication Systems Testing*.

Performance of this procedure generates the following records:

- EA04PC3018-1-0, Testing Alarm for All Speakers
- EA04PC3018-2-0, Testing Alarm for All Site Notification System Units
- EA04PC3018-3-0, Testing Alarm for All Underground Mine Pager Phones
- EA04PC3018-4-0, Testing Alarm for All Surface Mine Pager Phones
- EA04PC3018-5-0, Testing of All U/G Strobe Lights
- EA04PC3018-6-0, Testing of All Underground Mine Pager Phones
- EA04PC3018-7-0, Testing of All Surface Mine Pager Phones

Any records generated are handled in accordance with departmental Records Inventory and Disposition Schedules (RIDS).

REFERENCES

DOCUMENT NUMBER AND TITLE	BASELINE DOCUMENT	REFERENCED DOCUMENT	KEY STEP
CFR 30, Part 57.18013, <i>Emergency Communications System</i>	✓		
CFR 30, Part 57.20032, <i>Two-way Communication Equipment for Underground Operations</i>	✓		
CFR 40, Part 265.15, <i>General Inspection Requirements</i>	✓		
CFR 40, Part 265.33, <i>Testing and Maintenance of Equipment</i>	✓		
NM4890139088-TSDF, <i>Waste Isolation Pilot Plant Hazardous Waste Facility Permit</i>	✓		
MP 5.16, <i>Landlord Program</i>	✓		
WP 04-AD3030, <i>Pre-Job briefings and Post-Job Reviews</i>		✓	
WP 04-CM1301, <i>Public Address System Console Operation</i>	✓		
WP 04-PC3017, <i>Essential Plant Communication Systems Testing</i>	✓	✓	
WP 15-GM1002, <i>Issues Management Processing of WIPP Forms</i>	✓		
WIPP Drawing, 73-E-001-W1, <i>Underground Utilities Plant Communications Evacuation Warning Layout Arrangement</i>	✓		
WIPP Drawing, 73-E-001-W2, <i>Underground Utilities Plant Communications Evacuation Warning Layout Panel Area</i>	✓		
WIPP Drawing, 73-J-010-W1, <i>Underground Utilities Public Address System Arrangement</i>	✓		
WIPP Drawing, 73-J-010-W3, <i>Underground Utilities Public Address System Arrangement Panel Area</i>	✓		
WIPP Drawing, 73-J-011-W1, <i>Underground Plant Communications Mine Page Phones Plan View</i>	✓		

DOCUMENT NUMBER AND TITLE	BASELINE DOCUMENT	REFERENCED DOCUMENT	KEY STEPS
WIPP Drawing, 73-J-011-W3, <i>Underground Plant Communications Mine Pager Phones Plan View</i>	✓		
WIPP Drawing, 73-J-200-W, <i>Surface Layout Plant Communications Mine Page Phones</i>	✓		
WIPP Drawing, 73-J-247-W1, <i>WIPP Surface Electrical Utility Surface Facility Building 247 Communications Plan</i>	✓		
WIPP Drawing, 73-J-384-W1, <i>Salt Handling Area Facility 384 & 384A Plant Communications Plan View</i>	✓		
WIPP Drawing, 73-J-411-W1, <i>Waste Handling Bldg. 411 First Floor El. 100'-0" Public Address System Arrangement</i>	✓		
WIPP Drawing, 73-J-411-W2, <i>Waste Handling Bldg. 411 El. 123'-0" and Above Public Address System Arrangement</i>	✓		
WIPP Drawing, 73-J-413-W1, <i>Exhaust Filter Building 413 Plant Communications Arrangement</i>	✓		
WIPP Drawing, 73-J-451-W1, <i>Facility 451 Support Building Plant Communications Arrangement</i>	✓		
WIPP Drawing, 73-J-452-W1, <i>Safety and Emergency Building 452 Plant Communications System Arrangement</i>	✓		
WIPP Drawing, 73-J-453-W1, <i>Building 453 Warehouse/Shop Plant Communications Arrangement</i>	✓		
WIPP Drawing, 73-J-456-W1, <i>Water Pumphouse Building 456 Plant Communications Arrangement</i>	✓		
WIPP Drawing, 73-J-458-W1, <i>Guardhouse and Security Bldg. 458 Plant Communications Arrangement</i>	✓		

DOCUMENT NUMBER AND TITLE	BASELINE DOCUMENT	REFERENCED DOCUMENT	KEY STEPS
WIPP Drawing, 73-J-486-W1, <i>Engineering Building 486 Plant Communications Arrangement</i>	✓		
WIPP Drawing, 73-J-489-W1, <i>Training Building Building #486 Communications Plan</i>	✓		
WIPP Drawing, 73-J-950-W1, <i>Work Control Complex Trailer 950 Plant Communications Arrangement</i>	✓		
WIPP Drawing, 73-J-951-W1, <i>Training Complex Trailer 951 Plant Communications Arrangement</i>	✓		
WIPP Drawing, 73-J-952-W1, <i>Trailer # 952 Public Address System Layout Plan</i>	✓		
WIPP Drawing, 73-J-953-W3, <i>Trailer 953 Public Address System</i>	✓		
AJHA PROD-439, General Hazard Analysis	✓		

EQUIPMENT LIST

None

PRECAUTIONS AND LIMITATIONS

- This procedure is performed by the Central Monitoring Room Operator (CMRO) at the Public Address (PA) console unless otherwise specified.
- Any Section or Sections of this procedure can be completed independent of the other Sections and at the discretion of the FSM. Any Section can be repeated as necessary to complete testing of equipment.
- All participants involved with this procedure have stop work authority; however, in the event of an abnormal event, safety issue or at the discretion of the FSM, this procedure is to be exited immediately.
- This procedure does NOT take the place of the monthly permit testing with procedure WP 04-PC3017, *Essential Plant Communication Systems Testing*.

ROLES AND RESPONSIBILITIES

- | | |
|---|---|
| Test Coordinator | <ul style="list-style-type: none"> Organize Observers, make copies of Electronic Attachments (EAs) [data sheets] and assign Observers to specific locations to collect data and validate EAs (data sheets) |
| CMRO | <ul style="list-style-type: none"> Initiate announcements and alarms from public address (PA) console in Central Monitoring Room |
| Observers | <ul style="list-style-type: none"> Listen for announcements, alarms and/or observe strobe lights, while stationed at specific locations to fill out EAs (data sheets) and submit to Test Coordinator |
| Salt Hoist &
Waste Hoist
Operator | <ul style="list-style-type: none"> Operate their Mine Evacuation Alarm switch when requested |

PREREQUISITE ACTIONS

- FSM or designee conducts a Formal Pre-Job Briefing to include Test Coordinator, Observers, and the CMRO, responsible for the correct completion of this testing, in accordance with WP 04-AD3030, *Pre-Job briefings and Post-Job Reviews*.
- Test Coordinator establishes the start time for the test.
- Test Coordinator assigns observers and distributes data sheets to test selected Speakers, Strobe Lights, SNS units, and Mine Pager Phones.

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

Outside Public address speakers and mine pager phones:

- Within 30 to 40 feet can be heard and understood.

Strobe Lights

- Functional and visible at line of sight

If a criterion is NOT met or there are other concerns, then note problem(s) in Comments Section of data sheet. Test Coordinator notify FSM and Underground (U/G) Services at end of test.

PERFORMANCE

1.0 ALL PAGE PUBLIC ADDRESS ALARM SYSTEM TEST

NOTE

The ALL PAGE button on the public address (PA) console is for Sitewide announcements. ALL PAGE includes Zone 1 through 4, Mine Pager Phones, and the Site Notification System (SNS) units.

-
- 1.1 Test Coordinator,
STATION all necessary observers with EAs (data sheets) at predetermined locations to check INTRO and EVAC Alarms for all PA Speakers, Mine Pager Phones and SNS units.
 - 1.2 CMRO, (Steps 1.2 through 1.14),
REMOVE PA Handset from cradle.
 - 1.3 **PRESS** ALL PAGE button.
-

NOTE

In Step 1.4, the ALL PAGE button WILL NOT illuminate when selected, but each individual zone page button associated with the ALL PAGE button WILL illuminate.

-
- 1.4 **VERIFY** all individual Zone page buttons illuminate.
 - 1.4.1 **IF** individual Zone page buttons do NOT illuminate,
THEN INITIATE an action request (AR) at completion of test for deficiencies.
 - 1.5 **PERFORM** following:
 - 1.5.1 **PRESS AND HOLD** Handset push button while making announcements.
 - 1.5.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the Test Window for the Plant Communication Systems Testing is now open. Disregard PA test alarms until further notice.”
 - 1.5.3 **REPEAT** announcement.
 - 1.6 **PRESS** RESET button,
OR REPLACE Handset to deselect zone page buttons.

- 1.7 **ALLOW** at least 5 (five) minutes to pass,
THEN REMOVE PA Handset from cradle.
- 1.8 **PRESS** ALL PAGE button.
- 1.9 **VERIFY** all individual Zone page buttons illuminate.
 - 1.9.1 **IF** individual Zone page buttons do NOT illuminate,
THEN INITIATE an AR at completion of test for deficiencies.
- 1.10 **PERFORM** following:
 - 1.10.1 **PRESS AND HOLD** Handset push button while making announcements.
 - 1.10.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the following is a test of the INTRO Alarm. Disregard PA test alarms until further notice.”
 - 1.10.3 **REPEAT** announcement.
- 1.11 **PRESS** INTRO button on PA console.
- 1.12 **ALLOW** tone to sound for at least 5 (five) seconds.
- 1.13 **PRESS** CLEAR button on PA console.
- 1.14 **PRESS** RESET button,
OR REPLACE Handset to deselect zone page buttons.
- 1.15 Observers,
RECORD performance (SAT or UNSAT) of ALL PAGE INTRO Alarm test on EA04PC3018-1-0, *Testing Alarm for All Speakers*, EA04PC3018-2-0, *Testing of All Site Notification System Units*, EA04PC3018-3-0, *Testing Alarms for All Underground Mine Pager Phones*, and/or EA04PC3018-4-0, *Testing Alarms for All Surface Mine Pager Phones*. (if stated as prerequisite)
 - 1.15.1 Observers,
RECORD Initials and Time on EA04PC3018-1-0, EA04PC3018-2-0, EA04PC3018-3-0, and/or EA04PC3018-4-0.
- 1.16 CMRO, (Steps 1.16 through 1.23)
REMOVE PA Handset from cradle.
- 1.17 **PRESS** ALL PAGE button.
- 1.18 **VERIFY** all individual Zone page buttons illuminate.

- 1.18.1 **IF** individual Zone page buttons do NOT illuminate,
THEN INITIATE an AR at completion of test for deficiencies.
- 1.19 **PERFORM** following:
- 1.19.1 **PRESS AND HOLD** Handset push button while making announcements.
- 1.19.2 **INITIATE** following announcement using normal voice.
- “May I have your attention please, may I have your attention please, the following is a test of the EVAC Alarm. Disregard PA test alarms until further notice.”
- 1.19.3 **REPEAT** announcement.
- 1.20 **PRESS** EVAC button on PA console.
- 1.21 **ALLOW** tone to sound for at least 5 (five) seconds.
- 1.22 **PRESS** CLEAR button on PA console.
- 1.23 **PRESS** RESET button,
OR REPLACE Handset to deselect zone page buttons.
- 1.24 Observers,
RECORD performance (SAT or UNSAT) of ALL PAGE EVAC Alarm test on EA04PC3018-1-0, *Testing Alarm for All Speakers*, EA04PC3018-2-0, *Testing of All Site Notification System Units*, EA04PC3018-3-0, *Testing Alarms for All Underground Mine Pager Phones*, and/or EA04PC3018-4-0, *Testing Alarms for All Surface Mine Pager Phones*.
- 1.24.1 Observers,
RECORD Initials and Time on EA04PC3018-1-0, EA04PC3018-2-0, EA04PC3018-3-0, and/or EA04PC3018-4-0.
- 1.25 Test Coordinator,
IF testing of ALL PAGE INTRO and EVAC Alarms are NOT complete,
THEN NOTIFY CMRO by voice to repeat Steps 1.7 through 1.24.1.
- 1.25.1 Test Coordinator,
STATION all necessary observers with EAs (data sheets) at new predetermined locations to check INTRO and EVAC Alarms for all PA Speakers, Mine Pager Phones and SNS units.
- 1.25.2 CMRO,
REPEAT Steps 1.7 through 1.24.1 until all INTRO and EVAC Alarm for PA Speakers, Mine Pager Phones, and SNS units are tested.

- 1.26 Test Coordinator,
NOTIFY CMRO ALL PAGE INTRO and EVAC Alarm testing is complete.
- 1.27 CMRO, (Steps 1.27 through 1.30.2),
IF ALL PAGE testing is complete and no other Zone is to be tested,
THEN REMOVE PA Handset from cradle.
- 1.28 **PRESS** ALL PAGE button.
- 1.29 **VERIFY** all individual Zone page buttons illuminate.
 - 1.29.1 **IF** individual Zone page buttons do NOT illuminate,
THEN INITIATE an AR at completion of test for deficiencies.
- 1.30 **PERFORM** following:
 - 1.30.1 **PRESS AND HOLD** Handset push button while making announcements.
 - 1.30.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the Test Window is now closed, this completes the test of the public address system, regard all further alarms as valid.”
- 1.31 Test Coordinator,
COLLECT all copies of EA04PC3018-1-0, EA04PC3018-2-0, EA04PC3018-3-0, and/or EA04PC3018-4-0,
AND EVALUATE data for deficiencies.
 - 1.31.1 Test Coordinator,
INITIATE an AR at completion of test for deficiencies.
 - 1.31.2 Test Coordinator,
FORWARD completed EAs (data sheets) to Facility Operations (FacOps) records coordinator.

2.0 ZONE 1 PUBLIC ADDRESS ALARM SYSTEM TEST

NOTE

The Zone 1 button on the public address (PA) console is for the Support Building announcements.

- 2.1 Test Coordinator,
STATION all necessary observers with EAs (data sheets) at predetermined locations to check INTRO and EVAC Alarms for all Zone 1 PA Speakers (Support Building).

- 2.2 CMRO, (Steps 2.2 through 2.14),
REMOVE PA Handset from cradle.
- 2.3 **PRESS** Zone 1 button.
- 2.4 **VERIFY** Zone 1 page button illuminates.
 - 2.4.1 **IF** Zone 1 page button does NOT illuminate,
THEN INITIATE an action request (AR) at completion of test for deficiencies.
- 2.5 **PERFORM** following:
 - 2.5.1 **PRESS AND HOLD** Handset push button while making announcements.
 - 2.5.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the Test Window for the Plant Communication Systems Testing is now open. Disregard PA test alarms until further notice.”
 - 2.5.3 **REPEAT** announcement.
- 2.6 **PRESS** RESET button,
OR REPLACE Handset to deselect zone page buttons.
- 2.7 **ALLOW** at least 5 (five) minutes to pass,
THEN REMOVE PA Handset from cradle.
- 2.8 **PRESS** Zone 1 button.
- 2.9 **VERIFY** Zone 1 page button illuminates.
 - 2.9.1 **IF** Zone 1 page button does NOT illuminate,
THEN INITIATE an AR at completion of test for deficiencies.
- 2.10 **PERFORM** following:
 - 2.10.1 **PRESS AND HOLD** Handset push button while making announcements.
 - 2.10.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the following is a test of the Zone 1 INTRO Alarm. Disregard PA test alarms until further notice.”
 - 2.10.3 **REPEAT** announcement.

- 2.11 **PRESS** INTRO button on PA console.
- 2.12 **ALLOW** tone to sound for at least 5 (five) seconds.
- 2.13 **PRESS** CLEAR button on PA console.
- 2.14 **PRESS** RESET button,
OR REPLACE Handset to deselect zone page buttons.
- 2.15 Observers,
RECORD performance (SAT or UNSAT) of Zone 1 INTRO Alarm test on EA04PC3018-1-0, *Testing Alarm for All Speakers*, for Support Building.
 - 2.15.1 Observers,
RECORD Initials and Time on EA04PC3018-1-0 for Support Building.
- 2.16 CMRO, (Steps 2.16 through 2.23)
REMOVE PA Handset from cradle.
- 2.17 **PRESS** Zone 1 button.
- 2.18 **VERIFY** Zone 1 page button illuminates.
 - 2.18.1 **IF** Zone 1 page button does NOT illuminate,
THEN INITIATE an AR at completion of test for deficiencies.
- 2.19 **PERFORM** following:
 - 2.19.1 **PRESS AND HOLD** Handset push button while making announcements.
 - 2.19.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the following is a test of the Zone 1 EVAC Alarm. Disregard PA test alarms until further notice.”
 - 2.19.3 **REPEAT** announcement.
- 2.20 **PRESS** EVAC button on PA console.
- 2.21 **ALLOW** tone to sound for at least 5 (five) seconds.
- 2.22 **PRESS** CLEAR button on PA console.
- 2.23 **PRESS** RESET button,
OR REPLACE Handset to deselect zone page buttons.
- 2.24 Observers,
RECORD performance (SAT or UNSAT) of Zone 1 EVAC Alarm test on EA04PC3018-1-0, *Testing Alarm for All Speakers*, for Support Building.

- 2.24.1 Observers,
RECORD Initials and Time on EA04PC3018-1-0 for Support Building.
- 2.25 Test Coordinator,
IF testing of Zone 1 INTRO and EVAC Alarms are NOT complete,
THEN NOTIFY CMRO by voice to repeat Steps 2.7 through 2.24.1.
 - 2.25.1 Test Coordinator,
STATION all necessary observers with EAs (data sheets) at new predetermined locations to check INTRO and EVAC Alarms for Zone 1 PA Speakers.
 - 2.25.2 CMRO,
REPEAT Steps 2.7 through 2.24.1 until all Zone 1 INTRO and EVAC Alarm speakers are tested.
- 2.26 Test Coordinator,
NOTIFY CMRO Zone 1 INTRO and EVAC Alarm testing is complete.
- 2.27 CMRO, (Steps 2.27 through 2.30.2),
IF Zone 1 testing is complete and no other Zone is to be tested,
THEN REMOVE PA Handset from cradle.
- 2.28 **PRESS** ALL PAGE button.
- 2.29 **VERIFY** all individual Zone page buttons illuminate.
 - 2.29.1 **IF** individual Zone page buttons do NOT illuminate,
THEN INITIATE an AR at completion of test for deficiencies.
- 2.30 **PERFORM** following:
 - 2.30.1 **PRESS AND HOLD** Handset push button while making announcements.
 - 2.30.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the Test Window is now closed, this completes the test of the public address system, regard all further alarms as valid.”
- 2.31 Test Coordinator,
COLLECT all copies of EA04PC3018-1-0, *Testing Alarm for All Speakers*, for Support Building,
AND EVALUATE data for deficiencies.
 - 2.31.1 Test Coordinator,
INITIATE an AR at completion of test for deficiencies.

- 2.31.2 Test Coordinator,
FORWARD completed EAs (data sheets) to FacOps records coordinator.

3.0 ZONE 2 PUBLIC ADDRESS ALARM SYSTEM TEST

NOTE

The Zone 2 button on the public address (PA) console is for the Waste Handling Building announcements.

- 3.1 Test Coordinator,
STATION all necessary observers with EAs (data sheets) at predetermined locations to check INTRO and EVAC Alarms for all Zone 2 PA Speakers (Waste Handling Building).
- 3.2 CMRO, (Steps 3.2 through 3.14),
REMOVE PA Handset from cradle.
- 3.3 **PRESS** Zone 2 button.
- 3.4 **VERIFY** Zone 2 page button illuminates.
- 3.4.1 **IF** Zone 2 page button does NOT illuminate,
THEN INITIATE an action request (AR) at completion of test for deficiencies.
- 3.5 **PERFORM** following:
- 3.5.1 **PRESS AND HOLD** Handset push button while making announcements.
- 3.5.2 **INITIATE** following announcement using normal voice.
- “May I have your attention please, may I have your attention please, the Test Window for the Plant Communication Systems Testing is now open. Disregard PA test alarms until further notice.”
- 3.5.3 **REPEAT** announcement.
- 3.6 **PRESS** RESET button,
OR REPLACE Handset to deselect zone page buttons.
- 3.7 **ALLOW** at least 5 (five) minutes to pass,
THEN REMOVE PA Handset from cradle.
- 3.8 **PRESS** Zone 2 button.
- 3.9 **VERIFY** Zone 2 page button illuminates.

- 3.9.1 **IF** Zone 2 page button does NOT illuminate,
THEN INITIATE an AR at completion of test for deficiencies.
- 3.10 **PERFORM** following:
 - 3.10.1 **PRESS AND HOLD** Handset push button while making announcements.
 - 3.10.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the following is a test of the Zone 2 INTRO Alarm. Disregard PA test alarms until further notice.”
 - 3.10.3 **REPEAT** announcement.
- 3.11 **PRESS** INTRO button on PA console.
- 3.12 **ALLOW** tone to sound for at least 5 (five) seconds.
- 3.13 **PRESS** CLEAR button on PA console.
- 3.14 **PRESS** RESET button,
OR REPLACE Handset to deselect zone page buttons.
- 3.15 Observers,
RECORD performance (SAT or UNSAT) of Zone 2 INTRO Alarm test on EA04PC3018-1-0, *Testing Alarm for All Speakers*, for Waste Handling Building.
 - 3.15.1 Observers,
RECORD Initials and Time on EA04PC3018-1-0 for Waste Handling Building.
- 3.16 CMRO, (Steps 3.16 through 3.23)
REMOVE PA Handset from cradle.
- 3.17 **PRESS** Zone 2 button.
- 3.18 **VERIFY** Zone 2 page button illuminates.
 - 3.18.1 **IF** Zone 2 page button does NOT illuminate,
THEN INITIATE an AR at completion of test for deficiencies.
- 3.19 **PERFORM** following:
 - 3.19.1 **PRESS AND HOLD** Handset push button while making announcements.
 - 3.19.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the following is a test of the Zone 2 EVAC Alarm. Disregard PA test alarms until further notice.”

- 3.19.3 **REPEAT** announcement.
- 3.20 **PRESS** EVAC button on PA console.
- 3.21 **ALLOW** tone to sound for at least 5 (five) seconds.
- 3.22 **PRESS** CLEAR button on PA console.
- 3.23 **PRESS** RESET button,
OR REPLACE Handset to deselect zone page buttons.
- 3.24 Observers,
RECORD performance (SAT or UNSAT) of Zone 2 EVAC Alarm test on EA04PC3018-1-0, *Testing Alarm for All Speakers*, for Waste Handling Building.
 - 3.24.1 Observers,
RECORD Initials and Time on EA04PC3018-1-0 for Waste Handling Building.
- 3.25 Test Coordinator,
IF testing of Zone 2 INTRO and EVAC Alarms are NOT complete,
THEN NOTIFY CMRO by voice to repeat Steps 3.7 through 3.24.1.
 - 3.25.1 Test Coordinator,
STATION all necessary observers with EAs (data sheets) at new predetermined locations to check INTRO and EVAC Alarms for Zone 2 PA Speakers.
 - 3.25.2 CMRO,
REPEAT Steps 3.7 through 3.24.1 until all Zone 2 INTRO and EVAC Alarm speakers are tested.
- 3.26 Test Coordinator,
NOTIFY CMRO Zone 2 INTRO and EVAC Alarm testing is complete.
- 3.27 CMRO, (Steps 3.27 through 3.30.2),
IF Zone 2 testing is complete and no other Zone is to be tested,
THEN REMOVE PA Handset from cradle.
- 3.28 **PRESS** ALL PAGE button.
- 3.29 **VERIFY** all individual Zone page buttons illuminate.
 - 3.29.1 **IF** individual Zone page buttons do NOT illuminate,
THEN INITIATE an AR at completion of test for deficiencies.

3.30 **PERFORM** following:

3.30.1 **PRESS AND HOLD** Handset push button while making announcements.

3.30.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the Test Window is now closed, this completes the test of the public address system, regard all further alarms as valid.”

3.31 Test Coordinator,
COLLECT all copies of EA04PC3018-1-0, *Testing Alarm for All Speakers*, for Waste Handling Building,
AND EVALUATE data for deficiencies.

3.31.1 Test Coordinator,
INITIATE an AR at completion of test for deficiencies.

3.31.2 Test Coordinator,
FORWARD completed EAs (data sheets) to FacOps records coordinator.

4.0 ZONE 3 PUBLIC ADDRESS ALARM SYSTEM TEST

NOTE

The Zone 3 button on the public address (PA) console is for Ancillary areas. (384A Salt Handling Hoist Bldg, 413 Exhaust Filter Bldg, 452 Safety and Emergency Bldg, 453 Warehouse Bldg, 456 Water Pumphouse Bldg, 458 Guard & Security Bldg, 486 Engineering Bldg, 489 Training Bldg, 950, 951, 952, 953 Trailers, and other outlying areas).

4.1 Test Coordinator,
STATION all necessary observers with EAs (data sheets) at predetermined locations to check INTRO and EVAC Alarms for all Zone 3 PA Speakers (Ancillary areas).

4.2 CMRO, (Steps 4.2 through 4.14),
REMOVE PA Handset from cradle.

4.3 **PRESS** Zone 3 button.

4.4 **VERIFY** Zone 3 page button illuminates.

4.4.1 **IF** Zone 3 page button does NOT illuminate,
THEN INITIATE an action request (AR) at completion of test for deficiencies.

- 4.5 **PERFORM** following:
- 4.5.1 **PRESS AND HOLD** Handset push button while making announcements.
 - 4.5.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the Test Window for the Plant Communication Systems Testing is now open. Disregard PA test alarms until further notice.”
 - 4.5.3 **REPEAT** announcement.
- 4.6 **PRESS** RESET button,
OR REPLACE Handset to deselect zone page buttons.
- 4.7 **ALLOW** at least 5 (five) minutes to pass,
THEN REMOVE PA Handset from cradle.
- 4.8 **PRESS** Zone 3 button.
- 4.9 **VERIFY** Zone 3 page button illuminates.
- 4.9.1 **IF** Zone 3 page button does NOT illuminate,
THEN INITIATE an AR at completion of test for deficiencies.
- 4.10 **PERFORM** following:
- 4.10.1 **PRESS AND HOLD** Handset push button while making announcements.
 - 4.10.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the following is a test of the Zone 3 INTRO Alarm. Disregard PA test alarms until further notice.”
 - 4.10.3 **REPEAT** announcement.
- 4.11 **PRESS** INTRO button on PA console.
- 4.12 **ALLOW** tone to sound for at least 5 (five) seconds.
- 4.13 **PRESS** CLEAR button on PA console.
- 4.14 **PRESS** RESET button,
OR REPLACE Handset to deselect zone page buttons.

- 4.15 Observers,
RECORD performance (SAT or UNSAT) of Zone 3 INTRO Alarm test on EA04PC3018-1-0, *Testing Alarm for All Speakers*, for Ancillary areas.
 - 4.15.1 Observers,
RECORD Initials and Time on EA04PC3018-1-0 for Ancillary areas.
- 4.16 CMRO, (Steps 4.16 through 4.23)
REMOVE PA Handset from cradle.
- 4.17 **PRESS** Zone 3 button.
- 4.18 **VERIFY** Zone 3 page button illuminates.
 - 4.18.1 **IF** Zone 3 page button does NOT illuminate,
THEN INITIATE an AR at completion of test for deficiencies.
- 4.19 **PERFORM** following:
 - 4.19.1 **PRESS AND HOLD** Handset push button while making announcements.
 - 4.19.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the following is a test of the Zone 3 EVAC Alarm. Disregard PA test alarms until further notice.”
 - 4.19.3 **REPEAT** announcement.
- 4.20 **PRESS** EVAC button on PA console.
- 4.21 **ALLOW** tone to sound for at least 5 (five) seconds.
- 4.22 **PRESS** CLEAR button on PA console.
- 4.23 **PRESS** RESET button,
OR REPLACE Handset to deselect zone page buttons.
- 4.24 Observers,
RECORD performance (SAT or UNSAT) of Zone 3 EVAC Alarm test on EA04PC3018-1-0, *Testing Alarm for All Speakers*, for Ancillary areas.
 - 4.24.1 Observers,
RECORD Initials and Time on EA04PC3018-1-0 for Ancillary areas.
- 4.25 Test Coordinator,
IF testing of Zone 3 INTRO and EVAC Alarms are NOT complete,
THEN NOTIFY CMRO by voice to repeat Steps 4.7 through 4.24.1.

- 4.25.1 Test Coordinator,
STATION all necessary observers with EAs (data sheets) at new predetermined locations to check INTRO and EVAC Alarms for Zone 3 PA Speakers.
- 4.25.2 CMRO,
REPEAT Steps 4.7 through 4.24.1 until all Zone 3 INTRO and EVAC Alarm speakers are tested.
- 4.26 Test Coordinator,
NOTIFY CMRO Zone 3 INTRO and EVAC Alarm testing is complete.
- 4.27 CMRO, (Steps 4.27 through 4.30.2),
IF Zone 3 testing is complete and no other Zone is to be tested,
THEN REMOVE PA Handset from cradle.
- 4.28 **PRESS** ALL PAGE button.
- 4.29 **VERIFY** all individual Zone page buttons illuminate.
 - 4.29.1 **IF** individual Zone page buttons do NOT illuminate,
THEN INITIATE an AR at completion of test for deficiencies.
- 4.30 **PERFORM** following:
 - 4.30.1 **PRESS AND HOLD** Handset push button while making announcements.
 - 4.30.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the Test Window is now closed, this completes the test of the public address system, regard all further alarms as valid.”
- 4.31 Test Coordinator,
COLLECT all copies of EA04PC3018-1-0, *Testing Alarm for All Speakers*, for Ancillary areas,
AND EVALUATE data for deficiencies.
 - 4.31.1 Test Coordinator,
INITIATE an AR at completion of test for deficiencies.
 - 4.31.2 Test Coordinator,
FORWARD completed EAs (data sheets) to FacOps records coordinator.

5.0 ZONE 4 PUBLIC ADDRESS ALARM SYSTEM TEST

NOTE

The Zone 4 button on the public address (PA) console is for the Underground announcements.

- 5.1 Test Coordinator,
STATION all necessary observers with EAs (data sheets) at predetermined locations to check INTRO and EVAC Alarms for all Zone 4 PA Speakers (Underground).
- 5.2 CMRO, (Steps 5.2 through 5.14),
REMOVE PA Handset from cradle.
- 5.3 **PRESS** Zone 4 button.
- 5.4 **VERIFY** Zone 4 page button illuminates.
 - 5.4.1 **IF** Zone 4 page button does NOT illuminate,
THEN INITIATE an action request (AR) at completion of test for deficiencies.
- 5.5 **PERFORM** following:
 - 5.5.1 **PRESS AND HOLD** Handset push button while making announcements.
 - 5.5.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the Test Window for the Plant Communication Systems Testing is now open. Disregard PA test alarms until further notice.”
 - 5.5.3 **REPEAT** announcement.
- 5.6 **PRESS** RESET button,
OR REPLACE Handset to deselect zone page buttons.
- 5.7 **ALLOW** at least 5 (five) minutes to pass,
THEN REMOVE PA Handset from cradle.
- 5.8 **PRESS** Zone 4 button.
- 5.9 **VERIFY** Zone 4 page button illuminates.
 - 5.9.1 **IF** Zone 4 page button does NOT illuminate,
THEN INITIATE an AR at completion of test for deficiencies.

5.10 **PERFORM** following:

5.10.1 **PRESS AND HOLD** Handset push button while making announcements.

5.10.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the following is a test of the Zone 4 INTRO Alarm. Disregard PA test alarms until further notice.”

5.10.3 **REPEAT** announcement.

5.11 **PRESS** INTRO button on PA console.

5.12 **ALLOW** tone to sound for at least 5 (five) seconds.

5.13 **PRESS** CLEAR button on PA console.

5.14 **PRESS** RESET button,
OR REPLACE Handset to deselect zone page buttons.

5.15 Observers,
RECORD performance (SAT or UNSAT) of Zone 4 INTRO Alarm test on EA04PC3018-1-0, *Testing Alarm for All Speakers*, for Underground.

5.15.1 Observers,
RECORD Initials and Time on EA04PC3018-1-0 for Underground.

5.16 CMRO, (Steps 5.16 through 5.23)
REMOVE PA Handset from cradle.

5.17 **PRESS** Zone 4 button.

5.18 **VERIFY** Zone 4 page button illuminates.

5.18.1 **IF** Zone 4 page button does NOT illuminate,
THEN INITIATE an AR at completion of test for deficiencies.

5.19 **PERFORM** following:

5.19.1 **PRESS AND HOLD** Handset push button while making announcements.

5.19.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the following is a test of the Zone 4 EVAC Alarm. Disregard PA test alarms until further notice.”

- 5.19.3 **REPEAT** announcement.
- 5.20 **PRESS** EVAC button on PA console.
- 5.21 **ALLOW** tone to sound for at least 5 (five) seconds.
- 5.22 **PRESS** CLEAR button on PA console.
- 5.23 **PRESS** RESET button,
OR REPLACE Handset to deselect zone page buttons.
- 5.24 Observers,
RECORD performance (SAT or UNSAT) of Zone 4 EVAC Alarm test on EA04PC3018-1-0, *Testing Alarm for All Speakers*, for Underground.
 - 5.24.1 Observers,
RECORD Initials and Time on EA04PC3018-1-0 for Underground.
- 5.25 Test Coordinator,
IF testing of Zone 4 INTRO and EVAC Alarms are NOT complete,
THEN NOTIFY CMRO by voice to repeat Steps 5.7 through 5.24.1.
 - 5.25.1 Test Coordinator,
STATION all necessary observers with EAs (data sheets) at new predetermined locations to check INTRO and EVAC Alarms for Zone 4 PA Speakers.
 - 5.25.2 CMRO,
REPEAT Steps 5.7 through 5.24.1 until all Zone 4 INTRO and EVAC Alarm speakers are tested.
- 5.26 Test Coordinator,
NOTIFY CMRO Zone 4 INTRO and EVAC Alarm testing is complete.
- 5.27 CMRO, (Steps 5.27 through 5.30.2),
IF Zone 4 testing is complete and no other Zone is to be tested,
THEN REMOVE PA Handset from cradle.
- 5.28 **PRESS** ALL PAGE button.
- 5.29 **VERIFY** all individual Zone page buttons illuminate.
 - 5.29.1 **IF** individual Zone page buttons do NOT illuminate,
THEN INITIATE an AR at completion of test for deficiencies.
- 5.30 **PERFORM** following:
 - 5.30.1 **PRESS AND HOLD** Handset push button while making announcements.

5.30.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the Test Window is now closed, this completes the test of the public address system, regard all further alarms as valid.”

5.31 Test Coordinator,
COLLECT all copies of EA04PC3018-1-0, *Testing Alarm for All Speakers*, for Underground,
AND EVALUATE data for deficiencies.

5.31.1 Test Coordinator,
INITIATE an AR at completion of test for deficiencies.

5.31.2 Test Coordinator,
FORWARD completed EAs (data sheets) to FacOps records coordinator.

6.0 SNS PUBLIC ADDRESS ALARM SYSTEM TEST

NOTE

The SNS button on the public address (PA) console is for the Site Notification System announcements.

6.1 Test Coordinator,
STATION all necessary observers with EAs (data sheets) at predetermined locations to check INTRO and EVAC Alarms for all SNS units.

6.2 CMRO, (Steps 6.2 through 6.14),
REMOVE PA Handset from cradle.

6.3 **PRESS** SNS button.

6.4 **VERIFY** SNS page buttons illuminates.

6.4.1 **IF** SNS page button does NOT illuminate,
THEN INITIATE an action request (AR) at completion of test for deficiencies.

6.5 **PERFORM** following:

6.5.1 **PRESS AND HOLD** Handset push button while making announcements.

6.5.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the Test Window for the Plant Communication Systems Testing is now open. Disregard PA test alarms until further notice.”

6.5.3 **REPEAT** announcement.

6.6 **PRESS** RESET button,
OR REPLACE Handset to deselect zone page buttons.

6.7 **ALLOW** at least 5 (five) minutes to pass,
THEN REMOVE PA Handset from cradle.

6.8 **PRESS** SNS button.

6.9 **VERIFY** SNS page button illuminates.

6.9.1 **IF** SNS page button does NOT illuminate,
THEN INITIATE an AR at completion of test for deficiencies.

6.10 **PERFORM** following:

6.10.1 **PRESS AND HOLD** Handset push button while making announcements.

6.10.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the following is a test of the Site Notification System INTRO Alarm. Disregard PA test alarms until further notice.”

6.10.3 **REPEAT** announcement.

6.11 **PRESS** INTRO button on PA console.

6.12 **ALLOW** tone to sound for at least 5 (five) seconds.

6.13 **PRESS** CLEAR button on PA console.

6.14 **PRESS** RESET button,
OR REPLACE Handset to deselect zone page buttons.

6.15 Observers,
RECORD performance (SAT or UNSAT) of SNS INTRO Alarm test on EA04PC3018-2-0, *Testing Alarm for All Site Notification System Units*.

6.15.1 Observers,
RECORD Initials and Time on EA04PC3018-2-0 for SNS units.

6.16 CMRO, (Steps 6.16 through 6.23)
REMOVE PA Handset from cradle.

- 6.17 **PRESS** SNS button.
- 6.18 **VERIFY** SNS page button illuminates.
 - 6.18.1 **IF** SNS page button does NOT illuminate,
THEN INITIATE an AR at completion of test for deficiencies.
- 6.19 **PERFORM** following:
 - 6.19.1 **PRESS AND HOLD** Handset push button while making announcements.
 - 6.19.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the following is a test of the Site Notification System EVAC Alarm. Disregard PA test alarms until further notice.”
 - 6.19.3 **REPEAT** announcement.
- 6.20 **PRESS** EVAC button on PA console.
- 6.21 **ALLOW** tone to sound for at least 5 (five) seconds.
- 6.22 **PRESS** CLEAR button on PA console.
- 6.23 **PRESS** RESET button,
OR REPLACE Handset to deselect zone page buttons.
- 6.24 Observers,
RECORD performance (SAT or UNSAT) of SNS EVAC Alarm test on EA04PC3018-2-0, *Testing Alarm for All Site Notification System Units*.
 - 6.24.1 Observers,
RECORD Initials and Time on EA04PC3018-2-0 for SNS units.
- 6.25 Test Coordinator,
IF testing of SNS INTRO and EVAC Alarms are NOT complete,
THEN NOTIFY CMRO by voice to repeat Steps 6.7 through 6.24.1.
 - 6.25.1 Test Coordinator,
STATION all necessary observers with EAs (data sheets) at new predetermined locations to check INTRO and EVAC Alarms for SNS units.
 - 6.25.2 CMRO,
REPEAT Steps 6.7 through 6.24.1 until all SNS INTRO and EVAC Alarm units are tested.

- 6.26 Test Coordinator,
NOTIFY CMRO SNS INTRO and EVAC Alarm testing is complete.
- 6.27 CMRO, (Steps 6.27 through 6.30.2),
IF SNS testing is complete and no other Zone is to be tested,
THEN REMOVE PA Handset from cradle.
- 6.28 **PRESS** ALL PAGE button.
- 6.29 **VERIFY** all individual Zone page buttons illuminate.
- 6.29.1 **IF** individual Zone page buttons do NOT illuminate,
THEN INITIATE an AR at completion of test for deficiencies.
- 6.30 **PERFORM** following:
- 6.30.1 **PRESS AND HOLD** Handset push button while making announcements.
- 6.30.2 **INITIATE** following announcement using normal voice.
- “May I have your attention please, may I have your attention please, the Test Window is now closed, this completes the test of the public address system, regard all further alarms as valid.”
- 6.31 Test Coordinator,
COLLECT all copies of EA04PC3018-2-0, *Testing Alarm for All Site Notification System Units*,
AND EVALUATE data for deficiencies.
- 6.31.1 Test Coordinator,
INITIATE an AR at completion of test for deficiencies.
- 6.31.2 Test Coordinator,
FORWARD completed EAs (data sheets) to FacOps records coordinator.

7.0 MINE PAGER PHONES PUBLIC ADDRESS ALARM SYSTEM TEST

NOTE

The Mine Phone button on the public address (PA) console is for the Mine Pager Phone announcements.

- 7.1 Test Coordinator,
STATION all necessary observers with EAs (data sheets) at predetermined locations to check INTRO and EVAC Alarms for all Mine Pager Phones.

- 7.2 CMRO, (Steps 7.2 through 7.14),
REMOVE PA Handset from cradle.
- 7.3 **PRESS** Mine Phone button.
- 7.4 **VERIFY** Mine Phone page button illuminates.
 - 7.4.1 **IF** Mine Phone page button does NOT illuminate,
THEN INITIATE an action request (AR) at completion of test for deficiencies.
- 7.5 **PERFORM** following:
 - 7.5.1 **PRESS AND HOLD** Handset push button while making announcements.
 - 7.5.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the Test Window for the Plant Communication Systems Testing is now open. Disregard PA test alarms until further notice.”
 - 7.5.3 **REPEAT** announcement.
- 7.6 **PRESS** RESET button,
OR REPLACE Handset to deselect zone page buttons.
- 7.7 **ALLOW** at least 5 (five) minutes to pass,
THEN REMOVE PA Handset from cradle.
- 7.8 **PRESS** Mine Phone button.
- 7.9 **VERIFY** Mine Phone page button illuminates.
 - 7.9.1 **IF** Mine Phone page button does NOT illuminate,
THEN INITIATE an AR at completion of test for deficiencies.
- 7.10 **PERFORM** following:
 - 7.10.1 **PRESS AND HOLD** Handset push button while making announcements.
 - 7.10.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the following is a test of the Mine Phone INTRO Alarm. Disregard PA test alarms until further notice.”
 - 7.10.3 **REPEAT** announcement.

- 7.11 **PRESS** INTRO button on PA console.
- 7.12 **ALLOW** tone to sound for at least 5 (five) seconds.
- 7.13 **PRESS** CLEAR button on PA console.
- 7.14 **PRESS** RESET button,
OR REPLACE Handset to deselect zone page buttons.
- 7.15 Observers,
RECORD performance (SAT or UNSAT) of Mine Phone INTRO Alarm test on EA04PC3018-3-0, *Testing Alarm for All Underground Mine Pager Phones*, and/or EA04PC3018-4-0, *Testing Alarm for All Surface Mine Pager Phones*.
 - 7.15.1 Observers,
RECORD Initials and Time on EA04PC3018-3-0 and/or EA04PC3018-4-0 Mine Phones.
- 7.16 CMRO, (Steps 7.16 through 7.23)
REMOVE PA Handset from cradle.
- 7.17 **PRESS** Mine Phone button.
- 7.18 **VERIFY** Mine Phone page button illuminates.
 - 7.18.1 **IF** Mine Phone page button does NOT illuminate,
THEN INITIATE an AR at completion of test for deficiencies.
- 7.19 **PERFORM** following:
 - 7.19.1 **PRESS AND HOLD** Handset push button while making announcements.
 - 7.19.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the following is a test of the Mine Phone EVAC Alarm. Disregard PA test alarms until further notice.”
 - 7.19.3 **REPEAT** announcement.
- 7.20 **PRESS** EVAC button on PA console.
- 7.21 **ALLOW** tone to sound for at least 5 (five) seconds.
- 7.22 **PRESS** CLEAR button on PA console.
- 7.23 **PRESS** RESET button,
OR REPLACE Handset to deselect zone page buttons.

- 7.24 Observers,
RECORD performance (SAT or UNSAT) of Mine Phone EVAC Alarm test on EA04PC3018-3-0, *Testing Alarm for All Underground Mine Pager Phones*, and/or EA04PC3018-4-0, *Testing Alarm for All Surface Mine Pager Phones*.
- 7.24.1 Observers,
RECORD Initials and Time on EA04PC3018-3-0 and/or EA04PC3018-4-0 for Mine Phones.
- 7.25 Test Coordinator,
IF testing of Mine Phone INTRO and EVAC Alarms are NOT complete,
THEN NOTIFY CMRO by voice to repeat Steps 7.7 through 7.24.1.
- 7.25.1 Test Coordinator,
STATION all necessary observers with EAs (data sheets) at new predetermined locations to check INTRO and EVAC Alarms for Mine Phones.
- 7.25.2 CMRO,
REPEAT Steps 7.7 through 7.24.1 until all Mine Phone INTRO and EVAC Alarm speakers are tested.
- 7.26 Test Coordinator,
NOTIFY CMRO Mine Phone INTRO and EVAC Alarm testing is complete.
- 7.27 CMRO, (Steps 7.27 through 7.30.2),
IF Mine Phone testing is complete and no other Zone is to be tested,
THEN REMOVE PA Handset from cradle.
- 7.28 **PRESS** ALL PAGE button.
- 7.29 **VERIFY** all individual Zone page buttons illuminate.
- 7.29.1 **IF** individual Zone page buttons do NOT illuminate,
THEN INITIATE an AR at completion of test for deficiencies.
- 7.30 **PERFORM** following:
- 7.30.1 **PRESS AND HOLD** Handset push button while making announcements.
- 7.30.2 **INITIATE** following announcement using normal voice.
- “May I have your attention please, may I have your attention please, the Test Window is now closed, this completes the test of the public address system, regard all further alarms as valid.”

7.31 Test Coordinator,
COLLECT all copies of EA04PC3018-3-0, *Testing Alarm for All Underground Mine Pager Phones*, and EA04PC3018-4-0, *Testing Alarm for All Surface Mine Pager Phones*,
AND EVALUATE data for deficiencies.

7.31.1 Test Coordinator,
INITIATE an AR at completion of test for deficiencies.

7.31.2 Test Coordinator,
FORWARD completed EAs (data sheets) to FacOps records coordinator.

8.0 UNDERGROUND STROBE LIGHTS SYSTEM TEST

8.1 Test Coordinator,
STATION all necessary observers with EAs (data sheets) at predetermined locations to check Underground Strobe Lights.

8.2 CMRO, (Steps 8.2 through 8.13),
REMOVE PA Handset from cradle.

8.3 **PRESS** Zone 4 button.

8.4 **VERIFY** Zone 4 page button illuminates.

8.4.1 **IF** Zone 4 page button does NOT illuminate,
THEN INITIATE an action request (AR) at completion of test for deficiencies.

8.5 **PERFORM** following:

8.5.1 **PRESS AND HOLD** Handset push button while making announcements.

8.5.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the Test Window for the Plant Communication Systems Testing is now open. Disregard PA test alarms until further notice.”

8.5.3 **REPEAT** announcement.

8.6 **PRESS** RESET button,
OR REPLACE Handset to deselect zone page buttons.

8.7 **ALLOW** at least 5 (five) minutes to pass,
THEN REMOVE PA Handset from cradle.

- 8.8 **PRESS** Zone 4 page button on PA console.
- 8.9 **VERIFY** Zone 4 page button illuminates.
 - 8.9.1 **IF** Zone 4 page button does NOT illuminate,
THEN INITIATE an AR at completion of test for deficiencies.
- 8.10 **PERFORM** following:
 - 8.10.1 **PRESS AND HOLD** Handset push button while making announcements.
 - 8.10.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the following is a test of the Underground Strobe Lights from the Central Monitoring Room.”
 - 8.10.3 **REPEAT** announcement.
- 8.11 **ROTATE** EVACUATION ALARM SELECTOR switch RIGHT to EVAC position,
AND HOLD for at least 5 (five) seconds.
- 8.12 On CMS alarm screen,
VERIFY U/G EVAC alarm has activated.
 - 8.12.1 **IF** U/G EVAC alarm did NOT activate on CMS screen,
THEN INITIATE an AR at completion of test for deficiencies.
- 8.13 **PRESS** RESET,
OR REPLACE Handset to deselect zone page buttons.
- 8.14 Observers,
RECORD performance (SAT or UNSAT) of Strobe Light test from CMR on EA04PC3018-5-0, *Testing Alarm for All U/G Strobe Lights*.
 - 8.14.1 Observers,
RECORD Initials and Time on EA04PC3018-5-0.
- 8.15 CMRO, (Steps 8.15 through 8.16.1),
ROTATE EVACUATION ALARM SELECTOR switch LEFT to RESET position,
AND HOLD for at least 5 (five) seconds.
- 8.16 On CMS alarm screen,
VERIFY U/G EVAC alarm has reset.
 - 8.16.1 **IF** U/G EVAC alarm did NOT reset on CMS screen,
THEN INITIATE an AR at completion of test for deficiencies.

- 8.17 Observers,
VERIFY strobe lights reset.
- 8.17.1 Observers,
IF U/G strobe lights did NOT reset,
THEN INITIATE an AR at completion of test for deficiencies.
- 8.18 CMRO, (Steps 8.18 through 8.22),
REMOVE PA Handset from cradle.
- 8.19 **PRESS** Zone 4 button.
- 8.20 **VERIFY** Zone 4 page button illuminates.
- 8.20.1 **IF** Zone 4 page button does NOT illuminate,
THEN INITIATE an AR at completion of test for deficiencies.
- 8.21 **PERFORM** following:
- 8.21.1 **PRESS AND HOLD** Handset push button while making announcements.
- 8.21.2 **INITIATE** following announcement using normal voice.
- “May I have your attention please, may I have your attention please, the Strobe Lights will be tested from the Salt Hoist. Disregard PA test alarms until further notice.”
- 8.21.3 **REPEAT** announcement.
- 8.22 **REQUEST** Salt Hoist Operator to,
ROTATE MINE EVACUATION ALARM switch to ON,
AND HOLD for at least 5 (five) seconds.
- 8.23 Observers,
RECORD performance (SAT or UNSAT) of Strobe Light test from Salt Hoist on EA04PC3018-5-0, *Testing Alarm for All U/G Strobe Lights*.
- 8.23.1 Observers,
RECORD Initials and Time on EA04PC3018-5-0.
- 8.24 CMRO,
REQUEST Salt Hoist Operator to,
ROTATE MINE EVACUATION ALARM switch to OFF for at least 5 (five) seconds.
- 8.25 Observers,
VERIFY strobe lights reset.

- 8.25.1 Observers,
IF U/G strobe lights did NOT reset,
THEN INITIATE an AR at completion of test for deficiencies.
- 8.26 CMRO, (Steps 8.26 through 8.30),
REMOVE PA Handset from cradle.
- 8.27 **PRESS** Zone 4 button.
- 8.28 **VERIFY** Zone 4 page button illuminates.
 - 8.28.1 **IF** Zone 4 page button does NOT illuminate,
THEN INITIATE an AR at completion of test for deficiencies.
- 8.29 **PERFORM** following:
 - 8.29.1 **PRESS AND HOLD** Handset push button while making announcements.
 - 8.29.2 **INITIATE** following announcement using normal voice.

“May I have your attention please, may I have your attention please, the Strobe Lights will be tested from the Waste Hoist. Disregard PA test alarms until further notice.”
 - 8.29.3 **REPEAT** announcement.
- 8.30 **REQUEST** Waste Hoist Operator to,
ROTATE MINE EVACUATION ALARM switch to ON,
AND HOLD for at least 5 (five) seconds.
- 8.31 Observers,
RECORD performance (SAT or UNSAT) of Strobe Light test from Waste Hoist on EA04PC3018-5-0, *Testing Alarm for All U/G Strobe Lights*.
 - 8.31.1 Observers,
RECORD Initials and Time on EA04PC3018-5-0.
- 8.32 CMRO,
REQUEST Waste Hoist Operator to,
ROTATE MINE EVACUATION ALARM switch to OFF for at least 5 (five) seconds.
- 8.33 Observers,
VERIFY strobe lights reset.
 - 8.33.1 Observers,
IF U/G strobe lights did NOT reset,
THEN INITIATE an AR at completion of test for deficiencies.

- 8.34 Test Coordinator,
IF testing Strobe Lights are NOT complete,
THEN NOTIFY CMRO by voice to repeat Steps 8.2 through 8.33.1.
- 8.34.1 Test Coordinator,
STATION all necessary observers with EAs (data sheets) at new predetermined locations to check Strobe Lights.
- 8.34.2 CMRO,
REPEAT Steps 8.2 through 8.33.1 until all Strobe Lights are tested.
- 8.35 Test Coordinator,
NOTIFY CMRO Strobe Light testing is complete.
- 8.36 CMRO, (Steps 8.36 through 8.39.2),
IF Strobe Light testing is complete and no other Zone is to be tested,
THEN REMOVE PA Handset from cradle.
- 8.37 **PRESS** ALL PAGE button.
- 8.38 **VERIFY** all individual Zone page buttons illuminate.
- 8.38.1 **IF** individual Zone page buttons do NOT illuminate,
THEN INITIATE an AR at completion of test for deficiencies.
- 8.39 **PERFORM** following:
- 8.39.1 **PRESS AND HOLD** Handset push button while making announcements.
- 8.39.2 **INITIATE** following announcement using normal voice.
- “May I have your attention please, may I have your attention please, the Test Window is now closed, this completes the test of the Strobe Lights, regard all further alarms as valid.”
- 8.40 Test Coordinator,
COLLECT all copies of EA04PC3018-5-0, *Testing Alarm for All U/G Strobe Lights*,
AND EVALUATE data for deficiencies.
- 8.40.1 Test Coordinator,
INITIATE an AR at completion of test for deficiencies.
- 8.40.2 Test Coordinator,
FORWARD completed EAs (data sheets) to FacOps records coordinator.

9.0 PAGER PHONE TEST

- 9.1 Test Coordinator,
STATION phone tester Underground with a list of all Underground Mine Pager Phones and locations to be tested.
- 9.1.1 **REQUEST** phone tester to test each Underground Mine Pager Phone on list.
- 9.2 Phone Tester,
PERFORM AND RECORD results (SAT or UNSAT) of following Underground Mine Pager Phone listed on EA04PC3018-6-0, *Testing of All Underground Mine Pager Phones*.
- 9.2.1 CMRO,
REQUEST phone tester to,
PAGE CMR from each of listed Underground Mine Pager Phones.
- 9.2.2 Phone Tester,
RECORD Underground to CMR Page as SAT or UNSAT on EA04PC3018-6-0.
- [A] **RECORD** Time and Initials for selected phone on EA04PC3018-6-0.
- [B] **IF** Underground to CMR Page was UNSAT,
THEN NOTIFY FSM by voice at completion of test,
AND INITIATE an action request (AR) at completion of test for deficiencies.
- 9.2.3 CMRO,
REQUEST phone tester to use three-way communication (Example "This is a test 1, 2, 3, 4, 5") to,
VERIFY understandable voice communication with CMRO as SAT or UNSAT.
- [A] Phone Tester,
IF communication was UNSAT,
THEN NOTIFY FSM by voice at completion of test,
AND INITIATE an AR at completion of test for deficiencies.
- 9.2.4 Phone Tester,
RECORD understandable voice communication with phone tester as SAT or UNSAT on EA04PC3018-6-0.

- [A] **RECORD** Time and Initials for selected phone on EA04PC3018-6-0.
- 9.2.5 CMRO,
PAGE phone tester at same selected phone location.
- 9.2.6 CMRO,
REQUEST phone tester to,
VERIFY CMR to Underground Page as SAT or UNSAT.
- [A] Phone Tester,
IF Page was UNSAT,
THEN NOTIFY FSM by voice at completion of test,
AND INITIATE an AR at completion of test for deficiencies.
- 9.2.7 Phone Tester,
RECORD CMR to Underground Page as SAT or UNSAT on EA04PC3018-6-0.
- [A] **RECORD** Time and Initials for selected phone on EA04PC3018-6-0.
- 9.3 Phone Tester,
ENSURE performance (SAT or UNSAT) of each Mine Pager Phone Test is recorded on EA04PC3018-6-0.
- 9.4 Phone Tester,
IF all Mine Pager Phone tests were satisfactory,
THEN RECORD a check (√) in checkbox on EA04PC3018-6-0.
- 9.4.1 **RECORD** completed by Name, Signature, Initials, Date and Time on EA04PC3018-6-0.
- 9.5 Phone Tester,
INITIATE an AR for defective equipment,
AND RECORD comment on EA04PC3018-6-0.
- 9.6 Test Coordinator,
STATION phone tester on surface with a list of all Surface Pager Phones and locations to be tested.
- 9.6.1 **REQUEST** phone tester to test each Surface Pager Phone on list.
- 9.7 Phone Tester,
PERFORM AND RECORD results (SAT or UNSAT) of following Surface Essential Pager Phone as listed on EA04PC3018-7-0, *Testing of All Surface Pager Phones*.

- 9.7.1 CMRO,
REQUEST phone tester to,
PAGE CMR from each of listed Surface Pager Phones.
- 9.7.2 Phone Tester,
RECORD Surface to CMR Page as SAT or UNSAT on
EA04PC3018-7-0.
- [A] **RECORD** Time and Initials for selected phone on
EA04PC3018-7-0.
- [B] **IF** Surface to CMR Page was UNSAT,
THEN NOTIFY FSM by voice at completion of test,
AND INITIATE an AR at completion of test for deficiencies.
- 9.7.3 CMRO,
REQUEST phone tester to use three-way communication
(Example "This is a test 1, 2, 3, 4, 5") to,
VERIFY understandable voice communication with CMRO as
SAT or UNSAT.
- [A] Phone Tester,
IF communication was UNSAT,
THEN NOTIFY FSM by voice at completion of test,
AND INITIATE an AR at completion of test for deficiencies.
- 9.7.4 Phone Tester,
RECORD understandable voice communication with phone tester
as SAT or UNSAT on EA04PC3018-7-0.
- [A] **RECORD** Time and Initials on EA04PC3018-7-0.
- [B] **IF** communication was UNSAT,
THEN NOTIFY FSM by voice at completion of test,
AND INITIATE an AR at completion of test for deficiencies.
- 9.7.5 CMRO,
PAGE phone tester at same location.
- 9.7.6 CMRO,
REQUEST phone tester to,
VERIFY CMR to Surface Page as SAT or UNSAT.
- [A] Phone Tester,
IF Page was UNSAT,
THEN NOTIFY FSM by voice at completion of test,
AND INITIATE an AR at completion of test for deficiencies.

9.7.7 Phone Tester,
RECORD CMR to Surface Page as SAT or UNSAT on
EA04PC3018-7-0.

[A] **RECORD** Time and Initials for selected phone on
EA04PC3018-7-0.

9.8 Phone Tester,
ENSURE performance (SAT or UNSAT) of each Surface Pager Phone
test is recorded on EA04PC3018-7-0.

9.9 Phone Tester,
IF all Surface Pager Phone tests were satisfactory
THEN RECORD a check (√) in checkbox on EA04PC3018-7-0.

9.9.1 **RECORD** completed by Name, Signature, Initials, Date and Time
on EA04PC3018-7-0.

9.10 Phone Tester,
INITIATE an AR for defective equipment,
AND RECORD comment on EA04PC3018-7-0.

10.0 MANAGEMENT OF RECORDS

10.1 **FORWARD** completed test record to Test Coordinator for validation.

10.2 Test Coordinator,
REVIEW AND SIGN Validation on all Data Sheets (EA04PC3018-1-0
through EA04PC3018-7-0.

10.3 Test Coordinator,
FORWARD completed EAs (data sheets) to FacOps records coordinator.

ATTACHMENT

None

Testing Alarm for All Speakers

Perimeter Speakers

Reference drawing: 73-J-456

ACCEPTANCE CRITERIA

Outside public address speakers and mine pager phones:

- Within 30 to 40 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

		All Page INTRO				All Page EVAC				Zone 3			
Equip No.	Equip No.	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
240-PA-001	West Railroad Gate												
240-PA-002	North Gate												

Comments: _____

Persons initialing for Step completion in this procedure, complete the following:

Completed by:

_____/_____/_____/_____/_____
 Print Name Signature Initials Date Time

_____/_____/_____/_____/_____
 Print Name Signature Initials Date Time

_____/_____/_____/_____/_____
 Print Name Signature Initials Date Time

Validated by:

_____/_____/_____/_____/_____
 Print Name Signature Initials Date Time

Testing Alarm for All Speakers

Bldg 253 Speakers

Reference drawing: 73-J-XXX

ACCEPTANCE CRITERIA

Outside public address speakers and mine pager phones:

- Within 30 to 40 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

		All Page INTRO				All Page EVAC				Zone 3			
Equip No.	Equip No.	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
253-PA-001	Outside, West Wall S												
253-PA-002	Outside, West Wall N												

Comments: _____

Persons initialing for Step completion in this procedure, complete the following:

Completed by:

_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time

Validated by:

_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time

Testing Alarm for All Speakers

Bldg 247 Speakers

Reference drawing: 73-J-247-W1

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

		All Page INTRO				All Page EVAC				SNS			
Equip No.	Equip No.	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
73-PA-551	S Wall West Side												
73-PA-552	S Wall Central												
73-PA-553	S Wall East Side												

Comments: _____

Persons initialing for Step completion in this procedure, complete the following:

Completed by:

_____ /	_____ /	_____ /	_____ /	_____ /
Print Name	Signature	Initials	Date	Time
_____ /	_____ /	_____ /	_____ /	_____ /
Print Name	Signature	Initials	Date	Time
_____ /	_____ /	_____ /	_____ /	_____ /
Print Name	Signature	Initials	Date	Time

Validated by:

_____ /	_____ /	_____ /	_____ /	_____ /
Print Name	Signature	Initials	Date	Time

Testing Alarm for All Speakers

Bldg 372 Speakers

Reference drawing: 73-J-384-W1 and W2

ACCEPTANCE CRITERIA

Outside public address speakers and mine pager phones:

- Within 30 to 40 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

		All Page INTRO				All Page EVAC				Zone 3			
Equip No.	Equip No.	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
384-PA-005	Salt H Headframe E												
384-PA-006	Salt H Headframe W												

Comments: _____

Persons initialing for Step completion in this procedure, complete the following:

Completed by:

_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time

Validated by:

_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time

Bldg 384 Speakers

Reference drawing: 73-J-384-W1

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

Outside public address speakers and mine pager phones:

- Within 30 to 40 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

		All Page INTRO				All Page EVAC				Zone 3			
Equip No.	Equip No.	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
384-PA-001													
384-PA-002	Inside on North Wall												
384-PA-003	Outside N/E Corner												
384-PA-004	Outside N/E Corner												
384-PA-007	Inside on S/E Wall												
384-PA-008													

Draft

Testing Alarm for All Speakers

Bldg 384 Speakers

Reference drawing: 73-J-384-W1

Comments: _____

Persons initialing for Step completion in this procedure, complete the following:

Completed by:

_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time

Validated by:

_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time

Testing Alarm for All Speakers

Bldg 411 Speakers

Reference drawing: 73-J-411-W1 and W3

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

Outside public address speakers and mine pager phones:

- Within 30 to 40 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

Equip No.	Equip No.	All Page INTRO				All Page EVAC				Zone 2			
		SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
411-PA-01	Site Waste Gen												
411-PA-02	Site Waste Gen												
411-PA-033	Cask Loading Room												
411-PA-034	Service Room												
411-PA-04	Overpack & Repair Rm												
411-PA-112	Overpack & Repair Rm S Wall, E of Bay Door												
411-PA-114	NW Wall of CH Bay in Controlled Access Area												
411-PA-12	Overpack & Repair Rm												
411-PA-13	Small Decon Rm												
411-PA-14	Overpack & Repair Rm												
411-PA-15	Site Waste Gen												
411-PA-20	Site Waste Gen												
411-PA-21	Site Waste Gen												
411-PA-22	Access Corridor												
411-PA-23	Access Corridor												
411-PA-24	Cage Loading												
411-PA-25	CH Bay												

Testing Alarm for All Speakers

Bldg 411 Speakers

Reference drawing: 73-J-411-W1 and W3

Equip No.	Equip No.	All Page INTRO				All Page EVAC				Zone 2 + SNS			
		SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
411-PA-35	RH Bay												
411-PA-36	Shaft Entry												
411-PA-37	Air Lock												
411-PA-38	RH Bay												
411-PA-39	RH Bay												
411-PA-40	South East Wall RH Bay, by Back Door												
411-PA-41	RH Bay												
411-PA-42	RH Bay												
411-PA-43	RH Bay												
411-PA-44	RH Bay												
411-PA-45	Access Corridor												
411-PA-46	Filter Gallery												
411-PA-47	Filter Gallery												
411-PA-48	Access Corridor												
411-PA-49	Access Corridor												
411-PA-50	North Wall of Operating Gallery												
411-PA-55	Mech Equip Rm												
411-PA-56	Mech Equip Rm												
411-PA-57	AHU Equip Rm												
411-PA-58	Mech Equip Rm												
411-PA-59	AHU Equip Rm												
411-PA-60	Mech Equip Rm												
411-PA-61	Mech Equip Rm												
411-PA-62	Air Lock												
411-PA-63	Hoist Control Rm												

Draft

Testing Alarm for All Speakers

Bldg 411 Speakers

Reference drawing: 73-J-411-W1 and W3

Equip No.	Equip No.	All Page INTRO				All Page EVAC				Zone 2 + SNS			
		SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
411-PA-64	Access Aisle												
411-PA-65	Manipulator Rm												
411-PA-66	Operation Gallery												
411-PA-67	Operation Gallery												
411-PA-68	Operation Gallery												
411-PA-69	Operation Gallery												
411-PA-70	Operation Gallery												
411-PA-71	RH Bay												
411-PA-72	5 th Floor												
411-PA-73	4 th Floor												
411-PA-74	Hoist Control Rm												
411-PA-75	Hoist Control Rm												

Comments: _____

Testing Alarm for All Speakers

Bldg 411 Speakers

Reference drawing: 73-J-411-W1 and W3

Persons initialing for Step completion in this procedure, complete the following:

Completed by:

_____/_____/_____/_____/_____/	Print Name	_____/_____/_____/_____/_____/	Signature	_____/_____/_____/_____/_____/	Initials	_____/_____/_____/_____/_____/	Date	_____/_____/_____/_____/_____/	Time
_____/_____/_____/_____/_____/	Print Name	_____/_____/_____/_____/_____/	Signature	_____/_____/_____/_____/_____/	Initials	_____/_____/_____/_____/_____/	Date	_____/_____/_____/_____/_____/	Time
_____/_____/_____/_____/_____/	Print Name	_____/_____/_____/_____/_____/	Signature	_____/_____/_____/_____/_____/	Initials	_____/_____/_____/_____/_____/	Date	_____/_____/_____/_____/_____/	Time
_____/_____/_____/_____/_____/	Print Name	_____/_____/_____/_____/_____/	Signature	_____/_____/_____/_____/_____/	Initials	_____/_____/_____/_____/_____/	Date	_____/_____/_____/_____/_____/	Time
_____/_____/_____/_____/_____/	Print Name	_____/_____/_____/_____/_____/	Signature	_____/_____/_____/_____/_____/	Initials	_____/_____/_____/_____/_____/	Date	_____/_____/_____/_____/_____/	Time
_____/_____/_____/_____/_____/	Print Name	_____/_____/_____/_____/_____/	Signature	_____/_____/_____/_____/_____/	Initials	_____/_____/_____/_____/_____/	Date	_____/_____/_____/_____/_____/	Time

Validated by:

_____/_____/_____/_____/_____/	Print Name	_____/_____/_____/_____/_____/	Signature	_____/_____/_____/_____/_____/	Initials	_____/_____/_____/_____/_____/	Date	_____/_____/_____/_____/_____/	Time
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Testing Alarm for All Speakers

Bldg 412 Speakers

Reference drawing: 73-J-411-W1

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

Outside public address speakers and mine pager phones:

- Within 30 to 40 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

		All Page INTRO				All Page EVAC				Zone 2			
Equip No.	Equip No.	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
412-PA-01	TMF												
412-PA-02	East Wall of Rm 102, by Air Lock Entering CH Bay												
412-PA-05	South Wall of Rm 102, by Door Outside												

Comments: _____

Testing Alarm for All Speakers

Bldg 412 Speakers

Reference drawing: 73-J-411-W1

Persons initialing for Step completion in this procedure, complete the following:

Completed by:

_____/	_____/	_____/	_____/	_____/
Print Name	Signature	Initials	Date	Time
_____/	_____/	_____/	_____/	_____/
Print Name	Signature	Initials	Date	Time
_____/	_____/	_____/	_____/	_____/
Print Name	Signature	Initials	Date	Time

Validated by:

_____/	_____/	_____/	_____/	_____/
Print Name	Signature	Initials	Date	Time

Testing Alarm for All Speakers

Bldg 413 Speakers

Reference drawing: 73-J-413-W1

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

Outside public address speakers and mine pager phones:

- Within 30 to 40 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

		All Page INTRO				All Page EVAC				Zone 2			
Equip No.	Equip No.	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
413-PA-001	Outside North Wall E												
413-PA-002	Mech Equip Rm												
413-PA-003	Outside South Wall E												
413-PA-004	West Wall												
413-PA-005	West Wall N												

Comments: _____

Testing Alarm for All Speakers

Bldg 413 Speakers

Reference drawing: 73-J-413-W1

Persons initialing for Step completion in this procedure, complete the following:

Completed by:

_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time
_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time
_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time
_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time
_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time

Validated by:

_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time
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Testing Alarm for All Speakers

Bldg 451 1st Floor Speakers

Reference drawing: 73-J-451-W1

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

Outside public address speakers and mine pager phones:

- Within 30 to 40 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

		All Page INTRO				All Page EVAC				Zone 1			
Equip No.	Equip No.	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
451-PA-01	Lamp Rm												
451-PA-02	Lamp Rm												
451-PA-03	FAC Ops Next to 108												
451-PA-04	FAC Ops Office												
451-PA-05	Mine Ops Office												
451-PA-06	Men's Change Rm E												
451-PA-07	Elect Equip Rm												
451-PA-08	Corridor between S/WHB												
451-PA-09	LAB Area												
451-PA-10	Hallway next to 119												
451-PA-11	LAB Area												
451-PA-12	LAB Area												
451-PA-13	Lab Area Office												
451-PA-14	LAB Area												
451-PA-15	LAB Area												
451-PA-16	Fac Ops Eng Area												
451-PA-17	Telephone Conference												

Testing Alarm for All Speakers

Bldg 451 1st Floor Speakers

Reference drawing: 73-J-451-W1

		All Page INTRO				All Page EVAC				Zone 1			
Equip No.	Equip No.	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
451-PA-18	Hallway next to WCR												
451-PA-19	Hallway next to ?												
451-PA-20	Supervisor Change Rm												
451-PA-21	Woman's Change Rm												
451-PA-22	Fac Ops Lunch Area												
451-PA-23	FSM Clerk's office												
451-PA-24	Rm104												
451-PA-25	Fac Ops E Hallway												
451-PA-26	Mech Equip Rm												
451-PA-27	N/W Conference Rm												
451-PA-28	Men's Restroom												
451-PA-29	Women's Restroom												
451-PA-30	Library Area Rm 144												
451-PA-31	Lobby Trophy Area												
451-PA-32	Lobby Area												
451-PA-33	Lobby Mail Stop Area												
451-PA-34	Library Area Rm147												
451-PA-35	Rm 147												
451-PA-36	H/R Bullpen N/E												
451-PA-37	H/R Bullpen S/E												
451-PA-38	H/R Bullpen N/W												
451-PA-39	H/R Bullpen S/W												
451-PA-40	H/R Bull Pen Area												
451-PA-46	N/E Outside Corner												
451-PA-57	Outside S/W Corner												

Draft

Testing Alarm for All Speakers

Bldg 451 1st Floor Speakers

Reference drawing: 73-J-451-W1

Comments: _____

Persons initialing for Step completion in this procedure, complete the following:

Completed by:

_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time
_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time
_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time
_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time
_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time
_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time

Validated by:

_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time
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Testing Alarm for All Speakers

Bldg 451 2nd Floor Speakers

Reference drawing: 73-J-451-W1

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

Outside public address speakers and mine pager phones:

- Within 30 to 40 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

Equip No.	Equip No.	All Page INTRO				All Page EVAC				Zone 1			
		SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
451-PA-47	2 nd Floor Computer Rm												
451-PA-48	2 nd Floor Computer Rm												
451-PA-49	East Stairwell												
451-PA-50	Elect Equip Rm												
451-PA-51	2 nd Floor Bullpen N/CW												
451-PA-52	2 nd Floor Bullpen N/CE												
451-PA-53	2 nd Floor Bullpen N/E												
451-PA-54	2 nd Floor Bullpen S/E												
451-PA-55	2 nd Floor Bullpen S/CE												
451-PA-56	Southside of Bullpen												
451-PA-58	2 nd Floor Men's Restroom												
451-PA-59	2 nd Floor Women's Restroom												
451-PA-60	2 nd Floor L Conference Rm												
451-PA-61	2 nd Floor S Conference Rm												
451-PA-62	North Stairwell												
451-PA-63	2 nd Floor DOE Office Area												
451-PA-64	2 nd Floor DOE Office Area												
451-PA-65	2 nd Floor DOE Office Area												

Draft

Testing Alarm for All Speakers

Bldg 451 2nd Floor Speakers

Reference drawing: 73-J-451-W1

Equip No.	Equip No.	All Page INTRO				All Page EVAC				Zone 1			
		SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
451-PA-66	2 nd Floor DOE Office Area												
451-PA-67	Office next to 246												
451-PA-68	2 nd Floor Hallway												
451-PA-69	Office next to 234												
451-PA-70	Office next to CMR												
451-PA-71	2 nd Floor Rm 247												
451-PA-72	2 nd Floor Bullpen S/CE												
451-PA-73	2 nd Floor Bullpen S/W												
451-PA-74	2 nd Floor Bullpen N/W												
451-PA-75	2 nd Floor Bullpen N/CW												
451-PA-76	2 nd Floor Lobby Area												
451-PA-77	Office next to ELEV												
451-PA-78	Conference Rm												
451-PA-79	Office next to ELEV												
451-PA-80	DOE Area												
451-PA-81	2 nd Floor Rm 244												

Comments: _____

Persons initialing for Step completion in this procedure, complete the following:

Draft

Testing Alarm for All Speakers

Bldg 451 2nd Floor Speakers

Reference drawing: 73-J-451-W1

Completed by:

Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time

Validated by:

Print Name	/	Signature	/	Initials	/	Date	/	Time
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Testing Alarm for All Speakers

Bldg 452 Speakers

Reference drawing: 73-J-452-W1

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

Outside public address speakers and mine pager phones:

- Within 30 to 40 feet can be heard and understood.

If a criterion is NOT meet or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

		All Page INTRO				All Page EVAC				Zone 3			
Equip No.	Equip No.	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
452-PA-001	2 nd Floor Bullpen N/E												
452-PA-002	2 nd Floor Bullpen S/W												
452-PA-003	Equip Bay, S Wall												
452-PA-004	Fire, Rm 112												
452-PA-005	EOC Aux, Rm 107												
452-PA-006	West Side Hallway												
452-PA-007	Mine Rescue Rm												
452-PA-008	Dosimetry LAB												
452-PA-009	EOC												
452-PA-010	Nurse Entrance												
452-PA-011	Nurse, Rm 133												
452-PA-012	Nurse Station												
452-PA-013	Nurse, Cubical												
452-PA-014	Nurse, Rm 131												
452-PA-015	Nurse Hallway												
452-PA-016	Nurse, Rm 128												
452-PA-017	Nurse, Restroom												

Testing Alarm for All Speakers

Bldg 452 Speakers

Reference drawing: 73-J-452-W1

Comments: _____

Persons initialing for Step completion in this procedure, complete the following:

Completed by:

_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time

Validated by:

_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time

Testing Alarm for All Speakers

Bldg 453 Speakers

Reference drawing: 73-J-453-W1

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

Outside public address speakers and mine pager phones:

- Within 30 to 40 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

		All Page INTRO				All Page EVAC				Zone 3			
Equip No.	Equip No.	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
453-PA-01	Center of South Wall												
453-PA-02	Outside South Wall												
453-PA-03	Outside West Wall												
453-PA-04	West Wall												
453-PA-05	Outside North Wall												
453-PA-06	Tool Crib Area												
453-PA-07	Outside East Wall												
453-PA-08	Office Area												
453-PA-09	Center of North Wall												

Comments: _____

Persons initialing for Step completion in this procedure, complete the following:

Draft

Testing Alarm for All Speakers

Bldg 453 Speakers

Reference drawing: 73-J-453-W1

Completed by:

Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time

Validated by:

Print Name	/	Signature	/	Initials	/	Date	/	Time
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Draft

Testing Alarm for All Speakers

Bldg 455 Speakers

Reference drawing: 73-J-456-W1

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

		All Page INTRO				All Page EVAC				Zone 3			
Equip No.	Equip No.	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
73-PA-568	In Side 455 Bldg												

Comments: _____

Persons initialing for Step completion in this procedure, complete the following:

Completed by:

_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time

Validated by:

_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time

Testing Alarm for All Speakers

Bldg 456 Speakers

Reference drawing: 73-J-456-W1

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

Outside public address speakers and mine pager phones:

- Within 30 to 40 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

Equip No.	Equip No.	All Page INTRO				All Page EVAC				Zone 3			
		SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
456-PA-01	West Wall												
456-PA-02	Southwest Wall												
456-PA-03	South Wall												
456-PA-04	East Wall												
456-PA-05	Northeast Wall												

Comments: _____

Testing Alarm for All Speakers

Bldg 456 Speakers

Reference drawing: 73-J-456-W1

Persons initialing for Step completion in this procedure, complete the following:

Completed by:

_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time
_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time
_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time

Validated by:

_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time
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Testing Alarm for All Speakers

Bldg 458/475 Speakers

Reference drawing: 73-J-458-W1

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

Outside public address speakers and mine pager phones:

- Within 30 to 40 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

		All Page INTRO				All Page EVAC				Zone 3			
Equip No.	Equip No.	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
458-PA-001	Outside North Wall												
458-PA-002	Office Area West												
458-PA-003	Security Offices												
458-PA-004	Elect Equip Rm												
458-PA-005	Kitchen Area												
458-PA-006	West Lunch Rm												
458-PA-007	Hallway												
458-PA-008	Lunch Rm												
458-PA-009	Guard Area, East												
458-PA-010	Guard Area, West												
73-PA-754	In Side 475 Bldg												

Comments: _____

Persons initialing for Step completion in this procedure, complete the following:

Draft

Testing Alarm for All Speakers

Bldg 458/475 Speakers

Reference drawing: 73-J-458-W1

Completed by:

_____/_____ Print Name	_____/_____ Signature	_____/_____ Initials	_____/_____ Date	_____/_____ Time
_____/_____ Print Name	_____/_____ Signature	_____/_____ Initials	_____/_____ Date	_____/_____ Time
_____/_____ Print Name	_____/_____ Signature	_____/_____ Initials	_____/_____ Date	_____/_____ Time
_____/_____ Print Name	_____/_____ Signature	_____/_____ Initials	_____/_____ Date	_____/_____ Time

Validated by:

_____/_____ Print Name	_____/_____ Signature	_____/_____ Initials	_____/_____ Date	_____/_____ Time
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Draft

Testing Alarm for All Speakers

Bldg 459 Speakers

Reference drawing: 73-J-459-W1

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

		All Page INTRO				All Page EVAC				Zone 3			
Equip No.	Equip No.	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
73-PA-569	In Side 459 Bldg												
73-PA-755	In Side 459 Bldg												

Comments: _____

Persons initialing for Step completion in this procedure, complete the following:

Completed by:

_____ /	_____ /	_____ /	_____ /	_____ /
Print Name	Signature	Initials	Date	Time
_____ /	_____ /	_____ /	_____ /	_____ /
Print Name	Signature	Initials	Date	Time
_____ /	_____ /	_____ /	_____ /	_____ /
Print Name	Signature	Initials	Date	Time

Validated by:

_____ /	_____ /	_____ /	_____ /	_____ /
Print Name	Signature	Initials	Date	Time

Draft

Testing Alarm for All Speakers

Bldg 468 Speakers

Reference drawing: 73-J-468-W1

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

		All Page INTRO				All Page EVAC				Zone 3			
Equip No.	Equip No.	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
73-PA-753	In Side 468 Bldg												

Comments: _____

Persons initialing for Step completion in this procedure, complete the following:

Completed by:

_____/_____/_____/_____/_____
Print Name Signature Initials Date Time

_____/_____/_____/_____/_____
Print Name Signature Initials Date Time

Validated by:

_____/_____/_____/_____/_____
Print Name Signature Initials Date Time

Testing Alarm for All Speakers

Bldg 482 Speakers

Reference drawing: 73-J-4XX-W1

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

		All Page INTRO				All Page EVAC				Zone 3			
Equip No.	Equip No.	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
73-PA-561	N Wall in Side Bldg												

Comments: _____

Persons initialing for Step completion in this procedure, complete the following:

Completed by:

_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time

Validated by:

_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time

Testing Alarm for All Speakers

Bldg 486 Speakers

Reference drawing: 73-J-486-W1

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

		All Page INTRO				All Page EVAC				Zone 3			
Equip No.	Equip No.	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
486-PA-001	West Bullpen South												
486-PA-003	West Bullpen North												
486-PA-004	Women Restroom												
486-PA-005	Men Restroom												
486-PA-006	Aux File Rm												
486-PA-007	East Bullpen South W												
486-PA-008	West Upper HVAC Rm												
486-PA-009	West Upper HVAC Rm												
486-PA-011	East Bullpen South												
486-PA-013	East Bullpen North												
486-PA-014	East Bullpen South E												
486-PA-016	East Bullpen North E												
486-PA-017	East Elect Equip Rm												
486-PA-018	East Conference Rm												
486-PA-019	Eng File Rm												
486-PA-020	South Entrance												
486-PA-021	North Entrance												

Comments: _____

Testing Alarm for All Speakers

Bldg 486 Speakers

Reference drawing: 73-J-486-W1

Persons initialing for Step completion in this procedure, complete the following:

Completed by:

Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time

Validated by:

Print Name	/	Signature	/	Initials	/	Date	/	Time
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Testing Alarm for All Speakers

Bldg 489 Speakers

Reference drawing: 73-J-489-W1

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

Outside public address speakers and mine pager phones:

- Within 30 to 40 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

		All Page INTRO				All Page EVAC				Zone 3			
Equip No.	Equip No.	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
489-PA-001	Reception Area												
489-PA-002	Manager's Office												
489-PA-003	Copier Rm												
489-PA-004	West Corridor, South												
489-PA-005	Bullpen South West												
489-PA-006	West Corridor, North												
489-PA-007	Bullpen South East												
489-PA-008	Bullpen North West												
489-PA-009	Bullpen North East												
489-PA-010	Audio/Video Area												
489-PA-011	East Corridor, North												
489-PA-012	Break Rm												
489-PA-013	Men Restroom												
489-PA-014	Women Restroom												
489-PA-015	Supply Room 105												
489-PA-016	Testing Area												
489-PA-017	East Corridor, South												
489-PA-018	Outside, S/W Corner												

Testing Alarm for All Speakers

Bldg 489 Speakers

Reference drawing: 73-J-489-W1

Comments: _____

Persons initialing for Step completion in this procedure, complete the following:

Completed by:

_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time

Validated by:

_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time

Testing Alarm for All Speakers

534 U/G Speakers

Reference drawing: 73-J-010-W1 and W3

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

		All Page INTRO				All Page EVAC				Zone 4			
Equip No.	Equip No.	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
73-PA-520	W920/S90												
73-PA-519	W620/S90												
73-PA-517	W300/N215												
73-PA-535	W250/S90												
73-PA-518	W170/N0												
73-PA-522	W170/S700												
73-PA-516	W30/S90												
73-PA-501	W30/S400												
73-PA-521A	W30/S500												
73-PA-521B	W30/S500												
73-PA-542	W30/S2580												
73-PA-543	W30/S3050												
73-PA-544	W30/S3350												
73-PA-513	E0/N780												
73-PA-505	E0/N115												
73-PA-502	E120/S700												
73-PA-503	E120/S1000												
73-PA-524	E120/S1600												
73-PA-540	E140/N1100												

Draft

Testing Alarm for All Speakers

534 U/G Speakers

Reference drawing: 73-J-010-W1 and W3

		All Page INTRO				All Page EVAC				Zone 4			
Equip No.	Equip No.	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
73-PA-529	E140/N780												
73-PA-530	E140/N560												
73-PA-514	E140/N550												
73-PA-531	E140/N250												
73-PA-504	E140/S1300												
73-PA-541	E300/N1400 (Shop)												
73-PA-532	E300 Shop												
73-PA-533	E300 Shop												
73-PA-534	E300 Shop												
73-PA-527	E360/S400												
73-PA-523	S1300/??? Shop												
73-PA-537	Panel 7, Room 2												
73-PA-539	Panel 7, Room 5												

Comments: _____

Testing Alarm for All Speakers

534 U/G Speakers

Reference drawing: 73-J-010-W1 and W3

Persons initialing for Step completion in this procedure, complete the following:

Completed by:

Print Name	Signature	Initials	Date	Time
/	/	/	/	/
Print Name	Signature	Initials	Date	Time
/	/	/	/	/
Print Name	Signature	Initials	Date	Time
/	/	/	/	/
Print Name	Signature	Initials	Date	Time
/	/	/	/	/
Print Name	Signature	Initials	Date	Time
/	/	/	/	/
Print Name	Signature	Initials	Date	Time

Validated by:

Print Name	Signature	Initials	Date	Time
/	/	/	/	/

Draft

Testing Alarm for All Speakers

902/903/904 Trailers Speakers

Reference drawing: 73-J-XXX-YY

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

		All Page INTRO				All Page EVAC				SNS Zone 3			
Equip No.	Equip No.	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
73-PA-756	SE Corner in 902												
73-PA-757	SW Corner in 903												
73-PA-758	SE Corner in 902												

Comments: _____

Persons initialing for Step completion in this procedure, complete the following:

Completed by:

_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time
_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time
_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time
_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time

Validated by:

_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time
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Testing Alarm for All Speakers

950 Trailer Speakers

Reference drawing: 73-J-950-W1

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

Outside public address speakers and mine pager phones:

- Within 30 to 40 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

		All Page INTRO				All Page EVAC				Zone 3			
Equip No.	Equip No.	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
950-PA-01	Outside, N/W Corner												
950-PA-02	Outside, S/W Corner												
950-PA-03	Conference Rm												
950-PA-04	Woman's Restroom												
950-PA-05	Men's Restroom												
950-PA-06	Bullpen N/W												
950-PA-07	Bullpen C/W												
950-PA-08	Bullpen S/W												
950-PA-09	Bullpen N/C												
950-PA-10	Bullpen C/C												
950-PA-11	Bullpen S/C												
950-PA-12	Bullpen N/E												
950-PA-13	Bullpen C/E												
950-PA-14	Bullpen S/E												

Testing Alarm for All Speakers

950 Trailer Speakers

Reference drawing: 73-J-950-W1

Comments: _____

Persons initialing for Step completion in this procedure, complete the following:

Completed by:

_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time

Validated by:

_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time

Testing Alarm for All Speakers

951 Trailer Speakers

Reference drawing: 73-J-951-W1

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

Outside public address speakers and mine pager phones:

- Within 30 to 40 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

		All Page INTRO				All Page EVAC				Zone 3			
Equip No.	Equip No.	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
951-PA-01	Outside, S/E Corner												
951-PA-02	Outside, S/W Corner												
951-PA-03	Men's Restroom												
951-PA-04	Women's Restroom												
951-PA-05	Bullpen E/C												
951-PA-06	Bullpen E/S												
951-PA-07	Bullpen WC/N												
951-PA-08	Bullpen WC/C												
951-PA-09	Bullpen WC/S												
951-PA-10	Bullpen EC/N												
951-PA-11	Bullpen EC/C												
951-PA-12	Bullpen EC/S												
951-PA-13	Office 105												
951-PA-14	Bullpen E/N												
951-PA-15	Bullpen E/C												
951-PA-16	Bullpen E/S												

Testing Alarm for All Speakers

951 Trailer Speakers

Reference drawing: 73-J-951-W1

Comments: _____

Persons initialing for Step completion in this procedure, complete the following:

Completed by:

Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time

Validated by:

Print Name	/	Signature	/	Initials	/	Date	/	Time
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Testing Alarm for All Speakers

952 Trailer Speakers

Reference drawing: 73-J-952-W1

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

Outside public address speakers and mine pager phones:

- Within 30 to 40 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

		All Page INTRO				All Page EVAC				Zone 3			
Equip No.	Equip No.	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
952-PA-01	Outside, S/E Corner												
952-PA-02	Outside, S/W Corner												
952-PA-03	Bullpen E/N												
952-PA-04	Bullpen C/N												
952-PA-05	Bullpen W/N												
952-PA-06	Bullpen E/C												
952-PA-07	Bullpen C/C												
952-PA-08	Bullpen W/C												
952-PA-09	Bullpen E/S												
952-PA-10	Bullpen C/S												
952-PA-11	Bullpen W/S												
952-PA-12	Woman's Restroom												
952-PA-13	Man's Restroom												

Testing Alarm for All Speakers

952 Trailer Speakers

Reference drawing: 73-J-952-W1

Comments: _____

Persons initialing for Step completion in this procedure, complete the following:

Completed by:

Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time

Validated by:

Print Name	/	Signature	/	Initials	/	Date	/	Time
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Testing Alarm for All Speakers

Bldg 953 Speakers

Reference drawing: 73-J-95X-W1

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

Equip No.	Location	All Page				Zone 3			
		SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
953-PA-01	Women Restroom								
953-PA-02	Men Restroom								
953-PA-03	South Hallway W End								
953-PA-04	South Hallway Center								
953-PA-06	South Hallway E End								
953-PA-07	North Hallway W End								
953-PA-08	North Hallway Center								
953-PA-09	North Hallway E End								

Comments: _____

Persons initialing for Step completion in this procedure, complete the following:

Draft

Testing Alarm for All Speakers

Bldg 953 Speakers

Reference drawing: 73-J-95X-W1

Completed by:

Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time

Validated by:

Print Name	/	Signature	/	Initials	/	Date	/	Time
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Draft

Testing Alarm for All Speakers

971 Trailer Speakers

Reference drawing: 73-J-9XX-W1

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

		All Page INTRO				All Page EVAC				Zone 3 (SNS)???			
Equip No.	Equip No.	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
73-PA-563	SW in Side of 971												

Comments: _____

Persons initialing for Step completion in this procedure, complete the following:

Completed by:

_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time
_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time
_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time

Validated by:

_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time
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Testing Alarm for All Speakers

986 Trailer Speakers

Reference drawing: 73-J-9XX-W1

ACCEPTANCE CRITERIA

Outside public address speakers and mine pager phones:

- Within 30 to 40 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

		All Page INTRO				All Page EVAC				Zone 3			
Equip No.	Equip No.	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
986-PA-01	Outside, N/E Corner												
986-PA-02	Outside, N/W Corner												

Comments: _____

Persons initialing for Step completion in this procedure, complete the following:

Completed by:

_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time

Validated by:

_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time

Testing Alarm for All Site Notification System Units

Site Notification System Units

Reference drawing: 73-J-XXX

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

Equip No.	Location	All Page				SNS			
		SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
Plectron	475 East Side								
Plectron	451 FSM Area								
Plectron	451 Change Room								
Plectron	459 Tool Crib								
Plectron	918B Front								
Plectron	918B Back								
Plectron	453 Inside S/E Corner								
73-PA-551	Bldg 247 Welding								
73-PA-552	Bldg 247 office								
73-PA-553	Bldg 247 Storage								
73-PA-562*	Bldg 917								
73-PA-563*	Bldg 971								
73-PA-567*	Bldg 468								
73-PA-568*	Bldg 455								
73-PA-569*	Bldg 459								
73-PA-754*	Bldg 475 Gate House								
73-PA-755*	Bldg 459								
73-PA-756*	Trailer 902								
73-PA-757*	Trailer 903								
73-PA-758*	Trailer 904								

* ECO complete work instruction in process for installation 5/25/15.

Persons initialing for Step completion in this procedure, complete the following:

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Testing Alarm for All Site Notification System Units

Site Notification System Units

Reference drawing: 73-J-XXX

Comments: _____

Completed by:

_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time
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Validated by:

_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time
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Testing Alarms for All Underground Mine Pager Phones

Underground Mine Pager Phones

Reference drawing: 73-J-200-W, 73-J-011-W1 & W3, 74-J-024-W1-4

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

Equip No.	Location	All Page				Mine Phones			
		SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
74-P-013	W700/S90 SCSR								
73-P-1085	AIS Collar								
74-P-012	W170/S90 SCSR								
74-P-011	W170/S1300 SCSR								
74-P-007	W100/S2520 SCSR								
73-P-1004	Waste Handling Shaft								
73-P-1117	S550 Alcove								
73-P-1009	W30/S1000								
74-P-010	W30/S1300 SCSR								
74-P-006	W30/S2520 SCSR								
74-P-003	W30/S2750 SCSR								
73-P-1003	Salt Handling Shaft								
74-P-014	E0/N780 SCSR								
74-P-015	E140/N640 SCSR								
74-P-009	E140/S1600 SCSR								
73-P-1005	E140/S1950								
74-P-016	E250/N250 SCSR								
74-P-017	E300/S20 SCSR								
74-P-008	E300/S1600 SCSR								

Persons initialing for Step completion in this procedure, complete the following:

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Testing Alarms for All Underground Mine Pager Phones

Underground Mine Pager Phones

Reference drawing: 73-J-200-W, 73-J-011-W1 & W3, 74-J-024-W1-4

Comments: _____

Completed by:

_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time
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_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time
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_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time

Validated by:

_____ Print Name	_____ Signature	_____ Initials	_____ Date	_____ Time
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Testing Alarms for All Surface Mine Pager Phones

Surface Mine Pager Phones

Reference drawing: 73-J-200-W, 73-J-011-W1 & W3, 74-J-024-W1-4

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

Equip No.	Location	All Page				Mine Phones			
		SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
73-P-1085	AIS Collar								
73-P-1119	Base of 361 Bldg								
73-P-1089	AIS Hoist Bldg								
73-P-1115	Hoist Control Room								
73-P-1095	Salt Hoist Head Frame								
73-P-1086	Mine Operations Bldg								
73-P-1091	Salt Hoist Operator Area								
73-P-1087	411 WHB 2 nd Floor WH Ops								
73-P-1088	411 WHB 5 th Floor								
73-P-1090	411 WHB 4 th Floor								
73-P-1092	411 WHB Shaft Entry Room								
73-P-1093	411 WHB Shaft Entry Room								
73-P-1094	411 WHB Shaft Entry Room								
73-P-1020	411 WHB N Wall CH Bay								
73-P-1026	411 WHB Under Stair Landing								
73-P-1121	411 WHB CH Bay North Wall								

Draft

Testing Alarms for All Surface Mine Pager Phones

Equip No.	Location	All Page				Mine Phones			
		SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
73-P-1096	451 Support Mine Ops Mgr's Off								
73-P-1097	451 Support FacOps Area Desk								
73-P-1098	451 Support Lamp Room								
73-P-1099	451 Support Lamp Room								
73-P-1100	451 Support CMR								
73-P-1114	451 Support HMI Console								
73-P-1126	451 Support CMR								
73-P-1027	452 Safety Bldg Desk Area, S Wall								
73-P-1102	452 Safety Bldg EOC								
73-P-1103	452 Safety Bldg L L Counting Room								
73-P-1112	453 Warehouse by N Entrance Door								
73-P-1110	486 Engineering Bldg North Entrance								
73-P-1123	458 Guard & Sec Bldg								
73-P-1124	458 Guard & Sec Bldg								
	489 Training Bldg Main Entrance								

Persons initialing for Step completion in this procedure, complete the following:

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Testing Alarms for All Surface Mine Pager Phones

Surface Mine Pager Phones

Reference drawing: 73-J-200-W, 73-J-011-W1 & W3, 74-J-024-W1-4

Comments: _____

Completed by:

Print Name	/	Signature	/	Initials	/	Date	/	Time
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Validated by:

Print Name	/	Signature	/	Initials	/	Date	/	Time
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Testing of All U/G Strobe Lights

U/G Strobe Lights

Reference drawings: 73-E-001-W1 and W2

ACCEPTANCE CRITERIA

Strobe Lights

- Functional and visible at line of sight

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

Equip No.	Location	CMR Step 8.14				Salt Hoist Step 8.23				Waste Hoist Step 8.31			
		SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
73-SL-715	W620/S90												
73-SL-716	W300/N215												
73-SL-767	W300/S3080												
73-SL-713	W170/N150												
73-SL-739	W170/S400												
73-SL-740	W170/S1300												
73-SL-741	W170/S2180												
73-SL-766	W170/S2830												
73-SL-776	W170/S2830												
73-SL-768	W170/S3610												
73-SL-774	W170/S3650												
73-SL-708	W30/S400												
73-SL-762	W30/S2180												
73-SL-763	W30/S2520												
73-SL-764	W30/ Rib between S3050 & S3380												
73-SL-765	W30/S3610												
73-SL-760	E0/N1400												
73-SL-705	E0/N780												
73-SL-742	E0/N460												
73-SL-736A	E0/S0/ (Salt Hoist)												
73-SL-736B	Salt Shaft												

Draft

Testing of All U/G Strobe Lights

Strobe Lights

Reference drawings: 73-E-001-W1 and W2

Equip No.	Location	CMR Step 8.14				Salt Hoist Step 8.23				Waste Hoist Step 8.31			
		SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials	SAT	UNSAT	Time	Initials
73-SL-758	E140/N1100												
73-SL-718	E140/N580												
73-SL-719	E140/N440												
73-SL-720	E140/N250												
73-SL-707	E140/S400												
73-SL-712	E140/S1000												
73-SL-714	E140/S1300												
73-SL-711	E140/S1600												
73-SL-761	E140/S2180												
73-SL-743	E140/S2520												
73-SL-751	E140/S2750												
73-SL-769	E140/S2750												
73-SL-770	E140/S3080												
73-SL-753	E140/S3080												
73-SL-771	E140/S3310												
73-SL-759	E300/N1400 Shop												
73-SL-775	E300/N1200												
73-SL-721	E300/N460 Shop												
73-SL-722	E300/N460 Shop												
73-SL-723	E300/N460 Shop												
73-SL-737	E300/S90												
73-SL-706	E300/S400												
73-SL-724	E300/S1000												
73-SL-738	E300/S2180												
73-SL-749	Panel 7, Room 1												
73-SL-748	Panel 7, Room 2												
73-SL-750	Panel 7, Room 3												
73-SL-754	Panel 7, Room 4												
73-SL-777	Panel 7, Room 6												
73-SL-778	Panel 7, Room 7												

Persons initialing for Step completion in this procedure, complete the following:

Draft

Testing of All U/G Strobe Lights

U/G Strobe Lights

Reference drawings: 73-E-001-W1 and W2

Comments: _____

Completed by:

_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
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Validated by:

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Print Name		Signature		Initials		Date		Time

Testing of All Underground Mine Pager Phones

Underground Mine Pager Phones

Reference drawings: 73-J-200-W, 73-J-011-W1 & W3, 74-J-024-W1-4

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

P	Equip No.	Primary Location	Secondary Location	SAT	UNSAT	Time	Initials
9.2.2	74-P-013	534 U/G Developmental Area	W700/S2750 SCSR				
9.2.4							
9.2.7							
9.2.2	73-P-1085	534 U/G Developmental Area	AIS Collar				
9.2.4							
9.2.7							
9.2.2	74-P-012	534 U/G Developmental Area	W170/S90 SCSR				
9.2.4							
9.2.7							
9.2.2	74-P-011	534 U/G Developmental Area	W170/S1300 SCSR				
9.2.4							
9.2.7							
9.2.2	74-P-007	534 U/G Developmental Area	W100/S2520 SCSR				
9.2.4							
9.2.7							
9.2.2	73-P-1004	534 U/G Developmental Area	Waste Handling Shaft				
9.2.4							
9.2.7							
9.2.2	74-P-1117	534 U/G Developmental Area	S550 Alcove				
9.2.4							
9.2.7							
9.2.2	73-P-1004	534 U/G Developmental Area	Waste Handling Shaft				
9.2.4							
9.2.7							
9.2.2	73-P-1009	534 U/G Developmental Area	W30/S1000				
9.2.4							
9.2.7							

Testing of All Underground Mine Pager Phones

Underground Mine Pager Phones (continued)

P	Equip No.	Primary Location	Secondary Location	SAT	UNSAT	Time	Initials
9.2.2	74-P-010	534 U/G Developmental Area	W30/S1300 SCSR				
9.2.4							
9.2.7							
9.2.2	74-P-006	534 U/G Developmental Area	W30/S2520 SCSR				
9.2.4							
9.2.7							
9.2.2	74-P-003	534 U/G Developmental Area	W30/S2750 SCSR				
9.2.4							
9.2.7							
9.2.2	73-P-1003	534 U/G Developmental Area	Salt Handling Shaft				
9.2.4							
9.2.7							
9.2.2	74-P-014	534 U/G Developmental Area	E0/N780 SCSR				
9.2.4							
9.2.7							
9.2.2	74-P-015	534 U/G Developmental Area	E140/N640 SCSR				
9.2.4							
9.2.7							
9.2.2	74-P-009	534 U/G Developmental Area	E140/S1600 SCSR				
9.2.4							
9.2.7							
9.2.2	73-P-1005	534 U/G Developmental Area	E140/S1950				
9.2.4							
9.2.7							
9.2.2	74-P-016	534 U/G Developmental Area	E250/N250 SCSR				
9.2.4							
9.2.7							
9.2.2							
9.2.4	74-P-017	534 U/G Developmental Area	E300/S20 SCSR				
9.2.7							
9.2.2							
9.2.4	74-P-008	534 U/G Developmental Area	E300/S1600 SCSR				
9.2.7							
9.2.2							
9.2.4							
9.2.7							

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Testing of All Underground Mine Pager Phones

☐ Check if All U/G Mine Pager Phones tested satisfactory.

Persons initialing for Step completion in this procedure, complete the following:

Comments: _____

Completed by:

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Print Name	Signature	Initials	Date	Time

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Print Name	Signature	Initials	Date	Time

Validated by:

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Print Name	Signature	Initials	Date	Time

Surface Pager Phones

Reference drawing: 73-J-200-W, 73-J-011-W1 & W3, 74-J-024-W1-4

ACCEPTANCE CRITERIA

Inside public address speakers and mine pager phones:

- Within 10 to 15 feet can be heard and understood.

If a criterion is NOT met or other concerns, then note problem(s) in Comments Section of data sheet and notify FSM and U/G Services at end of test.

P	Equip No.	Primary Location	Secondary Location	SAT	UNSAT	Time	Initials
9.7.2	73-P-1085	361 Air Intake Shaft	AIS Collar				
9.7.4							
9.7.7							
9.7.2	73-P-1119	361 Air Intake Shaft	Base of 361 Bldg				
9.7.4							
9.7.7							
9.7.2	73-P-1089	362 AIS Hoist House	AIS Hoist Bldg				
9.7.4							
9.7.7							
9.7.2	73-P-1115	362 AIS Hoist House	Hoist Control Room				
9.7.4							
9.7.7							
9.7.2	73-P-1095	372 Bldg	Salt Hoist Head Frame				
9.7.4							
9.7.7							
9.7.2	73-P-1086	384A Hoisting Operations	Mine Operations Bldg				
9.7.4							
9.7.7							
9.7.2	73-P-1091	384 Salt Hoist House	Salt Hoist Operator Area				
9.7.4							
9.7.7							
9.7.2	73-P-1087	411 Waste Handling Bldg	2 nd Floor WH Ops				
9.7.4							
9.7.7							
9.7.2	73-P-1088	411 Waste Handling Bldg	5 th Floor				
9.7.4							
9.7.7							

Draft

Testing of All Surface Pager Phones

Surface Pager Phones

P	Equip No.	Primary Location	Secondary Location	SAT	UNSAT	Time	Initials
9.7.2	73-P-1090	411 Waste Handling Bldg	4 th Floor				
9.7.4							
9.7.7							
9.7.2	73-P-1092	411 Waste Handling Bldg	Shaft Entry Room				
9.7.4							
9.7.7							
9.7.2	73-P-1093	411 Waste Handling Bldg	Shaft Entry Room				
9.7.4							
9.7.7							
9.7.2	73-P-1094	411 Waste Handling Bldg	Shaft Entry Room				
9.7.4							
9.7.7							
9.7.2	73-P-1020	411 Waste Handling Bldg	North Wall of CH Bay, near Column Line '6'				
9.7.4							
9.7.7							
9.7.2	73-P-1026	411 Waste Handling Bldg	Desk Area Under Stair Landing				
9.7.4							
9.7.7							
9.7.2	73-P-1121	411 Waste Handling Bldg	CH Bay North Wall				
9.7.4							
9.7.7							
9.7.2	73-P-1096	451 Support Bldg	Mine Ops Mgr's Office; Inside East Door				
9.7.4							
9.7.7							
9.7.2	73-P-1097	451 Support Bldg	Facility Ops Area Desk				
9.7.4							
9.7.7							
9.7.2	73-P-1098	451 Support Bldg	Lamp Room				
9.7.4							
9.7.7							
9.7.2	73-P-1099	451 Support Bldg	Lamp Room				
9.7.4							
9.7.7							

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Testing of All Surface Pager Phones

Surface Pager Phones

P	Equip No.	Primary Location	Secondary Location	SAT	UNSAT	Time	Initials
9.7.2	73-P-1100	451 Support Bldg	CMR				
9.7.4							
9.7.7							
9.7.2	73-P-1114	451 Support Bldg	HMI Console, N End of Computer Rm				
9.7.4							
9.7.7							
9.7.2	73-P-1126	451 Support Bldg	CMR				
9.7.4							
9.7.7							
9.7.2	73-P-1027	452 Safety Bldg	Desk Area, S Wall				
9.7.4							
9.7.7							
9.7.2	73-P-1102	452 Safety Bldg	EOC Area				
9.7.4							
9.7.7							
9.7.2	73-P-1103	452 Safety Bldg	Low Level Counting Room				
9.7.4							
9.7.7							
9.7.2	73-P-1112	453 Warehouse	Storage Room for Cal Equip by North Entrance Door				
9.7.4							
9.7.7							
9.7.2	73-P-1110	486 Engineering Bldg	North Entrance (Back Door)				
9.7.4							
9.7.7							
9.7.2	73-P-1123	458 Guard & Security Bldg	Guard & Security				
9.7.4							
9.7.7							
9.7.2	73-P-1124	458 Guard & Security Bldg	Guard & Security				
9.7.4							
9.7.7							
9.7.2	73-P-	489 Training Bldg	Main Entrance Southwest corner				
9.7.4							
9.7.7							

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Testing of All Surface Pager Phones

Surface Pager Phones

P	Equip No.	Primary Location	Secondary Location	SAT	UNSAT	Time	Initials
9.7.2							
9.7.4							
9.7.7							
9.7.2							
9.7.4							
9.7.7							

Check if All Surface Pager Phones tested satisfactory.

Comments: _____

Persons initialing for Step completion in this procedure, complete the following:

Completed by:

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Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time
_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time

Validated by:

_____	/	_____	/	_____	/	_____	/	_____
Print Name		Signature		Initials		Date		Time

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Testing of All Surface Pager Phones

Surface Pager Phones

P	Equip No.	Primary Location	Secondary Location	SAT	UNSAT	Time	Initials
5.2.2	73-P-1085	361 Air Intake Shaft	AIS Collar				
5.2.4							
5.2.7							
5.2.2	73-P-1119	361 Air Intake Shaft	Base of 361 Bldg				
5.2.4							
5.2.7							
5.2.2	73-P-1089	362 AIS Hoist House	AIS Hoist Bldg				
5.2.4							
5.2.7							
5.2.2	73-P-1115	362 AIS Hoist House	Hoist Control Room				
5.2.4							
5.2.7							
5.2.2	73-P-1095	372 Bldg	Salt Hoist Head Frame				
5.2.4							
5.2.7							
5.2.2	73-P-1086	384A Hoisting Operations	Mine Operations Bldg				
5.2.4							
5.2.7							
5.2.2	73-P-1091	384 Salt Hoist House	Salt Hoist Operator Area				
5.2.4							
5.2.7							
5.2.2	73-P-1087	411 Waste Handling Bldg	2 nd Floor WH Ops				
5.2.4							
5.2.7							
5.2.2	73-P-1088	411 Waste Handling Bldg	5 th Floor				
5.2.4							
5.2.7							
5.2.2	73-P-1090	411 Waste Handling Bldg	4 th Floor				
5.2.4							
5.2.7							
5.2.2	73-P-1092	411 Waste Handling Bldg	Shaft Entry Room				
5.2.4							
5.2.7							

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Testing of All Surface Pager Phones

Surface Pager Phones (continued)

P	Equip No.	Primary Location	Secondary Location	SAT	UNSAT	Time	Initials
5.2.2	73-P-1093	411 Waste Handling Bldg	Shaft Entry Room				
5.2.4							
5.2.7							
5.2.2	73-P-1094	411 Waste Handling Bldg	Shaft Entry Room				
5.2.4							
5.2.7							
5.2.2	73-P-1020	411 Waste Handling Bldg	North Wall of CH Bay, near Column Line '6'				
5.2.4							
5.2.7							
5.2.2	73-P-1026	411 Waste Handling Bldg	Desk Area Under Stair Landing				
5.2.4							
5.2.7							
5.2.2	73-P-1121	411 Waste Handling Bldg	CH Bay North Wall				
5.2.4							
5.2.7							
5.2.2	73-P-1096	451 Support Bldg	Mine Ops Mgr's Office; Inside East Door				
5.2.4							
5.2.7							
5.2.2	73-P-1097	451 Support Bldg	Facility Ops Area Desk				
5.2.4							
5.2.7							
5.2.2	73-P-1098	451 Support Bldg	Lamp Room				
5.2.4							
5.2.7							
5.2.2	73-P-1099	451 Support Bldg	Lamp Room				
5.2.4							
5.2.7							
5.2.2	73-P-1100	451 Support Bldg	CMR				
5.2.4							
5.2.7							
5.2.2	73-P-1114	451 Support Bldg	HMI Console, N End of Computer Rm				
5.2.4							
5.2.7							

Draft

Testing of All Surface Pager Phones

Surface Pager Phones (continued)

P	Equip No.	Primary Location	Secondary Location	SAT	UNSAT	Time	Initials
5.2.2	73-P-1126	451 Support Bldg	CMR				
5.2.4							
5.2.7							
5.2.2	73-P-1027	452 Safety Bldg	Desk Area, S Wall				
5.2.4							
5.2.7							
5.2.2	73-P-1102	452 Safety Bldg	EOC Area				
5.2.4							
5.2.7							
5.2.2	73-P-1103	452 Safety Bldg	Low Level Counting Room				
5.2.4							
5.2.7							
5.2.2	73-P-1112	453 Warehouse	Storage Room for Cal Equip by North Entrance Door				
5.2.4							
5.2.7							
5.2.2	73-P-1110	486 Engineering Bldg	North Entrance (Back Door)				
5.2.4							
5.2.7							
5.2.2	73-P-1123	458 Guard & Security Bldg	Guard & Security				
5.2.4							
5.2.7							
5.2.2	73-P-1124	458 Guard & Security Bldg	Guard & Security				
5.2.4							
5.2.7							
5.2.2	73-P-	489 Training Bldg	Main Entrance Southwest corner				
5.2.4							
5.2.7							

☐ Check if All Surface Pager Phones tested satisfactory.

Comments: _____

Draft

Testing of All Surface Pager Phones

Surface Pager Phones (continued)

Persons initialing for Step completion in this procedure, complete the following:

Completed by:

Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time
Print Name	/	Signature	/	Initials	/	Date	/	Time

Validated by:

Print Name	/	Signature	/	Initials	/	Date	/	Time
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ATTACHMENT 13
LIST OF SURFACE LIQUID FUELED VEHICLE INSPECTION
PROCEDURES

1 PAGE

ATTACHMENT 13
LIST OF SURFACE LIQUID FUELED VEHICLE INSPECTION PROCEDURES

Tractors

PM075073

Surface Forklifts

PM411030

Man Lifts

PM075055
WP 05-WH1217

Mobile Cranes

PM075017

Front End Loader

PM075070

Trailer Jockeys

PM041145
WP 05-WH1405¹

Facility Transfer Vehicles

PM041014
PM411032
WP 05-WH1204

Yard Transfer Vehicles

PM041014
PM411032
WP 05-WH1205

TRUPACT III Handler

PM411034
PM074051
WP 05-WH1201

Backup Power Supply Diesel Generators

WP 04-ED1301

Rescue Truck

PM075036
WP12-FP0030
WP12 -FP0033

Fire Truck

PM075043
PM075037
WP12-FP0033

Ambulance

PM075013
WP12-FP0030

Sampling Truck

PM075048

¹ Bolded Procedures are listed in Permit Attachment E, Table E-1 or Table E-1a

ATTACHMENT 14
COMBUSTIBLE LOADING TRAINING NARRATIVE

6 PAGES

ATTACHMENT 14

Violation 1, Count 9 of the Administrative compliance Order HWB-15-21 (CO) dealt with unnecessary combustible materials stored throughout the underground. As part of the settlement with regard to this topic, the Respondents are to describe the training related to managing combustible loading in the underground.

This training was developed after the February 2014 events and focuses on the following objectives:

- Be familiar with the new Only Essential Combustibles (OEC) approach to combustible management being applied to the WIPP underground.
- Understand the requirements associated with the new OEC approach.
- Undertake the combustible management responsibilities that each NWP employee and subcontractor is accountable for.
- Read and be familiar with the attached Policy to fully understand what is expected and how it is to be implemented.

The Respondents have attached the course developed by the Training Department.

Number of classroom sessions offered is **26**.

Number of personnel trained between 9/1/14 and 9/1/15 was 403.

Attached are the following documents:

INF 144 New Combustible Control Policy for WIPP Underground (MP 6.9) Rev. 0

INF 144

New Combustible Control Policy for WIPP Underground (MP 6.9)

Rev. 0

PURPOSE OF THIS TRAINING

Upon completion of this training, participants will be familiar with the new combustible control policy for the WIPP Underground established in Policy MP 6.9.

This informal training will focus on the following objectives. There is no post-training evaluation.

1. Be familiar with the new Only Essential Combustibles (OEC) approach to combustible management being applied to the WIPP underground.
2. Understand the requirements associated with the new OEC approach.
3. Undertake the combustible management responsibilities that each NWP employee and subcontractor is accountable for.
4. Read the attached Policy to fully understand what is expected and how it is to be implemented.

Upon completion, return completed Read & Sign forms or Training Attendance Sheets documenting delivery of INF 144 to NWP Technical Training.

1. Application of an Only Essential Combustibles (OEC) approach to combustible management in the WIPP Underground

Objective 1-1 – State the new approach to combustible management for the WIPP underground.

NWP will minimize the likelihood and consequences of a fire occurring in the WIPP underground by applying an **Only Essential Combustibles** (OEC) approach to combustible management. The policy is based on the principle that any amount of combustibles, no matter how small, can increase the chance of a fire. Combustibles cannot be completely eliminated, but Only Essential Combustibles are acceptable in the underground.

2. New Policy requirements

Objective 2-1 – State the requirements associated with the new Policy.

The OEC approach consists of the following requirements:

- Prevent unnecessary combustible materials from being taken underground.
- Properly use and store flammable materials, liquids, and combustibles.
- Prompt removal and disposal of accumulations of combustible materials (good housekeeping).
- Proactively identify hazards and mitigate them.
- Communicate this policy to those who work at WIPP to ensure actions are conducted in a manner consistent with this Policy.

3. Combustible management responsibilities

Objective 3-1 – State the responsibilities all employees have in implementing proper management of combustible materials.

All NWP employees and subcontractor personnel are responsible and accountable for:

- Maintaining a questioning attitude that challenges the transport of any non-essential combustible material into the underground.
- Their own personal safety and safe work practices, which include actively applying the OEC approach to combustible management in the WIPP underground.

4. References:

- MP 6.9, *WIPP Underground Combustible Controls* (attached as reference)

5. Questions/Feedback

After reading the attached Policy, please contact your supervisor or NWP Technical Training with any questions or feedback.

NUCLEAR WASTE PARTNERSHIP MANAGEMENT POLICY TITLE: WIPP UNDERGROUND COMBUSTIBLE CONTROLS	Number/Rev. MP 6.9, Rev 0 Page 1 of 2
COGNIZANT SENIOR MANAGER: <div style="display: flex; justify-content: space-between;"> <div> <u>Approval on File</u> B. E. Stubbs Engineering </div> <div> <u>03/27/15</u> Date </div> </div>	APPROVED BY: <div style="display: flex; justify-content: space-between;"> <div> <u>Approval on File</u> R. L. McQuinn NWP President & Project Manager </div> <div> <u>03/29/15</u> Date </div> </div>
<p>1.0 POLICY</p> <p>It is the policy of Nuclear Waste Partnership, LLC (NWP) to consider the protection of workers, the public, and the environment to be the highest priority of all the combined activities at the Waste Isolation Pilot Plant (WIPP) project. We are committed to achieving and maintaining high standards of worker protection and to providing a safe and healthful workplace for our employees and communities while disposing of transuranic waste in an environmentally sound and cost-effective manner.</p> <p>Mine fires pose a serious danger to the safety of underground personnel and to their livelihood. Underground mine fires are uniquely hazardous situations because of the confined environment with remote exits. Compliance with federal and state regulations, the WIPP Hazardous Waste Permit, Fire Protection Program, and NWP safety policies, procedures, and programs for underground work activities ensure the safety of personnel. Due to the unique hazards associated with an underground fire, NWP has developed this Underground Combustible Controls policy.</p> <p>NWP will minimize the likelihood and consequences of a fire occurring in the WIPP underground by applying an Only Essential Combustibles (OEC) approach to combustible management.</p> <p>This policy is based on the principle that any amount of combustibles, no matter how small, can increase the chance of a fire. Combustibles cannot be completely eliminated, but Only Essential Combustibles are acceptable in the underground.</p> <p>2.0 REQUIREMENTS</p> <p>The OEC approach consists of the following elements:</p> <ul style="list-style-type: none"> • Prevent unnecessary combustible materials from being taken below ground • Properly use and store flammable materials, liquids, and combustibles • Prompt removal and disposal of accumulations of combustible materials (good housekeeping) • Proactively identify hazards and mitigate them 	

NUCLEAR WASTE PARTNERSHIP MANAGEMENT POLICY	Number/Rev. Page	MP 6.9, Rev 0 2 of 2
TITLE: WIPP UNDERGROUND COMBUSTIBLE CONTROLS		

- Communicate this policy to those who work at WIPP to ensure actions are conducted in a manner consistent with this policy.

3.0 RESPONSIBILITIES

The primary means of enforcement of this policy will be by a questioning attitude that challenges the transport of any non-essential combustible material into the underground. Routine inspections will also be used to enforce this policy.

So that expectations are clear, this policy will be briefed to all site employees. This policy and the OEC approach will flow down through the fire protection program and be implemented by the combustible loading procedure.

NWP is committed to fire prevention. Controlling combustibles is paramount to fire prevention. All NWP employees and subcontractor personnel are responsible and accountable for their personal safety and safe work practices which include actively applying the OEC approach to combustible management in the WIPP underground.

ATTACHMENT 15
WP 12-FP3003 MATERIAL AND COMPRESSED GAS CYLINDER
CHECKS

18 PAGES

WP 12-FP3003

Revision 17

Combustible Material and Compressed Gas Cylinder Checks

Technical Procedure

EFFECTIVE DATE: 10/07/15

David Stuhan
APPROVED FOR USE

WORKING COPY VERIFICATION
Revision Checked:
Page Count:
Name:
Signature:
Date and Time:

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CHANGE HISTORY SUMMARY

REVISION NUMBER	DATE ISSUED	DESCRIPTION OF CHANGES
11	06/17/11	<ul style="list-style-type: none"> Added ROOM 108 to list in Introduction, and list of Process Areas in attachment 1. Step 5.1 - added ROOM 108 in first bullet as a prohibited location for liquid-fueled vehicles/equipment during waste handling and waste storage. Modified wording in second, fifth, & sixth bullets to match update to LCOs. Step 6.2 - new bullet: One approved safety can containing \leq one gallon of denatured alcohol may be in ROOM 108.
12	04/26/12	<ul style="list-style-type: none"> Changed reference from PM000028 to 12-FP0028 and added reference to WSMS-WIPP-023. Added step 2.6 for the Fire Protection Engineer to perform periodic inspections to verify program compliance. Added Note to step 6.1. Reworded a daily inspection requirement on staging or storing of fuel packages and added U/G specific requirements to step 6.1. Added large spools of wire to Example in attachment 1.
13	04/09/13	<ul style="list-style-type: none"> Editorial revision in accordance with MD 1.1.
14	02/09/15	<p>Complete rewrite. Major changes include:</p> <ul style="list-style-type: none"> Changed responsibility for completing and retaining combustible check sheets to Fire/EMS. Removed steps covered in other programs/processes. Added check sheets as new Electronic Attachments.
15	06/08/15	<ul style="list-style-type: none"> Updated Fire/EMS to Fire Department. Clarified responsibilities of the Fire Marshal and removed Fire Chief. Added Combustible Loading Zone information. Combined information from WP 04-AD3028, <i>Storage of Compressed Gas Cylinders Weekly Inspections</i>.
16	09/28/15	<ul style="list-style-type: none"> Clarified control location in the Exhaust Filter Building to include associated ductwork. Added ESS Control ESS-2014-10.

REVISION NUMBER	DATE ISSUED	DESCRIPTION OF CHANGES
17	10/07/15	<ul style="list-style-type: none">• Added notes to document when exclusions to perform inspections are allowed.• Added clarification for unsatisfactory determinations, reporting, and tracking.• Clarified Roles and Responsibilities.• Added new Attachment 3, <i>Exhaust Filter Building Combustible Loading Control Zone Map</i>.• Removed Fire Protection Engineer responsibilities for daily Round Sheet reviews.• Added definitions for Shift, Daily, Satisfactory, and Unsatisfactory.• Reorganized the referenced Round Sheets to provide clarity and procedure alignment.

INTRODUCTION

This document provides guidance and instructions for performing inspections to ensure control of combustibles, and compressed gas cylinders in the following locations at the Waste Isolation Pilot Plant (WIPP):

- Waste Handling Building (411) including the TRUPACT Maintenance Facility (412)
- Exhaust Filter Building (413) and associated ductwork
- Underground

The fire control measures in place to decrease the possibility and consequences of fire and to ensure protection of workers and the public are described in WP 12-FP.01, *WIPP Fire Protection Program*. This program implements requirements in compliance with DOE/WIPP-07-3372, *WIPP Documented Safety Analysis (DSA)*, and DOE/WIPP-07-3373, *WIPP Technical Safety Requirements (TSRs)*. The DSA and TSRs require implementation of a control program for ensuring that combustible materials within the waste handling activity areas will not have sufficient energy for a fire to propagate.

The Technical Safety Requirements (TSRs) contain LCOs which provide specific preventive or mitigative limits and required actions for identified accident scenarios. Failure to comply with LCOs may constitute a violation and must be immediately reported to the Facility Shift manager (FSM). The step affected by the LCO is followed by the LCO, ESS, or SR number in bold brackets. (e.g., [LCO 3.X.X] and [ESS-2014-01] [ESS-2014-09] [ESS-2014-10])

The combustible loading control inspections required by this procedure shall be consistent with the requirements of DOE/WIPP-07-3372, DOE/WIPP-07-3373, WP 12-FP.01, and WIPP-023, *Fire Hazard Analysis for the Waste Isolation Pilot Plant, Carlsbad, NM*. Combustible materials in inventory for use shall be controlled as fuel packages to limit propagation by separation distances as described in attachment 1. Combustible materials SHALL be minimized in the underground. Necessary combustible materials U/G will be stored in the designated storage area in E-140 between N-1100 and N-1300 according to 12-FP.01.

Performance of this procedure generates the following record(s), as applicable. Any records generated are handled in accordance with departmental Records Inventory and Disposition Schedules.

- EA12FP3003-1-0, *EFB/WHB Combustible Material/Gas Cylinder Round Sheet*
- EA12FP3003-2-0, *Underground Combustible Material/Gas Cylinder Round Sheet*

REFERENCES			
DOCUMENT NUMBER AND TITLE	BASELINE DOCUMENT	REFERENCED DOCUMENT	KEY STEP
10 CFR 830.204, <i>Documented Safety Analysis</i>	✓		
10 CFR 830.205, <i>Technical Safety Requirements</i>	✓		
DOE Order 420.1C, <i>Facility Safety</i>	✓		
DOE Order 440.1B, <i>Worker Protection Program for DOE (including the National Nuclear Security Administration) Federal Employees</i>	✓		
DOE-STD-1066-2012, <i>Fire Protection</i>	✓		
DOE/WIPP-07-3372, <i>Waste Isolation Pilot Plant Documented Safety Analysis</i>	✓	✓	(\$)
DOE/WIPP-07-3373, <i>Waste Isolation Pilot Plant Technical Safety Requirements</i>	✓	✓	(\$)
Department of Transportation Exemption DOT-E-7607		✓	
NFPA 30, <i>Flammable and Combustible Liquids Code</i>	✓		
NFPA 55, <i>Standard for the Storage, Use, and Handling of Compressed Gases and Cryogenic Fluids in Portable and Stationary Containers, Cylinders, and Tanks</i>	✓		
WIPP-023, <i>Fire Hazard Analysis for the Waste Isolation Pilot Plant, Carlsbad, NM (contact Nuclear Safety for current location)</i>		✓	
WP 12-FP.01, <i>WIPP Fire Protection Program</i>	✓	✓	
WP 12-FP.07, <i>WIPP Underground Combustible Control Program</i>	✓		
WP 12-FP0028, <i>Fire/Safety Inspection and Testing</i>	✓		
WP 12-IS.01-11, <i>Industrial Safety Program – Compressed Gases</i>	✓		
WP MP 6.9, <i>WIPP Underground Combustible Controls</i>	✓		
EA12FP3003-1-0, <i>EFB/WHB Combustible Material/Gas Cylinder Round Sheet</i>		✓	
EA12FP3003-2-0, <i>Underground Combustible Material/Gas Cylinder Round Sheet</i>		✓	
PROD-439, <i>General Hazard Analysis</i>	✓		

PERFORMANCE**1.0 FIRE DEPARTMENT/FIREFIGHTERS (FF)****1.1 PERFORM** shift/daily combustible material/gas cylinder inspections.

- 1.1.1 Each Monday, **PRINT** a copy of EA12FP3003-1-0 and EA12FP3003-2-0 for use that week (Monday through Sunday).

NOTE

During filter change out evolutions in the Exhaust Filter Building the combustible materials shift check is exempted on EA12FP3003-1-0. The combustible material controls are in accordance with the Model Work Order (M0000856). Contact the FSM and document on the Round Sheet. If unable to access the underground to perform these rounds due to facility conditions or operational situations contact the FSM and document exclusion. If any inspection cannot be completed, immediately contact the FSM and the Fire Department Deputy Chief of Operations (or Designee).

- 1.1.2 **(\$ COMPLETE** shift and daily inspections for surface facilities using EA12FP3003-1-0. **[ESS-2014-01] [ESS-2014-09] [ESS-2014-10]**

- 1.1.3 **(\$ COMPLETE** the daily inspections for the Underground facilities using EA12FP3003-2-0. **[ESS-2014-09] [ESS-2014-10]**

- 1.1.4 **CONTACT** the FSM and **PROVIDE** the time that the Exhaust Filter Building 413 combustible materials shift check was completed in accordance with EA12FP3003-1-0.
-

NOTE

If unsure whether the size/amount of combustibles is unsatisfactory, Fire Department personnel should document the potential unsatisfactory condition on the Round Sheet and follow up with the FD Supervisor and the FSM upon completion of the shift/daily checks.

- 1.1.5 **REPORT** any unsatisfactory conditions to the FSM and on-duty Fire Department (FD) Shift Supervisor immediately upon completion of the shift/daily check.

- 1.1.6 **ENTER** actions taken to correct the unsatisfactory conditions in EA12FP3003-1-0 and EA12FP3003-2-0 (e.g., Action Request numbers, notifications).
 - 1.2 **(\$)** **COMPLETE** the surveillance data sheet for LCO 3.3.2, Surveillance Requirement 4.3.2.1 each shift. **(EA04AD3001-SR19) [LCO 3.3.2]**
 - 1.2.1 **FORWARD** the completed surveillance data sheet to the Central Monitoring Room Operator (CMRO) and request CMRO log entry.
 - 1.3 **DIRECT** questions regarding combustible loading issues to the FD Shift Supervisor and FSM, (Fire Marshal as needed) upon completion of the daily inspections.
 - 1.4 After the shift and daily inspections are complete, **PROVIDE** the Round Sheet to the FD Shift Supervisor (or designee) for review.
 - 1.5 Each Monday, **PROVIDE** the previous weeks completed Round Sheets to the Fire Marshal or designee, for review.
- 2.0 FIRE DEPARTMENT CAPTAIN/SUPERVISOR
- 2.1 **REVIEW** Round Sheets after each shift/daily inspections have been completed **AND INITIAL** the Round Sheets.
 - 2.2 **ELEVATE** any UNSATISFACTORY determination or inability to complete the inspections to the FSM and Deputy Chief of Operations (or designee) immediately.
 - 2.3 **CONTACT** the Fire Marshal and Fire Protection Engineering as needed to support evaluation of potential deficiencies and determination of corrective actions.
 - 2.4 **TRACK** progress for prompt correction of any deficiencies found in the performance of this procedure.
- 3.0 FIRE MARSHAL/DESIGNEE
- 3.1 **ENSURE** that all shift, daily, and weekly inspections for combustible loading and pressurized gas cylinders in the WHB, Exhaust Filter Building, and the underground are performed according to this procedure.
 - 3.1.1 **REVIEW AND SIGN OFF** on completed EA12FP3003-1-0 and EA12FP3003-2-0 Round Sheets at the end of each week.
 - 3.1.2 **RETAIN** weekly completed sheets as Fire Department records.

- 3.2 **ENSURE** any deficiencies found in the performance of this procedure are tracked and corrected promptly.

4.0 MAINTENANCE MANAGERS

- 4.1 **ENSURE** any deficiencies found in the performance of this procedure are corrected promptly.
- 4.2 **ENSURE** proper storage of combustible materials during work activities and at the end of each shift.

5.0 OPERATIONS

- 5.1 **ENSURE** any deficiencies found in the performance of this procedure are corrected promptly.
- 5.2 **REPORT** potential combustible loading noncompliance issues to the Facility Shift Manager and Fire Protection Engineering.
- 5.3 **DIRECT** questions regarding combustible loading issues to Fire Protection Engineering.
- 5.4 **REPORT** completion of corrective actions to FD Supervision or Fire Marshal, or designee, for closure tracking.

Attachment 1 –Definitions

Authorized: At WIPP this can include the FPE and/or the U.S. Department of Energy (DOE) representative responsible for the fire safety program.

Combustible Liquid: Liquids having a flash point at or above 100°F (37.8°C). Combustible liquids are classified as Class II, IIIA, and IIIB.

Combustible Loading Control Zone: An area set aside in the underground mine immediately around the air intake shaft and starting at E-0 from N-460 to W-30 at S-700; E-140, Door 310 to S-700 where transient combustibles, liquid fueled vehicles, or other combustible materials cannot be parked, left unattended, or stored for any length of time. See attachment 2 for a map of the Combustible Loading Control Zone.

Combustible Material: A material that, in the form in which it is used and under conditions anticipated, will ignite, burn, support combustion, or release flammable vapors when subjected to fire or heat. Wood, paper, rubber, and plastics are examples of combustible materials.

Compressed Gas: Any material or mixture having, when in its container, an absolute pressure exceeding 40 pounds per square inch (psi), absolute (psia) at 70°F or, regardless of the pressure at 70°F, having an absolute pressure exceeding 104 psia at 130°F.

Compressed Gas Cylinders: Any portable pressure vessel of 1,000 lb water capacity or less designed to contain a gas or liquid that is authorized for use at gauge pressures over 40 psi at 70°F by the U. S. Department of Transportation (DOT) or Transport Canada (T.C.). Aerosol containers, pressurized fire suppression agent containers, and cylinders covered by DOT Exemption (DOT-E-7607) shall be excluded from compressed gas cylinder requirements.

Controlled Storage Area: Areas where exposed, (e.g., noncontainerized), Class A combustible material (wood, paper, cardboard, cloth) has been designated for temporary staging. These areas are not used to store oils, paints, solvents, or other combustible or flammable liquids, except in approved cabinets. Areas shall be indicated with barriers and appropriate signage.

Daily: A 24 hour frequency; done once every 24 hours, occurring every day. DOE/WIPP 07-3373 allows a 24 hour frequency + 25% (Grace Period) extension To 30 hours when requested through the FSM.

Designated Storage Area: Areas for the storage of flammable/combustible materials such as storage cabinets and areas for the Storage of flammable or non-flammable compressed gas cylinders which have been approved by the FPE and IS/IH. Approved areas shall be designated with appropriate signage.

Attachment 1 –Definitions

Flammable Liquid: Liquids having a flash point below 100°F (37.8°C), and a vapor pressure not exceeding 40 psia at 100°F (37.8°C), are known as a Class I liquids.

Flammable Storage Cabinet: A storage cabinet that is approved and listed for its intended use.

Fuel Packages: A continuous amount of combustible material which will burn until the fuel is consumed. A fuel package with 5 MW or less of maximum energy release rate kept at a distance of 10 feet will have a heat flux of approximately 10 kW/m². A heat flux of 10 kW/m² is accepted as a critical heat flux that will not ignite exposed combustible material.

EXAMPLES

5 MW	Fuel packages requiring a 10-foot separation
14	Empty stacked wooden pallets
5	Wood - 4 feet x 4 feet x 7 feet wooden crates
2 ft ³	Plastic material (non-fire retardant)
134 ft ²	Trash bags
2	6-foot spools of wire

A fuel package of 3 MW or less of maximum energy release rate kept a distance of 7 feet will have a heat flux of approximately 10 kW/m². A heat flux of 10 kW/m² is accepted as a critical heat flux that will not ignite exposed combustible material.

EXAMPLES

3 MW	Fuel packages requiring a 7-foot separation
6	Empty stacked wooden pallets
3	Wood - 4 feet x 4 feet x 7 feet wooden crates
1 ft ³	Plastic material (non-fire retardant)
100 ft ²	Trash bags
1	4-foot diameter wooden spools/reels of wire
2	220-/250-gallon high density polyethylene bulk containers
3	Tractor trailer sized tires
1	Large mining tires
1	4-foot stacked tires (equivalent to automobile tires)
2	Plastic pallets

Attachment 1 –Definitions

Incidental Use: The routine use of material required for essential activities such as maintenance, personnel protection, and operations. The allowable quantity of material for incidental usage would be limited to the amount needed for one work shift. Any quantity exceeding the amount needed for one work shift shall be stored in accordance with this procedure.

Listed: Equipment, materials, or services included in a list published by an organization acceptable to the authority having jurisdiction and concerned with evaluation of products or services that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services and whose listing states either that the equipment, material, or service meets identified standards or has been tested and found suitable for a specified purpose. This is typically Underwriters Laboratory (UL) and/or Factory Mutual (FM).

Safety Can: A container of not over five gallons capacity that is designed to safely relieve internal pressure when exposed to heat and has a spring-closing lid and spout cover.

Satisfactory: Meeting all criteria or fulfilling expectations or needs; acceptable, sufficient, passable.

Shift: A 12 hour frequency; done once every 12 hours; occurring each shift, DOE/WIPP 07-3373 allows a 12 hour frequency +25% (Grace Period) extension to 15 hours when requested through the FSM.

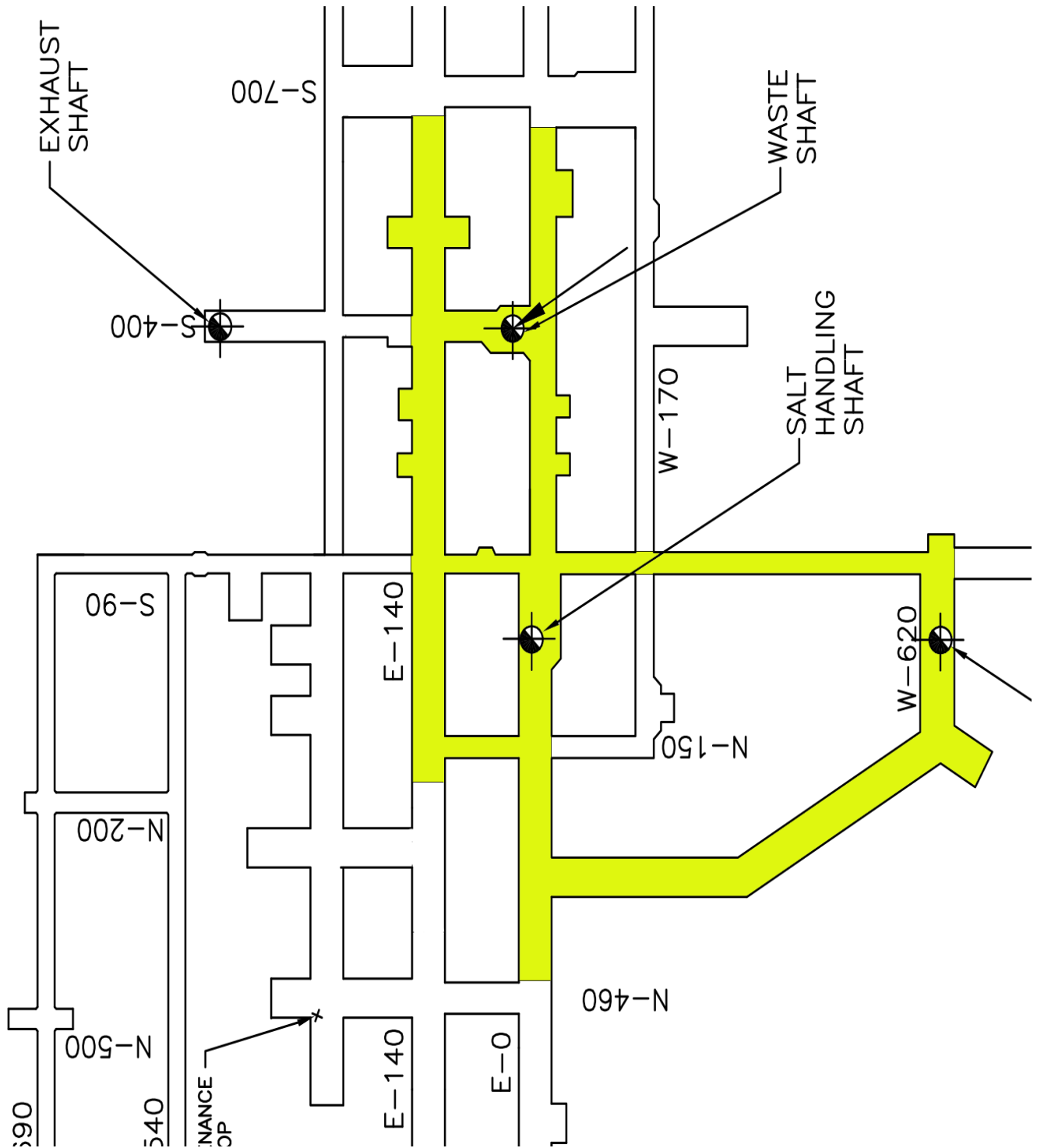
Staged Materials: Transient combustible materials temporarily positioned for support of a specific work activity that is underway or about to occur are considered staged. The type of materials and quantities allowed in an area are based on general housekeeping controls for the facility.

Stored Materials: Combustible materials or supplies that support routine or long-term activities or that are awaiting disposition. Stored materials are located in designated storage areas within the facility. These areas have established quantities and types of materials allowed in the storage area based on FPE recommendations.

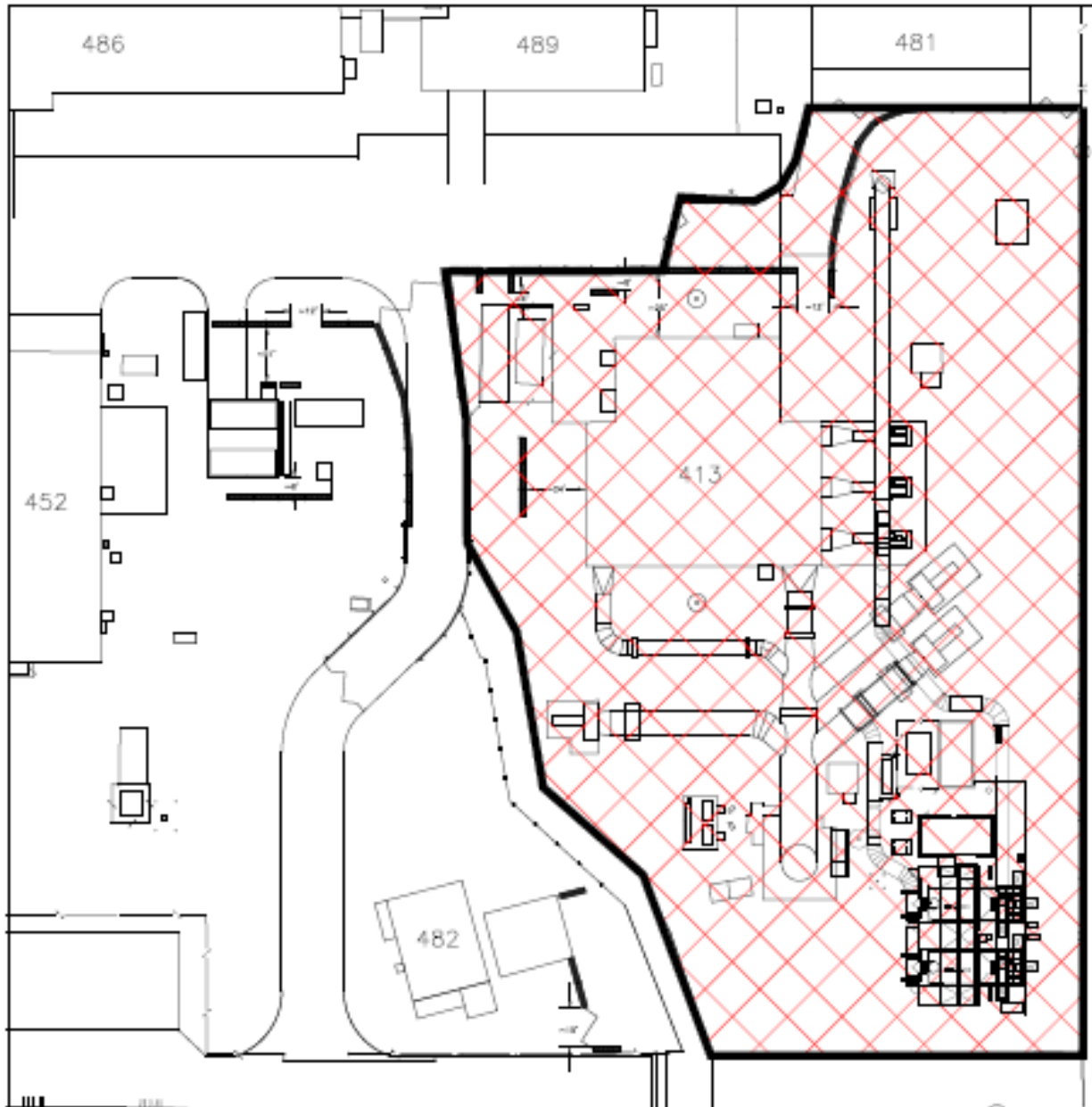
Storage: Material is considered to be in storage if it is not actively being used to support work. All storage of materials in areas covered by the scope of this procedure shall meet the requirements contained herein.

Unsatisfactory: Not satisfactory; not meeting expectations or criteria; inadequate, unacceptable.

Attachment 2 – Underground Combustible Loading Control Zone Map



Attachment 3 – Exhaust Filter Building Combustible Loading Control Zone Map



EFB/WHB Combustible Material/Gas Cylinder Round Sheet

EXHAUST FILTER BUILDING 413 and WASTE HANDLING BUILDING 412		DATE															
		DAY		MON		TUES		WED		THUR		FRI		SAT		SUN	
		SHIFT		1	2	1	2	1	2	1	2	1	2	1	2	1	2
		FD Firefighter															
		FD Shift Supervision															
REF #	EFB COMBUSTIBLE MATERIAL/GAS CYLINDER INSPECTION CRITERIA																
1	(\$) No UNAUTHORIZED combustible materials stored or staged within 25 feet of the EFB and associated duct work. (EACH SHIFT) [ESS-2014-01] [ESS-2014-09][ESS-2014-10]																
2	(\$) No UNAUTHORIZED combustible materials accumulating in the EFB. (EACH SHIFT) [ESS-2014-01] [ESS-2014-09][ESS-2014-10]																
3	1 Time of combustible materials inspection of Exhaust Filter Building. (PROVIDE TIME TO FSM.) TIMES:																
4	No combustible materials stored in egress paths.																
5	There are no UNAUTHORIZED fuel packages more than 5MW each.																
6	5MW or less fuel packages have a minimum of 10 feet separation from other fuel packages, and/or building equipment. Fire blankets were used when 10 feet separation could not be achieved.																
WHB/412 COMBUSTIBLE MATERIAL/GAS CYLINDER INSPECTION CRITERIA																	
7	(\$) 2 No liquid fueled vehicles in the CH Bay or Room 108. (EACH SHIFT) [LCO 3.3.2] [SR 4.3.2.1] (EA04AD3001-SR19)																
8	(\$) No UNAUTHORIZED combustible materials are accumulating in the WHB. [ESS-2014-09] [PAC 5.1.2.2] (DAILY) (Criteria below impacts)																
8a	No combustible materials are stored or staged on the 2nd floor of the WHB within 10 feet of the north wall.																
8b	At least 18 inches vertical clearance is maintained between the top of storage and sprinkler head deflectors. Fire blankets may NOT be used to mitigate sprinkler clearance.																
8c	Combustible waste is collected in metal containers and provided with lids (except for office waste).																
8d	Designated storage areas are identified with appropriate signage.																
8e	Flammable and combustible liquids are stored in flammable liquid storage cabinets when not in use.																
8f	No solvents or flammable liquids are in the Waste Hoist Tower.																
8g	Used oil/hydraulic fluid was removed from the Waste Hoist Tower after hoist maintenance.																
8h	No combustible materials are stored in personnel access corridors, electrical or mechanical rooms, on or under stairways, or in other egress paths.																
8i	No more than one approved safety can containing ≤ 1 gallon of denatured alcohol is in the RH Bay.																
8j	No more than one approved safety can containing ≤ 1 gallon of denatured alcohol is at each TRUDOCK position in the CH Bay.																
8k	No more than one approved safety can containing ≤ 1 gallon of denatured alcohol is in Room 108.																
8l	There are no UNAUTHORIZED fuel packages more than 5MW each.																
8m	5MW or less fuel packages have a minimum of 10 feet separation from other fuel packages, WASTE containers, and/or building equipment. Fire blankets may be used if 10 feet separation cannot be achieved.																
8n	Each pallet of fiberboard or Polyethylene slip sheets are 7.4 MW fuel packages and there is a separation of 15 feet from other combustibles, radiological material, and stored CH WASTE.																
8o	No more than 3 pallets of slip sheets are stored in the CH BAY. Pallets of slip sheets are NOT stacked.																
9	Designated storage areas for compressed gas cylinders are ≥ 25 feet from waste. (WEEKLY)																
10	Oxygen cylinders are stored ≥ 20 feet from flammable liquid gas cylinders. (WEEKLY)																
11	Compressed gas cylinders in storage are secured. (WEEKLY)																
Enter the time the inspection was completed for the EFB area per ESS controls. Provide the time complete to the FSM.																	
2 Complete the surveillance data sheet for LCO 3.3.2, Surveillance Requirement 4.3.2.1. Forward the completed surveillance data sheet to the FSM.																	
Circle S for Satisfactory conditions or U for Unsatisfactory conditions. Provide details on ALL unsatisfactory conditions. Report any Unsatisfactory conditions to the FSM and the FD Supervisor immediately upon completion of sheet.																	
Combustible material is any material that will readily burn such as wood, paper, rubber, plastics, and flammable liquids. See WP 12-FP3003, attachment 1, for fuel package quantity examples.																	
Personnel Initialing this Round Sheet shall complete the following																	
NAME (PRINT)		IN	NAME (PRINT)		IN	NAME (PRINT)		IN	NAME (PRINT)		IN	NAME (PRINT)		IN			

[illegible]

Fire Marshal Review: _____ Date: _____

Underground Combustible Material/Gas Cylinder Round Sheet

UNDERGROUND			DATE								
			DAY	MON	TUES	WED	THUR	FRI	SAT	SUN	
			FD Firefighter								
			FD Supervisor								
U/G COMBUSTIBLE MATERIAL INSPECTION CRITERIA											
1	(\$) No combustible materials are accumulating in the underground spaces. Combustible materials underground are minimized (only essential combustibles). [ESS-2014-09] [PAC 5.1.2.2] (DAILY)		S U	S U	S U	S U	S U	S U	S U	S U	
1a	Necessary/authorized combustible materials U/G are stored in the designated storage area in E-140 between N 1100 and N-1300 according to 12-FP.01.		S U	S U	S U	S U	S U	S U	S U	S U	
1b	The tire storage area, oil storage area, and refueling station are free of other unauthorized combustibles.		S U	S U	S U	S U	S U	S U	S U	S U	
1c	Tires not mounted on rims are stored in a metal cabinet.		S U	S U	S U	S U	S U	S U	S U	S U	
1d	Combustible waste is collected in metal containers and provided with lids.		S U	S U	S U	S U	S U	S U	S U	S U	
1e	Dumpsters are not full, such that lids are closed.		S U	S U	S U	S U	S U	S U	S U	S U	
1f	Flammable and combustible liquids are stored in flammable liquid storage cabinets when not in use.		S U	S U	S U	S U	S U	S U	S U	S U	
1g	There are no UNAUTHORIZED fuel packages more than 3 MW each stored or staged.		S U	S U	S U	S U	S U	S U	S U	S U	
1h	Authorized fuel packages 3 MW or less stored or staged have a minimum of 10 feet separation from other fuel packages, WASTE containers, and/or equipment. Fire blankets may be used if 10 feet separation cannot be achieved.		S U	S U	S U	S U	S U	S U	S U	S U	
U/G COMPRESSED GAS CYLINDER INSPECTION CRITERIA											
2	Designated storage areas for compressed gas cylinders are ≥ 25 feet from waste. (WEEKLY)									S U	
3	Oxygen cylinders are stored ≥ 20 feet from flammable liquid or gas cylinders. (WEEKLY)									S U	
4	Compressed gas cylinders in storage are secured. (WEEKLY)									S U	
U/G COMBUSTIBLE LOADING CONTROL ZONE (The zones are the yellow designated areas in E-0 from N-460 to W-30 at S-700; E-140, Door 310 to S-700. See WP 12-FP3003, attachment 2)											
5	No combustible materials or liquid fueled vehicles parked in the zone. (DAILY)		S U	S U	S U	S U	S U	S U	S U	S U	
6	No unattended transient combustible materials are located in the zone. (DAILY)		S U	S U	S U	S U	S U	S U	S U	S U	
Circle S for Satisfactory conditions or U for Unsatisfactory conditions. Provide details on ALL unsatisfactory conditions on back of sheet. Report any Unsatisfactory conditions to the FSM and Supervisor immediately upon completion of sheet. Combustible material is any material that will readily burn such as wood, paper, rubber, plastics, and flammable liquids. See WP 12-FP3003, attachment 1, for fuel package quantity examples.											
NAME (PRINT)		IN	NAME (PRINT)		IN	NAME (PRINT)		IN	NAME (PRINT)		IN

Underground Combustible Material/Gas Cylinder Round Sheet

[illegible]

Fire Marshal Review: _____

Date: _____

ATTACHMENT 16
MWO00534 UNDERGROUND ENTRY/EXIT

14 PAGES

MWO00534

Revision 8

Underground Entry/Exit

CONTINUOUS USE

[534]

APPROVED FOR USE

CHANGE HISTORY SUMMARY

Revision Number	Date Issued	Description of Changes
0	08/28/2014	New Procedure for Entry into the U/G.
1	09/04/2014	Added notes to Clarify multiple tasks to be worked concurrently. Added note to be able to perform Section 3.1 in any order.
2	11/25/2014	Removed 313/707 dP monitoring. Bulkhead 308/WHT added for monitoring. Increased personnel U/G to 74. Updated CMRO Attachment 2 with actions if 308 or WHT are in alarm or inoperable.
3	12/19/14	Bulleted steps in Section 3.1 Moved Station A probe and Monitoring of Attachment 2 into Section 3.1
4	02/14/15	Moved ESS-09 exceptions to Section 2.2 Removed requirement for Station A frisk Updated Verbiage for fire scene Removed Authorization to Pnl 7 Rm 7. Increased personnel U/G to 75 Removed requirement for both diesel generators Removed Geotechnical Engineering Guidance information Removed Senior Supervisory Watch (SSW) from prerequisite and add to Contingency Staffing for High Impact Work. Additional management/supervision per ESS-2014-03 and 09 (Controls 13 and 28 respectively) satisfied by the Field Work Supervisor (FWS).
5	05/15/15	Updated with TSR designators (\$) [] Removed the requirement for vital assessment for personnel wearing respirators.
6	07/16/15	Revised Step 2.2.11 to increase U/G Occupancy to 98 personnel and defined that two hoists must be In-service for this allowance.
7	10/16/15	Added Substep 2.2.14.1 to Limit combustibles/equipment in Combustible Loading Control Zone. Added 2.2.16 requirements for work in areas with limited audio/visibility of evacuation alarms.
8	12/14/15	Added Step 2.2.7 for Control #5 of ESS-2014-10. Loss of UVS operability.

1.0 PURPOSE/SCOPE

This Work Control Document (WCD) implements the operational restrictions and interim controls of the current revisions of ESS-2014-03, *WIPP Habitability Evaluation of the Safety of the Situation (ESS)* and ESS-2014-09, for daily entries into the underground. The scope includes the following:

- Initial Entry into the underground
- Perform authorized WCD(s), and/or Type 4 work with associated job hazard analysis
- Visual inspections and walkdowns
- Final Exit from the underground

2.0 PRECAUTIONS AND LIMITATIONS

2.1 PRECAUTIONS

- Radiological conditions exist in the underground.
- Potentially unsafe ground may be encountered.
- Pinch points exist around the conveyance doors when entering/exiting the conveyance.
- Tripping hazards are present when entering/exiting the conveyance.
- Personnel may be subject to heat stress.
- Potential Organic Vapor Hazard in the vicinity of the disposal panels.
- Potential fire hazard exists underground.

2.2 LIMITATIONS

- [] 2.2.1 The controls of this Underground (U/G) Entry/Exit procedure are applicable upon the first person receiving U/G access (brassing-in) and are no longer applicable upon the last person exiting the access process (brassing-out) for each U/G entry. The following Operational Restrictions below apply unless specifically authorized by another Safety Basis Document:
 - [] 2.2.1.1 **(\$)** WASTE HANDLING MODE may be entered for movement of site-derived waste provided the waste is handled in accordance with approved procedure(s). Existing Technical Safety Requirements (TSR), applicable during WASTE HANDLING MODE in the U/G will apply. **[ESS-2014-09]**
 - [] 2.2.1.2 **(\$)** Continue to operate the Mine Ventilation System in Filtration Mode. **[ESS-2014-03]**
- [] 2.2.2 **(\$)** The following U/G ventilation exhaust drift is restricted access, for these activities, this is defined as: **[ESS-2014-09]**
 - [] 2.2.2.1 Exhaust drift at the intersection of Panel 7, Room 6 requires CBFO concurrence.

- [] 2.2.3 **(\$)** Personnel MUST exit the U/G if the following differential pressure readings reach an alarm value: **[ESS-2014-03]**
- PDAH-056-002/006 MOD EFF. FILTER HEPA UNIT 41-B-856/857 CLOGGED
 - PDAH-056-003/007 HIGH EFF. FILTER HEPA UNIT 41-B-856/857 CLOGGED
 - PDAH-056-004/008 1st HEPA FILTER HEPA UNIT 41-B-856/857 CLOGGED
 - PDAH-056-005/009 2nd HEPA FILTER HEPA UNIT 41-B-856/857 CLOGGED
 - 413 UVFS MOD FLTR 856/857 CLOG (CMS Point # CH5602/5610)
 - 413 UVFS HI FLTR 856/857 CLOG (CMS Point # CH5604/5612)
 - 413 UVFS 1ST HEPA 856/857 CLOG (CMS Point # CH5606/5614)
 - 413 UVFS 2ND HEPA 856/857 CLOG (CMS Point # CH5608/5616)
- [] 2.2.4 **(\$)** The following differential pressure will be monitored in the CMR:
[ESS-2014-03]
Bulkhead 308 Regulator
- [] 2.2.4.1 IF the differential pressure indication for Bulkhead 308 Regulator is in alarm condition OR inoperable, THEN the differential pressure for the Waste Hoist Tower (WHT) MUST be monitored in the CMR.
- [] 2.2.4.2 IF both the Bulkhead 308 Regulator and the WHT differential pressure instruments/indications are either in an alarm condition or inoperable, THEN timely actions described in Attachment 2 MUST be taken and maintained until either condition is corrected.
- [] 2.2.5 **(\$)** Radiological monitoring in accordance with WP 12-5 Waste Isolation Pilot Plant Radiation Safety Manual MUST be established near clean/contaminated area boundaries in the U/G while personnel are in the U/G. **[ESS-2014-03]**
- [] 2.2.6 **(\$)** Personnel MUST exit the U/G if the UVFS shuts down.
[ESS-2014-03 & ESS-2014-10]
- [] 2.2.7 **(\$)** No personnel are allowed in the U/G during loss of Underground Ventilation System operability. **[ESS-2014-10, 5]**

Exception: Maintenance personnel may enter the U/G if necessary to determine the cause of loss of UVS operability and to correct the condition.
- [] 2.2.8 **(\$)** Visual Ground Control inspections will be performed and evaluated upon entry into the underground and as conditions warrant while performing work U/G. **[ESS-2014-03]**

- [] 2.2.9 ONLY open one door at a time when traveling through airlocks, unless authorized by U/G Services.
- [] 2.2.10 Evidence related to the underground haul truck fire incident and the fire scene shall not be disturbed unless action is authorized by NWP legal counsel to support forensic investigation activities.
- [] 2.2.11 U/G access will be directed in WP 04-AD3013. Personnel shall obtain an approved Underground Access Pass (UAP) issued by the Underground Controller.
- [] 2.2.12 Two hoists must be In-Service in order to routinely access the U/G. Access is limited to 98 personnel on the condition the Waste Hoist is In-Service along with either the Salt or AIS hoist, otherwise access is limited to 24 personnel.
- [] 2.2.13 Radiological – Entry will be performed in accordance with the requirements and limitations of the applicable Radiological Work Permit.
- [] 2.2.13.1 Radiological surveys in posted Radiological Buffer Areas (RBA) are performed on the floor and up to eight feet high on the ribs, should any work be performed above eight feet in a posted RBA, Radcon will determine if an additional survey is required.
- [] 2.2.14 Air Quality – Underground Services personnel will perform air quality checks in work areas. The tables below are to reference for action levels and alarm levels.

Parameter Measured	Action Level	Instrument
Carbon Monoxide	25 ppm or greater	Multi-gas Detector (e.g., ITX or MX-6)
LEL or % methane	5% LEL or 0.25% Methane or greater	
Oxygen	Less than 19.5%	

Volatile Organic Compounds		
Respiratory Protection	Protection Factor	PID Alarm Level
No respirator	0	5 ppm
Full Face, negative pressure with Organic Vapor Cartridges**	50	50 ppm*
PAPR with Organic Vapor Cartridges**	1000	50 ppm*
* Upon instrument alarm, personnel must retreat to a safe area and consult with Industrial Safety / Industrial Hygiene.		
** Respirator cartridges must protect against Organic Vapors (OV) or Organic Vapors/Acid Gas (OVAG)		

- [] 2.2.15 Combustible loading to be minimized in the U/G, only materials required to execute the planned work will be taken into the U/G. Unused materials unless properly stored or controlled will be removed from the U/G at the end of the work evolution and/or shift.
- [] 2.2.15.1 In accordance with WP12-FP3003 transient combustibles, Liquid-Fueled vehicles and other combustible materials may not be stored or left unattended in the Combustible Loading Control Zone.
- [] 2.2.16 (\$) Personnel will be directed to evacuate and exit the U/G if there is an indication of fire. **[ESS-2014-03]**
- [] 2.2.17 A portable mine phone or portable radios shall be provided for personnel working in areas of the mine where a fixed mine phone is not readily accessible and when the evacuation strobe light(s) are not within the workers 'line of sight'. Use of portable radio(s) requires one person to be in close proximity to a fixed mine phone and have line of sight of evacuation strobe light. However, this does not apply to transient/short term activities, e.g., routine visual surveys or rounds, transporting materials through an area on the way to another location.

3.0 PREREQUISITES

NOTE

Steps [] 3.1.1 through [] 3.1.6 may be performed in any order.

3.1 ADMINISTRATIVE

- [] 3.1.1 FIELD WORK SUPERVISOR (FWS) OR DESIGNEE CONDUCT a weekly pre-job brief per WP 04-AD3030.
 - The Toplander & Radcon understand the requirement to remain available to perform duties by donning respiratory protection should a Shelter-in-Place protective action be required following an event during performance of this evolution.
 - (\$) Personnel understand the preferred routes to travel, as well as Escape Map routes in the event of an emergency egress AND are knowledgeable with the process of donning and using both the W65 Self-Rescuer and the SCSR should a fire occur in the U/G reference Attachment 3. **[ESS-2014-03]**
- [] 3.1.2 **FWS/FSM ENSURE** the Hoists to be used are In-Service.
- [] 3.1.3 **FWS/FSM ENSURE** operability of a decontamination facility.
- [] 3.1.4 **FWS/FSM ENSURE** Facility Operations has confirmed the availability of one standby diesel generator during the performance of this WCD.
- [] 3.1.5 **FWS/FSM ENSURE** CMRO monitors Attachment 2.
- [] 3.1.6 **FWS ENSURE** contingency staffing requirements are met and the personnel understand the requirements described in Section 5.1.
- [] 3.1.7 **(\$) FWS ENSURE** all Administrative Prerequisites have been performed. **[ESS-2014-03]**

SIGN-OFF FWS

3.2 TASK PREPARATION

- [] 3.2.1 **FWS ENSURE** items shown in Section 6.0, Special Tools/Equipment are staged and ready for use.

4.0 SPECIAL TRAINING/MEDICAL REQUIREMENTS

4.1 Fire Watch Training (FWT-101)

5.0 CONTINGENCY STAFFING

5.1 The following contingency staffing is required to be on-call; Individual activities that are high impact/high risk requiring staffing to be on-site and remain on-site for the duration of such activities will specify this requirement.

- Emergency Response Team (ERT)
- Mine Rescue Team (MRT)
- Emergency Services Technicians (EST)
- Site Medical Nurse
- Facility Operations
- Emergency Operations Center personnel
- Senior Supervisory Watch (SSW)

6.0 EQUIPMENT

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Description
Hard Hat
Cap Lamp
Safety glasses with side shields
Hard Toe Shoes
W65 Self Rescuer Respirator
Reflective Clothing
Radiological Protective Clothing / Equipment listed as required by RWP

TOOLS AND EQUIPMENT

Description
*Multi-Gas Detector(s)
MiniRae 3000 Photo Ionization Detector(s) (PID)
WBGTi Heat Stress Monitor(s)
*Bladewerx SaberAlert Cam(s)

* - Required Item, all other as required.

7.0 WORK INSTRUCTIONS

NOTE

Authorization at Step [] 7.1.1 indicates Steps in Section 3.1 have been met. Step [] 7.1.3 may be performed at any time for remaining personnel requiring access to the U/G if they have met or fulfilled the requirements set forth in this WCD.

7.1 INITIATION OF ENTRY

[] 7.1.1 **FWS AUTHORIZE** U/G Controller to commence personnel brass-in.
SIGN-OFF FWS

[] 7.1.2 **U/G CONTROLLER ENSURE** personnel being brassed-in have attended a weekly pre-job briefing as described in Section 3.1.

[] 7.1.3 **FWS AUTHORIZE** Hoist Operations to transport personnel and support materials to the underground.

SIGN-OFF FWS

[] 7.1.4 **INITIAL ENTRY PERSONNEL PERFORM** the following at the Operating Base.

- Air monitoring readings
- Inspect Ground conditions

[] 7.1.5 **FWS COMMUNICATE** status to CMR. A status of "SAT" may be used to indicate the criteria above (e.g., air quality, heat stress, ground control) has been satisfied.

NOTE

Multiple WCDs or visual inspections/walkdowns may be authorized for each day's entry and be performed concurrently.

7.2 PERFORM AUTHORIZED WORK

[] 7.2.1 **TRAVERSE** to identified work location performing the following:

- Visual ground control assessment
- Radiological surveys as required and observing the established postings
- Air monitoring readings

[] 7.2.1.1 **COMMUNICATE** to the FWS upon initial arrival at work location AND THEN periodically communicate status/location to FWS (e.g., 30, 45, 60 minutes).

[] 7.2.1.2 **FWS MAINTAIN** Log Book of time and location of periodic communication.

[] 7.2.2 **PERFORM** the following:

- Authorized WCD(s)
- Type 4 work with associated job hazard analysis
- Visual inspections and walkdowns

NOTE

Authorized work may complete at different times, Section 7.3 may be performed multiple times allowing personnel to exit the U/G after performing work.

7.3 COMPLETION ACTIVITIES

[] 7.3.1 **TRAVERSE** to Operating Base.

[] 7.3.1.1 **COMMUNICATE** location to FWS.

[] 7.3.1.2 **HOIST OPERATIONS TRANSPORT** personnel and support materials to the surface.

[] 7.3.1.3 Personnel **BRASS-OUT**.

NOTE

Termination of entry is for the last mantrip of the day.

7.4 TERMINATION OF ENTRY

- [] 7.4.1 **FWS VERIFY** with the U/G Controller head count for last mantrip.
- [] 7.4.2 **FWS VERIFY** personnel accountability.

SIGN-OFF FWS**7.5 WASTE DISPOSITION**

NOTE

Step [] 7.5.1 may be completed as a post action step if radiological waste remains in the U/G or is staged for processing during a later work shift. The waste may remain U/G or be placed by the Top Lander, Radcon, or other approved staff in a radiological storage area (i.e. connex or radiological waste storage structure/area) awaiting final data collection and processing.

- [] 7.5.1 **IF** Radiological Waste is processed,
THEN FWS ENSURE RCTs affix the radiological survey label containing contact and 30 cm dose rates measured in $\mu\text{R/hr}$ scale range to the bag / container.
 - [] 7.5.1.1 **RCT ENSURE** the Radiological Survey Number is recorded on the radiological survey label.

ATTACHMENT 1 – SIGN-OFF SHEET**PREREQUISITES**

Section	Action	Initials
[] 3.1.7	Administrative Prerequisites performed	FWS _____ DATE _____ TIME _____

PERFORMANCE

Section	Action	Initials
[] 7.1.1	Personnel authorized to brass-in	FWS _____
[] 7.1.3	Hoist Operations authorized to transport personnel	FWS _____
[] 7.4.2	Verified personnel accountability	FWS _____

PERSONNEL DATA

Printed Name	Signature	Initials	Date

CMR Monitoring [ESS-2014-03]

To ensure compliance with ESS-2014-03, Re-Entry Evaluation of the Safety of the Situation, the following items will be monitored by a CMRO:

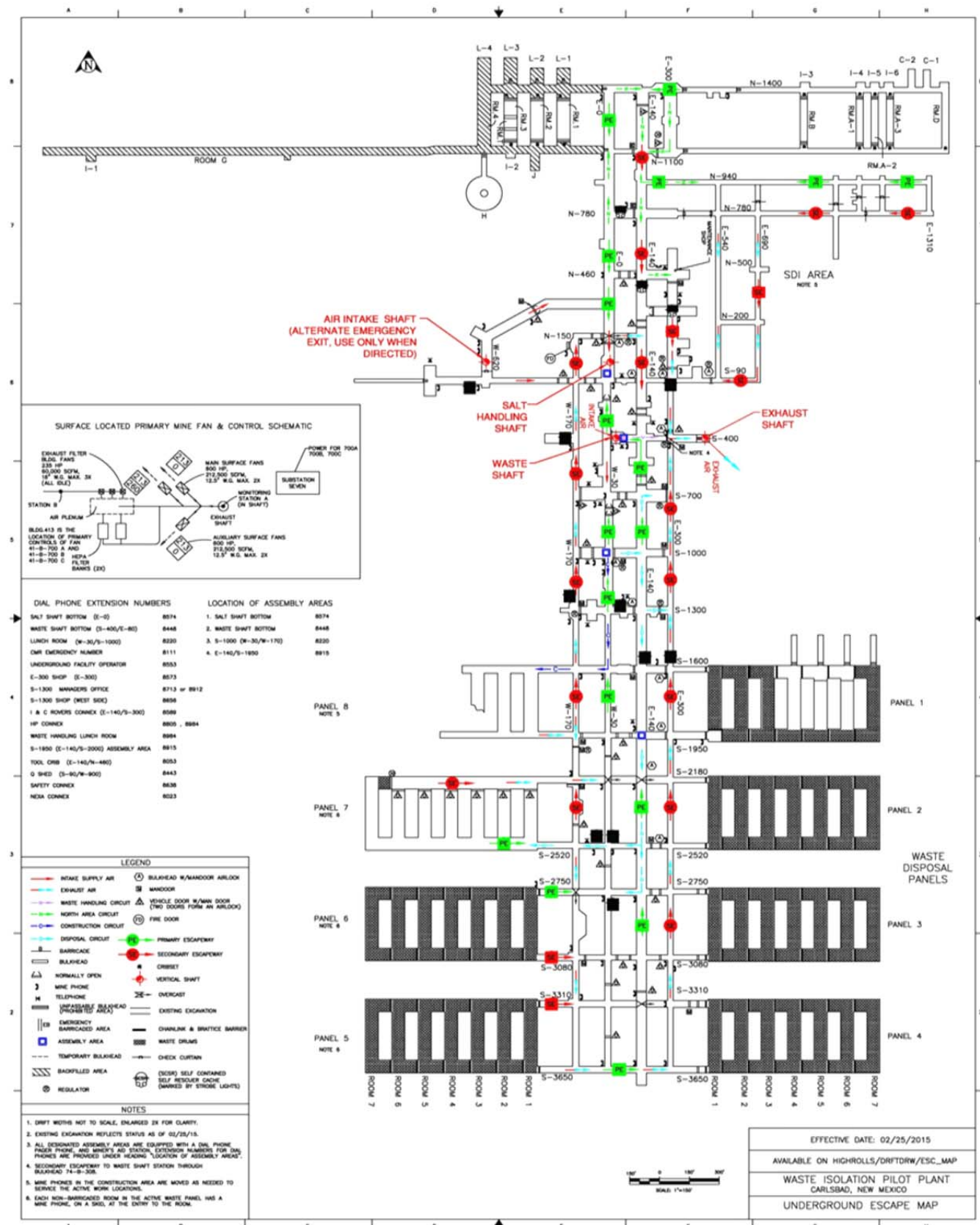
- 1) **(\$)** **IF** any of the differential pressure readings identified below reach the alarm value,
THEN NOTIFY the Re-entry Team to exit the U/G. **[ESS-2014-03]**
 - PDAH-056-002/006 MOD EFF. FILTER HEPA UNIT 41-B-856/857 CLOGGED
 - PDAH-056-003/007 HIGH EFF. FILTER HEPA UNIT 41-B-856/857 CLOGGED
 - PDAH-056-004/008 1st HEPA FILTER HEPA UNIT 41-B-856/857 CLOGGED
 - PDAH-056-005/009 2nd HEPA FILTER HEPA UNIT 41-B-856/857 CLOGGED
 - 413 UVFS MOD FLTR 856/857 CLOG (CMS Point # CH5602/5610)
 - 413 UVFS HI FLTR 856/857 CLOG (CMS Point # CH5604/5612)
 - 413 UVFS 1ST HEPA 856/857 CLOG (CMS Point # CH5606/5614)
 - 413 UVFS 2ND HEPA 856/857 CLOG (CMS Point # CH5608/5616)

- 2) **(\$)** **CMRO MONITOR** Bulkhead 308 Regulator
IF the differential pressure for Bulkhead 308 Regulator is in alarm or inoperable,
THEN CMRO MONITOR the dp for the WHT. **[ESS-2014-03]**

(\$) **IF** both Bulkhead 308 Regulator and WHT are in alarm or inoperable,
THEN CMRO PERFORM the following: **[ESS-2014-03]**

 - **OPEN** the WHT doors to either the WHB CH or RH Confinement Ventilation Systems
 - **ENSURE** CAMs are installed, operable and monitored at the following locations:
 - Waste Hoist Collar area
 - Second floor of the WHT
 - CH Conveyance Loading Room
 - RH Facility Cask Loading Room
 - Auxiliary Air Intake
 - **DETERMINE** actions with FSM that are required to restore either Bulkhead 308 Regulator or WHT dp monitoring

- 3) **(\$)** **IF** the U/G Ventilation System shuts down for any reason,
THEN CMRO NOTIFY the Re-entry Team to exit the U/G. **[ESS-2014-03 & ESS-2014-10]**



ATTACHMENT 17
AREA 451 CMR FIRE ALARM PANEL AR CLOSURE
DOCUMENTATION

5 PAGES

CHAMPS Preventative Maintenance Cover sheet

Work Order: 1304245

Method Preventive Maintenance

State: 60 - RTW

Description: 451FP08941 ANG IT FIRE PANEL

Equipment I.D.: 451-FP-089-41

PM I.D.: PM000014

Equipment Name: FIRE PANEL FOR (CMR AREA)

Management Level: ML-3

Function Class: BoP

System: FP03

Parent:

Location: 451

Room: 230 CMR

Dept: FACOP

Priority: 3A


Planner: HRT COMPLETE,

Assign to: SELF, RANDY

Labor Account: W126030301

INCIDENT ENERGY: <i>0.6</i>	
COM Lockout/Tagout <input checked="" type="radio"/> N No. <i>13-F0-162</i> (if required) <input type="checkbox"/> PLD LO/TO <input type="checkbox"/> N/A	
COM Release/Date: <i>6-5-13</i>	WGM Release/Date: <i>060513</i>
Work Authorized By:	
Signature/Date: <i>6-5-13</i>	
Work Area Inspection completed	Task completed by:
Worker/Date: <i>6-5-13</i>	Worker/Date: <i>6-21-13</i>
FWM Work Complete/Date: <i>073013</i>	COM Retest Comp/Date: <i>N/A</i>
COM Work Complete/Date: <i>103013</i>	
Overview of Work Performed: <i>Failed 5 minute Bell Test. 6-6-13</i>	
<i>Batteries Replaced under WO# 1306125 that was completed on 7/2/13 Batteries were replaced and test with WO 13P6125</i>	
<i>Testing was sat Post Job, No Comments 6-8-13</i>	
Task Preview Performed (sign and Date): <i>060513 6/5/13</i>	<i>6-5-13</i>
Work Control/Date: <i>12/31/2013</i>	
Due Date: 5/27/2013	Trade ID: ITECH
Next Due Date: 6/2/2014	

ORIGINAL



Work Order Step Review

CriteriaResults - htmlResults - Grid

Work Order Step Review

Total Number of Records Found: 1

Reset Grid Width

Drag a column header and drop it here to group by that column

WO Id	WOS Asset Id	WO Name	WOS Completed Date	Asset Description	WOS Description	Completion Remarks
1304245	451-FP-089-41	451FP08941 ANG IT FIRE PANEL	12/31/2013	FIRE PANEL FOR (CMR AREA)	CLEANING, INSPECTING AND TESTING OF A FIRE DETECTION	PERFORMED ANNUAL PM/FAILED 5 MINUTE BELL TEST/BATTERIES REPLACED UNDER WO 1306125 ON JULY 2, 2013/BATTERIES TESTED SAT

CHAMPS Expedited Maintenance Cover Sheet

Work Order: 1306125

Method: Expedited Work

State: 10 - Created

Description: 451FP08941 REPLACE BATTERIES AND PERFORM 24 HOUR TEST

Equipment I.D.: 451-FP-089-41

Room: 230 CMR

Equipment Name: FIRE PANEL FOR (CMR AREA)

Function Class: BoP

System: FP03

Management Level: ML-3

Location: 451

Dept: FACOP

Priority: 3B

Planner:

Assign to: SELF, RANDY

Labor Account: 126030301W

Parent:

Incident Energy: 0.6	COM Review/Date: 6/11/13
FPE/Date: 6/11/13	Planner/Date: 6-11-13
WGM/Date: 06/11/13	
PROPOSED LOCKOUT/TAGOUT	[] COM LO/TO Tag Number [] PLD LOTO [] N/A
PROPOSED PLD LOCKOUT/TAGOUT	LOCATION: (N/A for COM Lockout/Tagout)
if PLD, Lockout/Tagout performed at recommended Location	
Person performing PLD	Date
Performed Zero Energy Check:	(if Required)
Verify Zero Energy Check:	(if Required)
Performed Zero Energy Check:	(if Required)
Verify Zero Energy Check:	(if Required)
Performed Zero Energy Check:	(if Required)
Verify Zero Energy Check:	(if Required)
COM Release/Date: 6-19-13	WGM Release/Date: 20 JUNE 2013
Work Authorized By:	
Signature/Date: 6-19-13	
Work Area Inspection Completed:	Task Completed:
Worker/Date: 6-20-13	Worker/Date: 6-20-13
FWM Work Completed/Date: 06/21/13	COM retest Completed/Date:
COM Work Completed/Date: 6-21-13	Not Used:
COMMENTS: Replaced batteries and Perform 24 hr test. Fire Panel tested Sat.	
Post Job: No Comments	
COM, if cancelled, Sign/Date:	Work Control/Date: 7/2/2013



Work Order Step Review

Criteria	Results - html	Results - Grid
----------	----------------	----------------

Work Order Step Review

Total Number of Records Found: 1

Reset Grid Width

Drag a column header and drop it here to group by that column

WO Id	WOS Asset Id	WO Name	WOS Completed Date	Asset Description	WOS Description	Completion Remarks
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
1306125	451-FP-089-41	451FP08941 REPLACE BATTERIES AND PERFORM 24 HOUR TEST	07/02/2013	FIRE PANEL FOR (CMR AREA)	451FP08941 REPLACE BATTERIES AND PERFORM 24 HOUR TEST	REPLACED BATTERIES AND PERFORMED 24 HOUR TEST FIRE PANEL TESTED SAT



OPERATIONS LOG

0197

Date 06/9/14

TIME	COMMENTS
1130	856 STABLE
1134	FROM REPORTS TEST OF 856 1ST HEPA FILTER REVERSED
	EFFICIENCY OF 99.98%
1155	ALL PERSONNEL OUT / CLONE BLDG 413
1157	STATION A DIRECTS = 1209 α , 1940 B DPM
1230	856 STABLE
1235	RW SECURE DW PUMPS FOR I+C MAINT. ON
	FW LEVEL INDICATION
1259	PM 1P CURR FIRE PANEZ / TAGGER PANEZ
1310	START DG #1 FOR RETEST
1326	DG #1 SECURE - RETEST FAILED DUE TO LOW
	@ OIL PRESS. GAUGE. WILL BE REPAIRED A PART OF PKG ON AR SUBMITTAL
1331	856 STABLE
1334	CURR TRGS CURR FIRE PANEZ AFTER PM +
	FIRE ALARM / SPRINKLER TESTING SAT HOST / 384
	NO RETEST ASSOC. W/ CURR FIRE PANEZ
1345	SPRINKLER TEST SAT HOST / 384 COMPLETE / SAT -
	PUMP HOUSE RESET
1357	STATION A DIRECTS = 1311 α , 2190 B DPM
1430	856 STABLE
1439	CMS ENG. REMOVING 856 + 857 HEPA LOW DP
	ALARMS PER ECO 13389 APP. 1
1457	CMS ENG. COMPLETED REMOVING 856 857 LOW DP ALARMS
1530	856 STABLE
1550	SECURE R14 (804/806) HVAC

ATTACHMENT 18
FIRE PANEL 452-FP-031 AR CLOSURE DOCUMENTATION
2 PAGES

CHAMPs Corrective Maintenance Cover Sheet

Work Order: 1312925

Method :Corrective

State:10 - Created

Description: 452-FP-031 REWORK FIRE PANEL

Equipment I.D.: 452-FP-031

Room: 125 NEAR WEST
DOOR

Management Level: ML-3

Equipment Name: FIRE PANEL

Function Class: BoP

System:FP03

Location: 452

Dept: FACOP

USQ Screening or Evaluation No. N/A

N/A if not Required

Priority: 3B

Planner: FELL, CLIFFORD

Assign to: FELL, CLIFFORD

Account: 126030301W

Parent:

Incident Energy: <u>0.6</u>	ECO No CE/Date: <u>N/A</u>	Safety/Date: <u>[REDACTED] 1-21-14</u>
Alara/Date: <u>N/A</u>	S. U. Eng/Date: <u>N/A</u>	QA/Date: <u>[REDACTED] N/A</u>
RWP NO. <u>N/A</u> Rad Con/Date	NEPA/Date: <u>N/A</u>	Planner/CE/Date: <u>[REDACTED] 1/23/14 1/23/14</u>
FPE/EMM/DATE <u>[REDACTED] 1/21/14</u>	WORKER/DATE <u>[REDACTED] 1-16-14</u>	Worker/Date: <u>N/A</u>
FWM/DATE <u>[REDACTED] 1-22-14</u>	WGM/DATE <u>N/A</u>	WGM/Date: <u>[REDACTED] 1-22-14</u>
COM Review/DATE: <u>[REDACTED] 1/24/14</u>		
PROPOSED LOCKOUT/TAGOUT <input checked="" type="checkbox"/> COM LO/TO Tag Number <u>14-FP-17B</u> [] PLD LOTO [] N/A		
PROPOSED PLD LOCKOUT/TAGOUT LOCATION: <u>N/A</u> (N/A for COM Lockout/Tagout)		
if PLD, Lockout/Tagout performed at recommended Location <u>N/A</u> / <u>1</u>		
Person performing PLD _____ Date _____		
COM Release/Date: <u>[REDACTED] 06/12/14</u>	WGM Release/Date: <u>[REDACTED] 06/12/14</u>	
Work Authorized By: <u>[REDACTED]</u>	QA Completed/Date: <u>N/A</u>	
Signature/Date: <u>[REDACTED] 06/12/14</u>		
Work Area Inspection Completed: <u>[REDACTED]</u>	Task Completed: <u>[REDACTED]</u>	
Worker/Date: <u>[REDACTED] 6-27-14</u>	Worker/Date: <u>[REDACTED] 6-27-</u>	
FWM Work Completed/Date: <u>[REDACTED] 06/27/14</u>	COM retest Completed/Date: <u>[REDACTED] 2/25/2014</u>	
COM Work Complete/Date: <u>[REDACTED] 07 JUL 14</u>	CE ECO Verified/Date: <u>N/A</u>	
Overview of Work Performed: (Problems, solutions, retest requirements, retest results, parts used and cost)		
PROGRAMMED FIRE PANEL BY C.O.G.		
ALL ZONES A-OK CMR RECEIVED ALL ALARMS		
Task Preview Performed (Sign and date) <u>[REDACTED] 6-13-14</u>		<u>[REDACTED] 6-13-14</u>
COM, if cancelled, Sign/Date: <u>N/A</u>	Work Control/Date: <u>[REDACTED] 7/8/14</u>	

THE ACTIVITIES IN THIS WCD WILL NOT ADVERSELY AFFECT THE EFB VENTILATION SYSTEM



*Work Order Step
Review*

CriteriaResults - htmlResults - Grid

Work Order Step Review

Total Number of Records Found: 1

Reset Grid Width

Drag a column header and drop it here to group by that column

WO Id	WOS Asset Id	WO Name	WOS Completed Date	Asset Description	WOS Description	Completion Remarks
1312925	452-FP-031	452-FP-031 REWORK FIRE PANEL	06/27/2014	FIRE PANEL	452-FP-031 REWORK FIRE PANEL	Programmed fire panel by COG. All zones A-ok. CMR received all alarms.

ATTACHMENT 19
GATE HOUSE FIRE PANEL LIGHT AR CLOSURE DOCUMENTATION

1 PAGE



OPERATIONS LOG

0337

Date 7-29-14

TIME	COMMENTS
0714	SWIPES FROM WH TOWER AT COLLAR ET ARE CLEARED ^{DP 7/29/14} by Radcon Eng.
0715	FIRE ALARM TESTING AT THE GATEHOUSE
0717	FIRE ALARM TESTING AT THE GATEHOUSE COMPLETE
0753	LOCK AND TAG 1020 B CHILLER AT SUB #2
0759	CH EQUIPMENT T-035 ACGLF-005 out of CAL
0805	(LATE ENTRY) 0752 WASTE HOIST TOWER DP HIGH FSM NOTIFIED
0808	RCT OPS CHECK AND FILTER CHARGE AT STATION B
0814	OPS CHECK AND FILTER CHARGE COMPLETE AND SAT AT STATION B
0817	STARTING UP 604C DW PUMP
0820	RCT DIRECT TRISK AT STATION A
0828	DIRECT TRISK AT STATION A 1227 dpm A, AND 2024 dpm B
0842	A SITE DW OUTAGE, AND SHUT DOWN 604C DW PUMP
0849	SALT HOIST COVER COMPLETE
0957	RCT DIRECT TRISK AT STATION A
1003	STATION A READING 947 dpm A, AND 1493 dpm B
1101	REMOVING LOCK AND TAG ON B CHILLER
1155	RCT DIRECT TRISK AT STATION A
1159	STATION A READING 990 dpm A, AND 1684 dpm B
1325	Low dps on 308 bulkhead for 1 second, down to -.07 FSM and Cos engineer notified.
1334	Personnel at H-12 are complete for today.
1338	WHE REPORTS H1-H-053 6 ton forklift is OOS DUE TO LAPPED NDE ON FORKS.

ATTACHMENT 20
HYDRANT #23 AR CLOSURE DOCUMENTATION
2 PAGES

CHAS Corrective Maintenance Cover Sheet

Work Order: 1309883

Method :Corrective

State:10 - Created

Description: FWYFH23 BROKEN STEM ON FIRE HYDRANT

Equipment I.D.: FW-Y-FH-23

Room: NE OF 489

Management Level: ML-2

Equipment Name: FIRE HYDRANT

Function Class: BoP

System:FP01

Location: 240

Dept: FACOP

USQ Screening or Evaluation No.

N/A

N/A if not Required

Priority: 3B

Planner: NANCE, WES

Assign to: NANCE, WES

Account: 00000000

Parent: FW-Y-V-023

Incident Energy: 0	ECG No CE/Date: [REDACTED] 6/27/14	Safety/Date: N/A
Alara/Date: N/A	S. U. Eng/Date: N/A	QA/Date: N/A
RWP NO. N/A	NEPA/Date: N/A	Planner/CE/Date: [REDACTED] 6-25-14
Rad Con/Date	WORKER/DATE [REDACTED] 6-27-14	Worker/Date: [REDACTED] 7/1/14
EPE/EMM/DATE [REDACTED] 6/26/14	WGM/DATE [REDACTED] 6/27/14	WGM/Date: N/A
COM Review/DATE [REDACTED] 7-1-14		
PROPOSED LOCKOUT/TAGOUT	COM LO/TO Tag Number 13-FO-259	[] PLD LOTO [] N/A
PROPOSED PLD LOCKOUT/TAGOUT LOCATION: _____ (N/A for COM Lockout/Tagout)		
if PLD, Lockout/Tagout performed at recommended Location _____ / _____ Person performing PLD _____ Date _____		
COM Release/Date: [REDACTED] 7-22-14	WGM Release/Date: [REDACTED] 7/22/14	
Work Authorized By: [REDACTED] 7-22-14	QA Completed/Date: N/A	
Signature/Date: [REDACTED] 7-22-14		
Work Area Inspection Completed.	Task Completed:	
Worker/Date [REDACTED] 7-24-14	Worker/Date: [REDACTED] 10-28-14	
FWM Work Completed/Date: [REDACTED] 10/28/14	COM retest Completed/Date [REDACTED] 10-28-14	
COM Work Complete/Date: [REDACTED] 10-28-14	CE ECO Verified/Date: N/A	
Overview of Work Performed: (Problems, solutions, retest requirements, retest results, parts used and cost)		
COMPLETE & SAT [REDACTED] 10-28-14		
Task Preview Performed (Sign and date)		
COM, if cancelled, Sign/Date: N/A	Work Control/Date: [REDACTED] 10/30/14	

THE ACTIVITIES OF THIS WCD WILL NOT ADVERSELY AFFECT THE EFB (W/G) VENTILATION SYSTEM. [REDACTED] 6-26-14



Drag a column header and drop it here to group by that column

WO Id	WOS Asset Id	WO Name	WOS Completed Date	Asset Description	WOS Description	Completion Remarks
1309883	FW-Y-FH-23	FWYFH23 BROKEN STEM ON FIRE HYDRANT POD SCHEDULE 7/23 - 10/9	10/28/2014	FIRE HYDRANT	FWYFH23 BROKEN STEM ON FIRE HYDRANT	Complete/SAT

ATTACHMENT 21
HYDRANT #3 AR CLOSURE DOCUMENTATION
2 PAGES

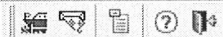


OPERATIONS LOG

0109

Date 0529/14

TIME	COMMENTS
1230	856-857 STABLE.
1248	Clear Tags / 3m Z3 Supp Bldg. HVAC.
1317	8down Salt Hoist.
1330	856-857 STABLE.
1354	STA A' Fresh.
1358	STA A' reading is 790.9 dpm & 1417.8 dpm B.
1420	Cleared Trip # 20975 for Hydrant #3.
1424	FSM Review CMR Narrative log Bank [REDACTED]
1431	856-857 STABLE.
1457	8down AIS Hoist.
1530	856-857 STABLE.
1604	STA A' Fresh.
1608	Performing WP 04-PC 3017. PA Test.
1609	STA A' reading is 876 dpm & 1575 dpm B.
1624	Performance of WP 04-PC 3017 complete.
1640	856-857 STABLE.
1758	856-857 STABLE.
1800	STA A' Fresh.
1803	STA A' reading is 876 dpm & 1727 dpm B.
1833	856-857 STABLE.
1842	CMR reviewed by [REDACTED]
1850	Rw Received by [REDACTED]
1927	HEPA Filter Banks 856-857 ARE STABLE
2012	RCI ops checks station B
2018	Ops checks at station B ARE COMPLETE, AND SAT



Edit Work Order Steps

Work Order 1310090 Type Corrective

Description FWYFH3 HYDRANT WILL NOT FLOW WATER

General	Procedure	Trades	Materials	Assets	Cost	Completion
---------	-----------	--------	-----------	--------	------	------------

Completed ☐ % Complete 0 Completed By Date Complete Failure Code Asset Condition Data Collect Spec

Remarks Cancelled per B.Barnhart - Flow test was performed on 5/24/14. No flow problem per J. Greenfield (FPE)

Cause Code

Description

Equip Effect System Effect Plant Effect

Action Code	Action Code Description	Component	Comp?	Comments
-------------	-------------------------	-----------	-------	----------

ATTACHMENT 22
FIRE WATER PIV #FW-Y-PIV-27 AND HYDRANT #5 AR CLOSURE
DOCUMENTATION

2 PAGES

CHAMPS Type 1 Cover She

14/07/30

EA10WC3011-26-0 Rev. 1

Work Order: 1407979

Method : Type 3

Priority: 3B-031

Description: FWYFH5 Bench test spare fire hydrant

Equipment I.D.: FW-Y-FH-5

Room: EAST SIDE OF
952

Management Level: ML-2

Equipment Name: FIRE HYDRANT

Function Class: BoP

System: FP01

Location: 240

USQ Screening or Evaluation No. 514-0411

N/A if not Required

Dept: FACOP

Planner: GRIFFIN, JIMMY

Account: 00000000

Parent: FW-Y-V-005

Incident Energy: 0	CE/Date: if ECO No.: 8/5/14	Safety/Date: 8-5-14
Alara/Date: N/A	S.U.Eng/Date: N/A	QA/Date: 8/5/14
RadCon/Date: RWP NO. N/A	NEPA/Date: N/A	EB/Date: 8/5/14
Worker/Date: 8/5/14	Worker/Date: 8/5/14	FWS/Date: 8/5/14
COM Review/Date: 05 AUG 14	WC Manager/Date: 8/8/14	SMRB Review/Date: N/A
PROPOSED LOCKOUT/TAGOUT [] COM LO/TO Tag Number [] PLD LOTO [] N/A		
PROPOSED PLD LOCKOUT/TAGOUT LOCATION: N/A (N/A for COM Lockout/Tagout)		
Lockout/Tagout performed at recommended Location if PLD, N/A Person performing PLD 8/6/14 Date		
Work Authorized By 8/10/14	COM Release/Date 8/5/14	9/10/14
Signature/Date: 8/8/14	Suspended? Yes (No) <input checked="" type="checkbox"/> if yes, see Suspension Sheet.	
WGM Release Date: 8/8/14	Work Area Inspection Completed	
Task Completed, Worker/Date: 8-11-14	FWS Work Complete/Date: 8/12/14	
COM Restest Complete/Date: N/A	COM Work Acceptance/Date:	
QA Complete/Date: 8/13/14	CE ECO Verified/Date: N/A	
Comments (use Work Status Log if additional space is required) No Problems		
COM, if cancelled, Sign/Date: N/A	Work Control/Date: 8/14/14	

THE ACTIVITIES in this WCD WILL NOT ADVERSELY AFFECT THE EFB Ventilation System.



Drag a column header and drop it here to group by that column

WO Id	WOS Asset Id	WO Name	WOS Completed Date	Asset Description	WOS Description	Completion Remarks
1407979	FW-Y-FH-5	FWYFH5 Bench test spare fire hydrant	08/11/2014	FIRE HYDRANT	FWYFH5 Bench test spare fire hydrant	Work completed, no problems

ATTACHMENT 23
FIRE WATER PIV #FW-Y-PIV-21 AR CLOSURE DOCUMENTATION
2 PAGES

CHAM Corrective Maintenance Cover Sheet

Work Order: 1313992

Method :Corrective

State:10 - Created

Description: FWYPIV21 POST INDICATOR VALVE FROZE OPEN

Equipment I.D.: FW-Y-PIV-21

Room: WEST SIDE 413

Management Level: ML-2

Equipment Name: VALVE, POST INDICATOR

Function Class: BoP

System:FP01

Location: 240

Dept: FACOP

USQ Screening or Evaluation No. N/A 514-0400

N/A if not Required

Priority: 3B

Planner: GRIFFIN, JIMMY

Assign to: GRIFFIN, JIMMY

Account: W126030101

Parent:

Incident Energy: <u>0</u>	ECO No CE/Date: <u>7/17/14</u>	Safety/Date: <u>N/A</u>
Alara/Date: <u>N/A</u>	S. U. Eng/Date: <u>N/A</u>	QA/Date: <u>N/A</u>
RWP NO. <u>N/A</u>	NEPA/Date: <u>N/A</u>	Planner/CE/Date: <u>7-17-14</u>
Rad Con/Date		<u>2/22/14</u>
EPE/EMM/DATE <u>21 JUL 14</u>	WORKER/DATE <u>7-21-14</u>	Worker/Date: <u>7-21-14</u>
FWM/DATE <u>7/21/14</u>	WGM/DATE <u>8/12/14</u>	WGM/Date: <u>8/12/14</u>
COM Review/DATE: <u>7-21-14</u>		WCM
PROPOSED LOCKOUT/TAGOUT <input type="checkbox"/> COM LO/TO Tag Number <u>N/A</u> <input type="checkbox"/> PLD LOTO <input type="checkbox"/> N/A		
PROPOSED PLD LOCKOUT/TAGOUT LOCATION: <u>N/A</u> (N/A for COM Lockout/Tagout)		
if PLD, Lockout/Tagout performed at recommended Location _____ Person performing PLD _____ Date _____		
COM Release/Date: <u>8-4-14</u>	WGM Release/Date: <u>8/4/14</u>	
Work Authorized By: <u>8-4-14</u>	QA Completed/Date: <u>N/A</u>	
Signature/Date: <u>8-4-14</u>		
Work Area Inspection Completed: <u>8-5-14</u>	Task Completed: <u>8-5-14</u>	
Worker/Date: <u>8-5-14</u>	Worker/Date: <u>8-5-14</u>	
FWM Work Completed/Date: <u>8/12/14</u>	COM retest Completed/Date: <u>N/A</u>	
COM Work Complete/Date: <u>8/12/14</u>	CE ECO Verified/Date: <u>N/A</u>	
Overview of Work Performed: (Problems, solutions, retest requirements, retest results, parts used and cost) <u>No Problems - No Retest</u>		
Task Preview Performed (Sign and date)		
COM, if cancelled, Sign/Date: <u>N/A</u>	Work Control/Date: <u>8/12/14</u>	

THE ACTIVITIES in this WCD will NOT adversely affect the EFB Ventilation system.



Drag a column header and drop it here to group by that column

WO Id	WOS Asset Id	WO Name	WOS Completed Date	Asset Description	WOS Description	Completion Remarks
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
1313992	FW-Y-PIV-21	FWYPIV21 POST INDICATOR VALVE FROZE OPEN	08/05/2014	VALVE, POST INDICATOR	FWYPIV21 REPAIR POST INDICATOR VALVE TO NORMAL OPERATION	No problem/no retest

ATTACHMENT 24
FWT-101 FIRE WATCH TRAINING

15 PAGES

Attachment 1 - Lesson Plan Cover Page

LESSON PLAN COVER PAGE			
Course Code: FWT101	Revision: 2	Course Length: 6 hrs.	Date: Dec. 28, 2004
Course Title: Fire Watch Training			
Lesson: Fire Watch Training			
Author: Robert J. Paslay			
Training Aids: Carlsbad Fire Training Grounds, Proxima/computer/vcr Fire Pans Fire Extinguisher			
Terminal Objective: See Lesson Plan			
Enabling Objectives: See Lesson Plan			
References: WP 12-FP.01/WP 12-FP3002/Ifsta FireFighter Manual 4 th edition.			
Commitments:			

(Lesson Outline) What you will teach

(How) Visual Aids, Questions

- | (Lesson Outline) What you will teach | (How) Visual Aids, Questions |
|---|------------------------------|
| I. Introduction | |
| A. Introduce Class | |
| 1. State name | |
| 2. State title | |
| 3. State course title and material | |
| 4. Handout attendance sheet | |
| B. Lesson length | |
| 1. 6 hours | |
| C. Lesson format | |
| 1. 4 hours classroom and 2 hours field exercise | |
| D. Course prerequisites | |
| E. Terminal Objective | |

Upon completion of this course, the student will be able to demonstrate the required knowledge and capabilities to assume the duties of Fire Watch. This will be demonstrated by passing a multiple choice type written exam with a score of $\geq 80\%$ and by satisfactorily completing a Job Performance Measure.

F. Enabling Objectives

1. State when a Hot Work Permit is required.
2. State the correct procedure for activating and deactivating a fire watch.
3. State the duties assigned to a fire watch.
4. State the actions taken by the fire watch in the event of a fire.
5. Given fire extinguisher markings, State the type(s) of fire(s) the extinguisher will extinguish.
6. State the steps required to extinguish a fire using a portable fire extinguisher.
7. Demonstrate the ability to communicate the information required in a fire report. Demonstrate the proper use of portable fire extinguishers to extinguish class "A" and class "B" fires.

II. Presentation

A. Terminology

1. Combustible: Any material that will ignite, burn, support combustion, or release flammable vapors when subjected to an ignition source.
2. Ignition source: Any equipment, hot-work, and or process which may radiate heat, produce spark or energy which could ignite a combustible or flammable material (e.g. welding, burning, grinding, pre-heat devices, open flame, space heaters, etc.).
3. Fire Watch/Watcher: A trained person assigned to watch for the protection of combustibles / plant equipment from ignition sources, the buildup of combustible materials within an area, or outbreak of fire. The fire watch is to extinguish small fires when possible and to initiate a verbal alarm to the central monitoring room in the event of a fire.
4. Post: Rooms, areas or a specific location required to be monitored by fire watch personnel.

B. Fire Watch Requirements

A Fire Watch is required for:

(Lesson Outline) What you will teach

(How) Visual Aids, Questions

1. Ignition sources (Hot Work) outside of designated areas.
 2. Fire Protection systems or equipment removed from service and it has been determined that a watch is needed during the impairment.

[REDACTED]

 10/18/05
 3. When non-waste handling ~~diesel~~ equipment is used within 100 ft. of the underground waste emplacement face.
- C. Hot Work Permits
1. Hot Work Permits per WP12-FP3002, are for all Hot Work activities.
- D. General Requirements
1. Individuals assigned to perform fire watch activities shall be fire watch trained.
 2. Individuals assigned fire watch in the Radiological Areas shall be Rad Worker trained and shall comply with the appropriate RWP, if required
 3. Maintain exposure ALARA.
 4. Ensure housekeeping requirements are met.
 5. Wear the appropriate PPE as determined by the Cognizant Manager to

E.O. #01 Begins

Review procedure

show video "Fire in the work place"

(Lesson Outline) What you will teach

(How) Visual Aids, Questions

protect against potential hazards such as:		
a. welders flash (eye protection required)		
b. sparks, hot metal, (fire retardant, long sleeves, gloves, etc.)		
E.	The Fire Watch Post	E.O. #02 Begins
1.	Discuss the managers responsibilities prior to the starting of the work activity.	
a.	Initiates the HWP and routes it to Safety and to the FSM/ U/G Facility Engineer.	
b.	Survey the work area in order to assure that all of the conditions of the Permit still apply	
c.	Reviews the job, hazards, and precautions with workers . Obtains their initials on the permit.	
d.	Ensure that the fire watch is present.	
e.	For cutting and welding operations, ensure that all requirements and precautions of WP 12-FP.01, Fire Protection Program are met.	Review procedure

(Lesson Outline) What you will teach

(How) Visual Aids, Questions

2. Explain that prior to activating the post, the Cognizant Manager and the fire watch must verify that:
 - a. A portable fire extinguisher is at the work location.
 - b. A communication device is readily available (Radio, telephone)
3. Explain that the fire watch must also report to the Cognizant Manager for special instructions and pertinent information.
4. Activation of the Post:
 - a. To activate the post, and prior to starting the work activity the fire watch must visually inspect the work area to ensure
 - (1) All requirements of the permit, WP 12-FP.01 and the WIPP safety manual are met.
 - b. Ensure that no unnecessary fire hazards exist.
5. Post Responsibilities:
 - a. Once the post is activated the Fire Watch has the following responsibilities

The HWP is controlled per procedure WP12-FP3002, Hot Work Permit. The fire watch must initial the HWP and follow any special instructions. They are not responsible for the handling of the HWP.

E.O. #03 Begins

(Lesson Outline) What you will teach

(How) Visual Aids, Questions

- (1) Continually inspect the immediate work area / area affected by Fire Protection System impairment for
 - (a) Protection of combustibles
 - (b) Fire Hazards
 - (c) Compliance with housekeeping requirements
- (2) For Hot Work Operations, the inspection will include the opposite side of walls, floors, ceilings etc. as required
- (3) Remove/protect combustibles within 35 feet of the Hot Work
- (4) Watch the person who is performing the Hot Work and be prepared to render assistance as needed to help protect that workers safety.
- (5) If a non- compliance condition is observed, contact the Cognizant Manager. If that person is unavailable then contact the Facility Shift Manager and Industrial Safety. [REDACTED] 10118105
- (6) Post a Fire Watch only and limit quantity of diesel fuel in non-waste equipment within 100 ft. of the face in the U/G.

~~Waste equipment exempt, 37 gal.~~
~~in any single piece of equipment~~
~~and a maximum of 57 gal within~~
~~100 ft. perimeter.~~ [REDACTED] 10118105

(Lesson Outline) What you will teach

(How) Visual Aids, Questions

6. If a fire occurs:
 - a. Attempt to extinguish it if there is no undue risk to you. Report the fire to the CMR using the following report format.
 - b. Using the Radio and/or the phone x8111 or 8457, Report the following:
 - (1) Your Name
 - (2) Location and size of the fire
 - (3) What is burning
 - (4) Your location
 - (5) Injured or trapped personnel
 - (6) The corrective actions that are in progress
 - c. If directed, evacuate the area; otherwise remain in the area and provide information and assistance to the Emergency Response Personnel when they arrive.
 - d. A Fire Watch may only leave the Post when:
 - (1) Relieved by a trained Fire Watch Person
 - (2) The Post is deactivated by the Cognizant Manager after the work is secured, 30 min. cool-down and worker who

E.O. #04 Begins

performed hot-work has left.

(3) The Fire Watches safety is threatened

(4) There is a plant evacuation

7. Deactivation of the Post

a. To deactivate the post, the fire watch shall:

(1) Perform a 30 minute cool-down inspection.

(2) Ensure the HWP is included with the Work Documents and the responsible supervisor is notified and concurs with the decision to secure the post.

F. Coverage for multiple activities

1. Under special conditions the fire watch can provide coverage for more than one activity, providing the following conditions are met:

2. The fire watch shall be responsible for no more than 5 ignition sources/work activities.

3. All of the ignition sources shall be in close proximity and on the same

(Lesson Outline) What you will teach

(How) Visual Aids, Questions

elevation.

4. All of the ignition sources shall be within the line of sight of the fire watch at all times.

G. Fire Types

1. Class A: Ordinary combustibles such as wood, paper, plastic
2. Class B: Flammable liquids/gases such as oil, paint, propane
3. Class C: Energized electrical equipment
4. Class D: Combustible metals such as, magnesium, titanium, zirconium, zinc, sodium, potassium.

H. Extinguishing Agents

1. Water
2. Dry Chemicals
3. Carbon Dioxide

E.O. #05 Begins

- | | |
|--|--|
| <ul style="list-style-type: none">I. Portable Fire Extinguishers<ul style="list-style-type: none">1. Types of extinguishers<ul style="list-style-type: none">a. Waterb. Dry Chemicalc. Multipurpose2. Extinguisher Markings<ul style="list-style-type: none">a. Letters:<ul style="list-style-type: none">(1) A; in a triangle = Ordinary combustibles(2) B; in a square = Flammable Liquids / Gases(3) C; in a circle = Energized electrical equipment(4) D; in a star = Combustible metals(5) K; no designation = Kitchen fires | |
|--|--|

- show video “Portable
extinguishers”

A. Review enabling objectives

- C. Administer exam

- Students will perform this practical exercise one at a time.

- Student will be required to give a simulated fire report to the instructor prior to advancing towards the fire.

- Page 12 of 14

(Lesson Outline) What you will teach

(How) Visual Aids, Questions

- b. Wear your required PPE (gloves; long sleeves; hard hat; safety glasses; safety shoes)
 - c. Never turn your back on the fire prop, and make sure to back away facing the prop once the fire is extinguished.
 - d. Stay low when approaching the prop and watch for change in wind direction.
2. Have each student extinguish the class “A” fire.
- a. Ensure they perform
 - (1) Fire report
 - (2) Test of extinguisher before advancing towards fire.
 - (3) Use of proper technique to extinguish the fire.
 - (a) Aim Nozzle
 - (b) Squeeze handle
 - (c) Sweep back and forth at the base of the fire
 - (4) A retreat / back away from fire using the proper technique.

Student will test extinguisher, advance towards, stop, attempt to extinguish, and back-out when directed to do so by the instructor.

At least **one** additional instructor will be **standing** by with additional extinguishing agent (2 fully charged extinguishers or a charged fire hose) to assist as necessary if the participants safety is placed in jeopardy.

Instructor to perform fire operations in accordance with approved JHA for class A & B fires.

3. Give the students a safety briefing
 - a. Emphasize the dangers of “splashing” liquid fires.
 - b. Remain with the instructor when approaching the fire, follow instructions and wear PPE.
 - c. Never turn your back on the fire prop, back away facing the prop once the fire is extinguished.
 - d. Stay low when approaching the prop and watch for changes in the wind direction.
4. Have each student extinguish the class “B” fire.
 - a. Test the extinguisher prior to advancing
 - b. Position the nozzle in a low and level manner to prevent a liquid splash.
 - c. Use proper technique to extinguish the fire.
 - (1) Aim Nozzle
 - (2) Squeeze handle
 - (3) Sweep back and forth at the base of the fire
 - d. Back away from the prop cautiously.

ATTACHMENT 25
WORK PLAN FOR LIVE FIRE TRAINING

2 PAGES

WORK PLAN
(STIPULATED FINAL ORDER NO. HWB-14-21, PARAGRAPH 31, ATTACHMENT A
NARRATIVE, SECTION 3.2.5.2, ATTACHMENT 25)

1.0 OVERVIEW

Pursuant to the New Mexico Environment Department (**NMED**) Stipulated Final Order No. HWB-14-21 (**Order**), the United States Department of Energy and Nuclear Waste Partnership LLC, hereinafter referred to as the Permittees, are submitting this document to comply with Paragraph 31 of the Order. Section 3.1.5.2 of the Attachment A narrative requires the Permittees to describe the proposed contents of live fire training which may include, but will not necessarily be limited to, some or all of the following: classroom instruction, practical, examination, and refresher.

This work plan addresses the content of the training and the processes that the Permittees will follow to prepare and implement the training. At a minimum, the training will be submitted pursuant to Paragraph 31 of the Order.

2.0 PROPOSED TRAINING REVISIONS

The training will include, but will not necessarily be limited to, some or all of the following listed below.

- Develop and implement “Live Fire Extinguisher” training.
 - The initial course (SAF-502F) will be four (4) hours in length, composed of:
 - One (1) hour of classroom instruction, followed by a written examination.
 - Successful completion of the examination will be followed by a “Live Fire” practical exercise.
 - Formal training program will be developed using the WIPP FIRE EXTINGUISHER simulator. Course material will be developed signed and staged for implementation by May 1, 2016.
 - Once approved, the course will be implemented as an open registry program. This means all WIPP Participants may sign up and participate in the course. It will be provided at least once per calendar quarter, with an increased frequency based on student participation through calendar year 2016.
 - With the formal approval of SAF-502F, the content will be incorporated into initial 40 hour Inexperienced Miner course (SAF-501) replacing FWT-101. FWT-101 will be retained as fire watch training, and will be scheduled as demand requires.
 - Students will participate in the “Live Fire” practical which requires each student to extinguish an individual fire, to observe other class members as they put out their fire, and participate in a performance critique.
 - The course will be a Pre-requisite class for maintaining Underground/un-escorted access during the biennial years.
 - Develop and implement “Live Fire Extinguisher” refresher training.

ATTACHMENT 25: LIVE FIRE TRAINING WORK PLAN

- SAF-502FR will be comprised of a computer based training (CBT) encompassing a fundamental overview of the initial course objectives followed by a knowledge verification. The CBT will be a prerequisite requirement, which must be performed before the candidate can participate in the practical exercise as described above.
- Offerings will be once per month, in conjunction with each offering of Underground Refresher (SAF-502).
- To ensure appropriate tracking, Technical Training will establish a Commitment Tracking Action to trigger initiation of the class in the Biennial cycle.

3.0 SCHEDULE

By May 1, 2016, the Permittees anticipate finalizing “Live Fire Extinguisher” training and by September 30, 2017 the Permittees anticipate finalizing the “Live Fire Extinguisher” refresher training.

Activity	Anticipated Date
Submit Work Plan	March 22, 2016
NMED Approves Work Plan	April 22, 2016
Develop and implement “Live Fire Extinguisher” training	May 1, 2016
Submit “Live Fire Extinguisher” training documentation to NMED	June 1, 2016
Develop and implement “Live Fire Extinguisher” refresher training	September 30, 2017
Submit “Live Fire Extinguisher” refresher training documentation to NMED	October 30, 2017

ATTACHMENT 26
WORK PLAN FOR MODIFICATION TO INCORPORATE LIVE FIRE
TRAINING INTO THE PERMIT

2 PAGES

WORK PLAN
(STIPULATED FINAL ORDER NO. HWB-14-21, PARAGRAPH 31, ATTACHMENT A
NARRATIVE, SECTION 3.2.5.2, ATTACHMENT 26)

1.0 OVERVIEW

Pursuant to the New Mexico Environment Department (**NMED**) Stipulated Final Order No. HWB-14-21 (**Order**), the United States Department of Energy and Nuclear Waste Partnership LLC, hereinafter referred to as the Permittees, are submitting this document to comply with Paragraph 31 of the Order. Section 3.1.5.2 of the Attachment A narrative requires the Permittees to describe the proposed contents of two Class 1 Permit Modification Notifications (**PMNs**) to include, but not be limited to, updating the Waste Isolation Pilot Plant Hazardous Waste Facility Permit (**Permit**) language concerning Inexperienced Miner Training (SAF-501) and Mine Safety-Experienced Miner Refresher (SAF-502) to address *Live Fire Extinguisher Training* and its annual refresher.

This work plan addresses the content of the PMNs and the process that the Permittees will follow to prepare and submit the PMNs. At a minimum, the PMNs will be submitted pursuant to Paragraph 31 of the Order and Permit Part 1, Section 1.3.1 and address the following requirements:

- They will specify the changes being made to the Permit.
- They will identify that they are Class 1 modifications.
- They will explain why the modifications are needed.
- They will contain a signed certification statement per 20.4.1.900 NMAC (incorporating 40 CFR 270.11(d)(1) and 40 CFR 270.30(k)).

The Permittees anticipate the modifications will be classified as Class 1 according to 40 CFR 270.42 Appendix I Item B5b because they do not affect the type or decrease the amount of training personnel receive at the WIPP facility. The type of training falls into the preparedness and prevention category and is an increase in the amount and detail provided in such training.

2.0 PROPOSED PERMIT REVISIONS

The PMNs will include, but will not necessarily be limited to, the modifications listed below.

- Update language pertaining to training
 - Update Attachment F1 to add SAF-502FR, *Live Fire Extinguisher Refresher Training*, to applicable job descriptions
 - Update Attachment F2, SAF-501, *Inexperienced Miner Training* to include course content of SAF-502F, *Live Fire Extinguisher Training*, replacing FTW-101.
 - Update Attachment F2 to include SAF-501FR, *Live Fire Extinguisher Refresher Training*

ATTACHMENT 26: UPDATE LIVE FIRE TRAINING PERMIT MODIFICATION WORK PLAN

- Update Attachment F2 to include SAF-502F, *Live Fire Extinguisher Training*, as an additional preparedness and prevention training course.
- Update Permit language to explain that SAF-502F and SAF-502FR are made available to the general employee as an additional preparedness and prevention measure, but they are not mandatory.

3.0 SCHEDULE

The Permittees shall submit a Class 1 PMN no later than 7 calendar days after each training course has been implemented.

SAF-501F, *Live Fire Extinguisher Training*

Activity	Anticipated Date
Submit Work Plan	March 22, 2016
NMED Approves Work Plan	April 22, 2016
Implement SAF-502F, <i>Live Fire Extinguisher Training</i> , and incorporate course content of SAF-502F into SAF-501, <i>Inexperienced Miner Training</i>	May 1, 2016
Submit PMN to NMED	May 6, 2016

SAF-502FR, *Live Fire Extinguisher Refresher Training*

Activity	Anticipated Date
Submit Work Plan	March 22, 2016
NMED Approves Work Plan	April 22, 2016
Implement SAF-502FR, <i>Live Fire Extinguisher Refresher Training</i>	September 30, 2017
Submit PMN to NMED	October 6, 2017

ATTACHMENT 27
DESCRIPTION OF REVISED SELF-RESCUER TRAINING AND
SUMMARY OF THE NUMBER OF TIMES THE TRAINING HAS BEEN
PROVIDED AND NUMBER OF PERSONNEL TRAINED IN THE LAST 12
MONTHS

141 PAGES

ATTACHMENT 27

Violation 3, Count 1b deals with improved training for underground workers. Attachment A of the Settlement Agreement requires the Respondents to provide a description of revised training and summarize number of times the training has been provided and number of personnel trained in the last 12 months.

This training was modified after the February 2014 events to emphasize the following as the result of the AIB Salt Haul Truck Fire Report JON 10, Action 1 which states, "Identify fire-related personal safety equipment required for the underground."

Specific to fire protection, fire-related personal safety equipment required for the underground:

- Self-rescuer, MSA W-65, carried by each person
- Self-Contained Self Rescuers, Ocenco EBA 6.5 Escape Breathing Apparatus, immediately available in caches
- Portable fire extinguishers strategically placed and on every vehicle in the mine

Additional safety equipment required for personnel in the underground:

- Safety glasses and/or goggles
- Hard hat
- Safety footwear
- Hearing protection (ear plugs and/or ear muffs) in and around specified areas or equipment
- High-visibility outer clothing or vest

The Respondents have attached the course developed by the Training Department.

Number of classroom sessions offered between 9/1/14 and 9/1/15:

SAF 501 12 classes

SAF 502 49 classes

Number of personnel trained between 9/1/14 and 9/1/15:

SAF 501 143 students

SAF 502 579 students

Attached are the following documents:

Lesson Plan for SAF 501 Inexperienced Miner

Lesson Plan for SAF 502 Annual Underground Refresher

Attachment 1 – Lesson Plan Cover Page

LESSON PLAN COVER PAGE			
Course Code: <i>SAF-501</i>	Revision: <i>6</i>	Course Length: <i>40</i>	Date: <i>2-19-15</i>
Course Title: <i>Inexperienced Miner Training</i>			
Lesson: <i>Included in Lesson Plan</i>			
Author: <i>Glenn Schroede</i>			
Training Aids: <i>Lesson Plan</i> <i>Student Handouts</i> <i>Fire Ext. Video</i> <i>U/G maps</i> <i>U/G Procedures</i>			
Terminal Objective: <i>See Lesson Plan</i>			
Enabling Objectives: <i>See Lesson Plan</i>			
References: <i>30 CFR Part 48</i> <i>WPD4-AD 3013</i> <i>DDCD-0001</i> <i>WP12-FP 3002</i> <i>WP12-FP 01</i>			
Commitments:			

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

I INTRODUCTION

A. Instructor

1. Name
2. Organization
3. Qualifications

B. Students

1. Name
2. Employer
3. Job assignment

C. Course

1. Title
2. Subject
3. Terminal Objective

Upon completion of this course, the student will meet the requirements of 30 CFR Part 48.5 - Training of New Miners.

Mastery of the terminal objective will be demonstrated by scoring 80% or better on the closed-book examination, and participation in all practical exercises.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

D. Enabling Objectives

The student will be able to:

- 1.1 State the required length of training as established by federal law for underground access.
- 1.2 State the similarities of the WIPP mining activities compared to that of other local mines.

II PRESENTATION

A. Paperwork

1. Attendance sheet
2. MSHA form
3. Course/instructor evaluation form

Pass out attendance form. Give instructions to class.

TP-1-01

Pass out evaluation form. Give brief explanation of the form purpose.

B. Course attendance

EO #1.1

1. Required attendance
 - a. 30 CFR Part 48
 - b. 40 hours of training

This is where the requirements are defined.

2. Special instructions
 - a. Class schedule
 - b. Tardy arrivals
 - c. Field activities

Underground tour and hands-on Ground Control

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

- (1) Required dress
 - (2) Rules
 - (3) Location
 - d. Facility locations
 - (1) Rest rooms
 - (2) Cafeteria/Vending machines
- C. Overview of WIPP underground operations
 - 1. Similarity to other mining activities
 - a. Potash mining
 - (1) Non-metal ore removal
 - (2) Tailings
 - 2. Differences to other mining activities
 - a. Coal mining
 - (1) Rock dust
 - (a) Health hazards
 - (2) Mine gases
 - (a) Explosion dangers

Steel-toed shoes/boots, safety glasses with side shields, hardhat, and reflective clothing as needed.
Stay with escort
Announce where and when to meet for U/G tour

These will be dictated by location of class.

EO #1.2

Metal/non-metal mine (Category IV)

Use of continuous miners (mining machines) salt - no true health hazard

Our tailings are located on the North side of the WIPP site.

Category I (Gassy, combustible)

Black Lung (Emphasis on silica dust)

Build-up of explosive gases (or toxic)

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

- b. WIPP mining
 - (1) Back height
 - (2) Non production mining
 - (3) Safety importance
 - (4) Written procedures
 - (5) Documented qualifications and certification program

Universally high back

Our product is mined rooms

Safety is the **NUMBERONE** priority

Define scope and application

Administered by Training

III. SUMMARY

- A. Review enabling objectives

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

I. INTRODUCTION

- A. Subject
- B. Enabling Objectives

The student will be able to

- 2.1 Describe the reason behind the establishment of the Act of 1977.
- 2.2 Discuss how the Act of 1977 pertains to WIPP.

II. PRESENTATION

- A. Creation of the Federal Mine Safety and Health Act of 1977

- 1. Congressional act

- a. Public law 91-173
 - b. Amended Public law 95-164

- B. Purpose

- 1. Reflect changes to Federal Coal Mine Health and Safety Act of 1969.
- 2. Insure the health and safety of miners.
- 3. Reduction of serious injury and death to miners.

Federal Coal Mine Health and Safety Act of 1969

Federal Mine Safety and Health Act of 1977

EO #2.1

Extended now to metal/non-metal mines.

It gave the miner rights to a safe work place.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

4. Guarantee healthful conditions and practices in the mining industry.
5. Regulate mining operators for certain job protections due to occupational illness or injury.
- C. Coverage under the Act of 1977
 1. Mandatory safety and health standards.
 - a. Uniform regulations across the industry.
 - b. Penalties for violations by mine operators.
 2. Inspection rights
 - a. Federal inspection access
 - b. State inspection access
 3. Accident investigation
 - a. Federal
 - b. State
 4. Recordkeeping
 - a. Miners health

The rise in injury/death called for change.

This is done through safety inspections.

Mines now must address how they will deal with health hazards in the workplace.

Coal mine standards will no longer be used in the metal/non-metal industry.

These are enforceable penalties by money fees and closure of mines.

Guaranteed by The Act.

MSHA Representation is mandatory.
Possibly the Sheriffs Office.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

- b. Inspection finding
 - c. Violation tracking
- 5. Guidelines for correcting dangerous conditions.
 - a. Methods
 - b. Time elements
 - c. Miners pay protection due to corrective action requirements
- 6. Mandatory posting of violations and warnings
 - a. Public view
 - b. All notices
- 7. Required training
 - a. Right of miners
 - b. Health and safety
 - c. Emergency actions

Inspections (MSHA) must be posted. This is Right to Know information.

Both of these will be agreed upon during inspection closeout.

When posting violations, they must be in a conspicuous location.

Miners shall be trained to the hazards encountered in the mine.

Safety and health standards shall be covered.

Evacuation and escape routes.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

8. How the Act pertains to WIPP
 - a. WIPP is governed by the Land Withdrawal Act of 1992 which requires compliance with MSHA.

EO #2.2

III. SUMMARY

Review Enabling Objectives

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

I. INTRODUCTION

A. Subject

B. Enabling Objectives

The student will be able to

- 3.1 Define the term miners representative.
- 3.2 State who is the miners representative for the WIPP site.
- 3.3 Describe the limitations and protection granted to a miners representative at WIPP.

II. PRESENTATION

A. Definition

- 1. Any employee who is elected by two or more fellow miners to represent those miners concerning safety and health issues relating to their mine.

B. The miners representative under the Act of 1977

- 1. Reason for establishment.
 - a. Rising injury and fatality rate.

EO 3.1

NOTE: Make sure there are copies of 30 CFR part 57 and The Act available in the classroom.

To represent fellow miners.
Hourly employees part of process.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

2 Method of selection in other mining industries.

C. The miners representative system at WIPP

1. All badged employees with unescorted access to the underground are representatives of the immediate work area.
2. Comparison between WIPP and other mining systems.
3. Limitations of the general employee while acting as a miners representative are to their immediate work area

D. Protection of the employee

1. Rights under the Act.
2. Determination of coverage under the Act.
3. Exemption from disciplinary action while participating as a miners representative.

E. Need for employee participation in inspection of the site.

1. Every-day contact with work place.
2. Involvement with corrective actions.

Miners representatives are elected by 2 or more fellow miners in that mine to represent them.

E.O. 3.2

Local mines elect a representative.

EO 3.3

NOTE: Describe the limitations on employees during inspection of the mine - to the immediate work area.

Guaranteed same pay.

Must be acting in good faith to correct a safety-related issue.

You are protected from any disciplinary actions when pointing out safety-related issues.

Your eyes and ears are there every day.

It is your work area. If you can't fix it yourself, start the paperwork to get it fixed.

Remember, never, never, never leave an unsafe area unattended. If necessary, retreat to a safe location, secure the area to prevent entry,

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

III. SUMMARY

Review enabling objectives

and wait until someone comes along, then have them make the necessary calls.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

I. INTRODUCTION

- A. Subject
- B. Enabling Objectives

The student will be able to

- 4.1 Describe the major type of credible hazards which could occur within the underground facility.
- 4.2 State who has a responsibility to report hazards.
- 4.3 Describe the methods used to report hazards when they are identified.
- 4.4 State the differences between general safety issues and those involving imminent danger.

II. PRESENTATION

- A. Hazards
 - 1. Electrical
 - 2. Geological
 - 3. Environmental
 - 4. Ignitable/Combustible

E.O. 4.1

Substations, switch racks, cables

Related to ground control - cracks, separations, etc.

Oxygen deficiency, toxic or explosive gases, etc.

Diesel fuels, pallets

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

5. Radiological and VOC's
- B. Reporting hazards
1. All personnel shall be responsible for hazard reporting.
 - a. Mine operator
 - (1) Legal liability
 - (2) Moral
 - (3) Genuine interest well-being of employees
 - b. Supervisors
 - (1) Legal liability
 - (2) Genuine interest well-being of employees
 - c. Employee
 - (1) May have some legal liability
 - (2) Moral
 - (3) Protection of one's self
 - (4) Genuine interest in fellow workers

Postings. Proper PPE and Training

E.O. 4.2

By The Act and Federal Regulations (30 CFR), mine operators shall provide a place of employment free of hazards. If a hazard cannot be controlled by engineering it out, or administratively controlling the hazard, then it must be identified and addressed in the Hazards section of the training and the employees shall be informed of precautions to be considered.

Supervisors are required to inspect working areas for hazards including: air quality, ground control, presence of gases, general working conditions

Workplace inspections prior to work commencing, and as conditions warrant during the work shift.

Always check area – don't become complacent.

Check where and what your partner is doing - Is it safe?

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

C. Method of reporting is verbal

1. Potential minor hazard

- a. Immediate supervisor/Rover
- b. Department manager
- c. Staff manager
- d. Safety representative
- e. Assistant General Manager
- f. General Manager
- g. DOE/MSHA

2. Hazards involving possible imminent dangers vs. general safety issues.

- a. Imminent danger is a situation where someone could be injured or killed.
- b. General safety issues are those which need repair but do not pose any danger.

D. Disciplinary actions and the employee

- 1. Employees reporting hazardous conditions:
No disciplinary action may be brought on any employee reporting a safety related issue.

E. Need for employee involvement

- 1. Rapid identification of hazards.
- 2. Direct hands-on approach to action required.

E.O. 4.3

Called the Chain of Command

Rovers are there for those individuals whose supervisor is not underground at the time.

E.O. 4.4

Back off to a safe location, secure the area, and notify CMR Immediately and Supervisor/Manager.

Never leave an unsafe area unattended, unless the area cannot be entered - (barriers placed or area secured in some way).

We do not use safety as an excuse not to work. However, if there is any doubt, back away and make the notifications

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

III. SUMMARY

Review enabling objectives

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS,
ETC.)

I. INTRODUCTION

A Subject

B. Enabling Objectives

The student will be able to

- 5.1 State the MSA W-65 inspection procedure for the general employee.
- 5.2 State the mine operator's inspection requirements for the MSA W-65.
- 5.3 State the primary features of the MSA W-65.
- 5.4 Describe how the W-65 self-rescuer operates.
- 5.5 Demonstrate the application of the W-65 self-rescuer.
- 5.6 State when the W-65 and the Ocenco EBA 6.5 SCSR is to be used.
- 5.7 Describe the operating instructions for escape using the EBA 6.5.
- 5.8 Explain how the EBA 6.5 operates.
- 5.9 State the inspection requirements for the EBA 6.5.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS,

ETC.)

- 5.10 Explain the procedure for operation at rest for the EBA 6.5
- 5.11 Perform the donning procedure of the EBA 6.5.
- 5.12 State the locations of the SCSR caches in the underground.
- 5.13 State the procedure number of the WIPP Respiratory Protection Program.

II. PRESENTATION

A. Purpose

- 1. Mine egress only
- 2. Single use

B. Service life

- 1. Dictated by Manufacturer
- 2. Until seal broken

C. Personnel inspection

- 1. Case separated or damaged
- 2. Quarterly color coding

You would never put one on and go back to fight a fire.

Not refillable/rechargeable

MSA W-65 is 15 yr shelf/ 10 yr service

Once the seal is broken, the unit will last approximately one hour.

E.O. 5.1

If the case is damaged, seal broken or separated, the unit is no good.

Refer to the quarterly color coding located in the lamproom

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS,
ETC.)

D. Mine operator quarterly inspection

1. Case Inspection: Separated or damaged
2. Apply color coding
3. Service dates and weight

E.O. 5.2

Refer to Procedure WP 12-109

Expiration dates are engraved into the bottom of the case.

E. The self-rescuer

1. Features
 - a. Outer case
 - b. Two pieces
2. The assembly
 - a. Main case
 - b. Drying agent
 - c. Catalyst
 - d. Chin rest
 - e. Mouthpiece
 - f. Head strap
 - g. Nose clip
 - h. Expiratory valve

NOTE: Display self-rescuer to class while discussing features.

E.O. 5.3

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS,
ETC.)

F. Operation

1. Drying effect
2. Chemical reaction
 - a. Converts carbon monoxide to carbon dioxide.
 - b. Heat
3. Gas conversion
 - a. WIPP certification for carbon monoxide only.
 - b. Does not provide oxygen

G. Practical application

1. MSA W-65

H. When to use the Self-Rescuer, (W-65 / EBA 6.5)

1. The W-65 / EBA 6.5 should be used immediately at the first indication of a fire or explosion even though no smoke is visible.

E.O. 5.4

Removes some of the moisture in the air.

NOTE: Primary gas is intended to be carbon monoxide.

This chemical reaction will make the self-rescuer HOT.

If we had other gases present, we would use the respiratory equipment best suited for that gas.

E.O. 5.5

Each trainee must demonstrate the proper application of the self-rescuer

E.O. 5.6

Carbon Monoxide can be present without smoke.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS,

ETC.)

I. Describe the operating instructions for escape using the EBA 6.5

E.O. 5.7

1. Safe operation of the EBA 6.5 requires an understanding of the twelve operating steps as follows.
 - a. Pull the latch release rod.
 - b. Lift and pull each latch ring to release bands
 - c. Remove the cover from base. Grab the two handle straps and pull the case apart, discard the cover and rubber seal.
 - d. Open the oxygen valve fully counterclockwise, in the direction of the arrow.
 - e. Place neck strap over head.
 - f. Pull mouth piece toward face. The mouthpiece plug will automatically be removed from the mouthpiece. Insert mouthpiece and breath through the mouth only. Use head strap for additional support of the mouthpiece, if required.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS,

ETC.)

- g. Apply nose clips. Do not attempt to inhale or exhale through your nose.
- h. Purge the bag with oxygen to eliminate nitrogen: exhale, hold breath and deflate bag by pressing on the bag. Inhale deeply through the mouth piece, then breath normally (oxygen will be supplied from the demand regulator).
- i. Adjust the neck strap.
- j. Wrap the waist harness around the waist, clip and adjust for fit by pulling on the strap end.
- k. Place goggles over eyes to prevent irritation from smoke or other irritants.
- l. ESCAPE

J. Explain how the EBA 6.5 operates.

E.O. 5.8

- 1. The Ocenco EBA 6.5 is a closed circuit self contained self rescuer breathing apparatus. Its operation is completely independent of the surrounding atmosphere. Once it is properly donned the self rescuer will assist a person escaping from an area containing smoke, toxic gases, or an oxygen deficient atmosphere.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS,
ETC.)

2.	The operating life of the unit for escape is dependent on the demands of the user. This apparatus is approved by NIOSH/ MSHA as a 60 minute SCSR, based on the fact that the equipment, when tested on average sized men, performing moderate to heavy work, lasted 60 minutes or more.	90 to 110 minutes is common
3.	The operating life of the unit is dependent on the following:	
a.	The degree of physical activity.	How hard the user must work
b.	The physical condition of the user.	
c.	The user's breathing rate.	
d.	The degree of training or experience with this or similar equipment.	Which can be considerably increased by excitement, fear or other emotional factors.
e.	The condition of the apparatus.	
K.	State the inspection requirements for the EBA 6.5.	E.O. 5.9
1.	Check the pressure gauge reading. Remove from service if the gauge reading is below 2500psi at 70 degrees F (21degrees C)	Do not open the unit to inspect, observe thru the clear case.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS,

ETC.)

2. Inspect the latch seals. Remove from service if no factory installed seals are attached. If one of the two latch seals is removed, one seal may be replaced with a green seal available from Ocenco. One of the original factory installed latch seals must be present to permit the unit to remain in service.
3. Inspect the unit for signs of high force impacts. Remove the unit from service if signs of strong impact are evident.
4. Observe if the yellow mouthpiece plug is in place. Remove from service if the mouthpiece plug is displaced.

L. Explain the procedure for operation at rest for the EBA 6.5.

E.O. 5.10

1. The EBA 6.5 has a feature that will extend the duration of the self rescuer. This feature obviously extends the user's life should an escape be delayed. It is important to emphasize escape and that these procedures should only be used during prolonged rest. (I.e. in excess of ten minutes).

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS,

ETC.)

- a. Purge bag with oxygen to eliminate nitrogen: Exhale, hold your breath and deflate bag by pressing on the bag. Inhale deeply through the mouthpiece then breath normally. Repeat this step 2 more times.
 - b. When the bag fills with oxygen close the valve (turn clockwise).
 - c. When the bag becomes low, open oxygen valve (counterclockwise) to fill the bag.
 - d. Repeat steps 2 and 3 until no longer at rest.
2. Once the EBA 6.5 is operating and the user is at rest and comfortable, the bag will fill with breathable gas and would normally vent to the atmosphere through the relief valve causing loss of valuable gas and shortened duration. By opening and closing the oxygen valve as needed, the user can prevent the loss of gas, thereby increasing the duration of the SCSR. Using this procedure will extend the use of the EBA 6.5 to five to eight hours depending on the user's ability to conserve oxygen.

When the user is sitting, resting and relaxed the life support will continue for about 5 to 8 hours depending on the person and his/her ability to use the EBA 6.5 to conserve oxygen.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS,
ETC.)

M. Perform the donning procedure of the EBA 6.5.

1. Don the W-65 Training Unit.
2. Don the EBA 6.5

N. State the locations of the SCSR caches in the underground

1. Intake drift, mining panel, near the neck or RM1. 18 SCSRs will be located in boxes in this area. The approximate distance from this point to the face of RM7, near the exhaust drift is 1160 ft. At a walking speed of 300 ft/min, it would take the miners 4 minutes to reach the cache.
2. Intake drift, waste-handling panel, near the neck or RM1. 20 SCSRs will be located in boxes in this area. The approximate distance from this point to the face of RM7, near the exhaust regulator is 1320 ft. At a walking speed of 300 ft/min, it would take the waste handlers 4.5 minutes to reach the cache.
3. A third cache would be located at S2520/W30. This cache would house 30 units in a steel cabinet.

E.O 5.11 Show DVD

The W-65 trainer is used to simulate an MSA W-65. This will give the student a sense of realism. The W-65 trainer will be worn and transferred from to an SCSR.

All personnel will don an SCSR

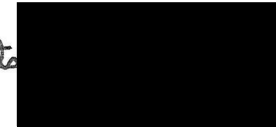
E.O. 5.12

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS,
ETC.)

4. A fourth cache would be located at S2520/W170. This cache would house 20 one-hour units.
5. The fifth cache would be located at S1300/W30. This cache would house 30 one-hour units.
6. The sixth cache would be located at S1300/W170. This cache would house 20 one-hour units.
7. The seventh cache would be located at S90/W170. This cache would house 20 one-hour units.
8. The eighth cache would be located at S1600/E140. This cache would house 48 one-hour units.
9. The ninth cache would be located at S1600/E300. This cache would house 48 one-hour units.
10. The tenth cache would be located at N250/E250. This cache would house 20 one-hour units.
11. The eleventh cache would be located at S20/E300. This cache would house 20 one-hour units.

$$S400/W170 = 20 \text{ units}$$



LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS,

ETC.)

12. The twelveth cache would be located at N460/E140. This cache would house 27 one-hour units.
13. The thirteenth cache would be located at N780/E0. This cache would house 27 one-hour units.
14. The fourteenth cache would be located at S90/W700. This cache would house 4 one-hour units.
15. The remaining 51 units will be used for the bottom landers, U/G Services, and on the tour carts.
16. Strobe lights will be permanently attached at the cache location. These lights will be part on 24 hours a day 7 days a week. The lights will be green in color. Underground Services will perform a weekly check to ensure the lights are functioning.
17. Signs leading to the cache locations will be a reflective green background with a white reflective arrow and white reflective lettering to read To SCSR Cache. The signs will be posted along the ribs of the drifts.

Lights are 24/7 with battery backup

Drawing # 74-G-001-W Shows the location of all caches.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS,

ETC.)

O. The Respiratory Protection Program

1. Procedure WP12 IH-02 Industrial Hygiene Manual
2. The only type of mask that may be worn without complying with this procedure is the 3M 8500 Dust Mask

E.O. 5.13

Rated for nuisance dust only.

P. Discuss Lessons Learned on 4/6
Findings SRs/SCSRs
19.10.15

III. SUMMARY

Review enabling objectives

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

I. INTRODUCTION

A. Enabling Objectives

The student will be able to:

6.1 State the function of the Underground Controller's Board.

6.2 State the minimum personnel protective and safety equipment required for underground access.

6.3 State the personnel requirements for signing in and out of the mine.

6.4 State the purpose of a brass tag.

II. PRESENTATION

A. Access requirements

1. Miner training – initial and refresher

a. Federal Law

b. State Law

c. WIPP Policy

30 CFR Part 48 states the requirements for underground access is refresher training every 12 months.

N.M. Bureau of mines has adopted the regulations from 30 CFR Part 48

WIPP requires Part 48 training

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

B. Underground Controller

1. The Underground Controller will issue Underground Access Permits (UAP) on a daily and monthly basis.
2. The Controller's Board is an information system to inform personnel going underground where the accessible and non-accessible areas are.
3. A color coding system is used to identify these areas.
 - a. White areas
 - (1) Restriction Class 1
 - (2) General Access areas of the underground, including shafts and shaft stations.
 - (3) No requirements for entry (UAP only).
 - b. Blue areas
 - (1) Safety work or special projects
 - (2) Restriction class II
 - (3) To enter these areas you must have it marked on the UAP.
 - (4) These areas are specific.
 - (5) Must have permission of the

cognizant person named on the barrier.

E.O. 6.1

Show UAP

Explain these areas using the map

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

- c. Red areas
 - (1) These are barricaded areas to prevent entry.
- 4. Specific information can be found in WP04-AD3013 – underground Access Procedure.
- C. Lamp room / underground controller
 - 1. Self- Rescuer color code
 - 2. Proper safety equipment
 - a. Clear safety glasses with side shields.
 - b. Hard hat with lamp bracket
 - c. Safety boots or shoes
 - d. Self- rescuer
 - e. Miner's lamp
 - f. Underground access permit
 - 3. Noise
 - a. The hazards with exposure to noise in high levels is hearing loss. This is something that each person has responsibility to address each time high levels of noise are encountered

* NOTE Refer to AD3013 on escorting information and requirements

Check the color code, ensure it is current

E.O. 6.2

Explain the C, G, and E hardhats

Reflective Clothing as appropriate required 6.19.15

* this must be discussed in class

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

- b. WIPP is a quiet plant compared to industry standards. The purpose of the WIPP hearing protection program is to prevent and reduce the progression of occupational noise induced hearing loss among the employees.
- c. Federal Regulations, 29 CFR 1910.95 Occupational Noise Exposure and 30 CFR Part 62 Occupational Noise Exposure relate to worker noise exposure. A copy can be found in Industrial Safety and Hygiene or at various locations across the site. Both standards require employees to have hearing conservation when the worker 8 hour time weighted average exposures might exceed 85dBA. Where the 8 hour time weighted average could be greater than 105 dBA, double hearing protection is required. The standards require that the hearing conservation program is to include methods for monitoring, audiometric exams, training, record keeping and notification of workers.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

- d. Most employees working at WIPP will not require hearing protection as part of their normal duties. Certain locations or equipment require the use of hearing protection. On some occasions, with specific pieces of equipment in the mine, dual hearing protection (ear plugs and ear muffs) may be required. Hearing protection is usually provided near the work area. WIPP has the responsibility of maintaining a safe work place. This is done through identification of potential noise exposure, reduction of noise exposure by engineering means where possible and providing hearing protection where needed. It is the employee's responsibility to wear proper hearing protection where required. They should notify their manager of any changes in the noise exposure at the facility. Any questions or concerns can be directed to the Industrial Safety and Hygiene Department.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

- e. The site conducts noise monitoring, as needed, throughout the facility. The monitoring may be of an area with the use of a sound level meter or personnel using a noise dosimeter which an employee wears during their shift. Both of these methods are used to determine; (1) who should be included in the hearing conservation program and (2) what type of hearing protection is required. Medical evaluations, audiometric testing, and training on the care and use of hearing protection are also furnished.
- f. **Audiometric Testing** To assess the effectiveness of a hearing conservation program, and to determine the need for corrective action. WIPP has its own testing booth and equipment. If you work in an area with high noise levels, you may be required to have any annual hearing test. During the test the employee will be seated in a sound proof booth while wearing a pair of earphones. As different tones are heard through the earphones the employee is to respond with a hand held push button. The test will determine your hearing ability at several different frequencies.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

- g. Examples of potential effects on workers with exposures exceeding 100 decibels include:
 - Chronic fatigue
 - Digestive disorders
 - Loss of equilibrium
 - A gagging sensation
 - Reduced vision
 - Changes in breathing
 - Vibration to the chest
 - Temporary or permanent hearing loss
- h. There are several types of hearing protection at WIPP. The following list provides the advantages and disadvantages of each type.
- i. Rubber ear plugs: easy to carry and reusable. This type of protection must be cleaned after each use. To use, clean hands first, insert into ear canal while holding outer ear up and away from head.
- j. Foam ear plugs: single use only, disposable, eliminating the need for cleaning. Highest attenuation protection. To use, clean hands first, roll into a cylindrical shape, insert in the ear canal while holding outer ear up and away from head.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

- k. Ear Muffs: offers the least amount of protection. Sealing surfaces can become distorted over time and repeated use. Potential hygiene problems if not cleaned and stored correctly. In addition safety glasses interfere with the sealing surface. Ear muffs may be worn in different positions, ie: connecting band worn over the head, under the chin or behind the head. Each position has a different Noise Reduction Rating (NRR).
- l. Attenuation Factors: Noise Reduction Rating listed means that the noise your ears are exposed to (in decibels) will be reduced by that number below the current noise level of the area or environment. However, the actual noise reduction obtained in the work place depends on the size and fit of the protector and the users motivation, movement and training. OSHA recommends that you derate the published by seven (7). Example: Rubber ear plugs with an NRR of 26 are down rated to 19. $26-7=19$. Foam ear plugs with an NRR of 33 are down rated to 26. $33-7=26$. Ear muffs are also down rated by the number 7, but the position must be considered and the down rating is from the position worn and associated NRR.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

4. Sign-in procedure
 - a. Log-in authority
 - (1) Responsibility
 - (2) Unauthorized sign-in
5. Brass Tag
 - a. After sign-in, you will receive a brass tag.
 - b. Purpose of the brass is for accountability.
 - (1) Underground personnel numbers.
 - (2) Events
 - (3) Identification
6. Consequences of improper actions
 - a. Disciplinary actions up to and including termination.

E.O. 6.3

Last thing done before going underground and first thing done when returning to the surface.

You sign in for yourself ONLY. Each individual is responsible for themselves.

E.O. 6.4

A running log will be kept of the number of people underground throughout the day.

If we have an unexpected event or drill, this is how we know who is underground.

If the underground is evacuated, you will be met on the surface by an individual collecting brass tags.

The Tag serves two purposes, accountability and identification of bodies.

In other mines identification of bodies is a major factor. When you complete this course, you may go into any mine in the USA after completing that mine's specific on site 8 hour training course.*

III. SUMMARY

A Review enabling objectives

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

I. INTRODUCTION

- A. Subject
- B. Enabling Objectives

The student will be able to

- 7.1 State the types of transportation equipment used at the WIPP.
- 7.2 State who directs the loading and unloading of the conveyance.

II. PRESENTATION

- A. General
 - 1. Surface (typical)
 - a. Haulage trucks
 - b. Electric carts
 - c. Highway vehicles
 - 2. Underground
 - a. Conveyance
 - b. Electric carts
 - c. Haulage trucks/LHDs

EO #7.1

Travel in/out of North Access gate.

Cart authorization through the Technical Training Department.

Maximum speed limit is 10 mph on site.

Transports you to the underground. Not an elevator.

Cart authorization from Technical Training is good for surface and underground.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

- d. Fork lift trucks
- B. Hazards
 - 1. Size of vehicles/blind spots
 - 2. Speed of travel
 - 3. Terrain
 - 4. Right of way
- C. Hazard preventive equipment
 - 1. Lighting
 - a. Head lights
 - b. Tail lights
 - c. Beacons
 - 2. Alarms
 - a. Start-up alarms
 - b. Back-up alarms
 - c. Horns

Haul trucks, fork lifts, transporters, etc. require a Qualification Card.

Speed limit underground is as fast as conditions safely permit
Hills, bumps, etc.

Mobile equipment has the right-of-way.

Head lights turned on while vehicle is in operation.

Fork lifts, transporters, etc.

Better known as all clear signal.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

D. Personnel warning systems

1. Voice contact
2. Lamp signals

Lamp signals will be covered in communications module.

E. Interaction with pedestrians

1. Normal travel patterns
 - a. Vehicles
 - b. Pedestrians
2. Variations
 - a. Vehicles
 - b. Pedestrians

Haul routes are noted on Underground Controllers board.

Vehicles have the right of way

Make sure the operator sees you

If routes change, you should be notified of the new routes.

Always leave your cap lamp on so the equipment operators can see you.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

F. Transportation to and from the underground

1. Conveyance

- a. Loading
- b. Man trips
- c. Material handling
- d. Unloading
 - (1) Personnel
 - (2) Materials

EO #7.2

Directed by Shaft Tenders.

Schedule located at Underground Controllers area.

All materials transported to and from underground tagged with a Materials Disposition Tag.

Wait for Shaft Tender to open/close gates.

III. SUMMARY

Review enabling objectives

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

I. INTRODUCTION

A. Subject

B. Enabling Objectives

The student will be able to

- 8.1 Describe and demonstrate the proper lamp signals used by personnel underground.
- 8.2 State the types of communication systems available underground at WIPP.

II. PRESENTATION

A. WIPP communications systems overview

1. Personnel

- a. Lamp signals
- b. Hand signals

2. Artificial

- a. Commercial telephone
- b. Mine phone system

E.O. 8.1

Demonstrate signals as describing:

- circular motion - come ahead
- side-to-side – stop
- up and down - back up

We use the standard set of Crane Signals.

EO #8.2

GTE telephones

General communications

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

- c. Public address system
 - d. Alarms systems
 - (1) Fire/evacuation alarm
 - (2) Gong tone
- B. Appropriate uses
 - 1. Lamp signal effectiveness
 - a. Transportation interaction
 - b. May be used from moderate distances.
 - c. Limited translation
 - 2. Hand signal effectiveness
 - a. Use mainly for close personnel use.
 - b. Easily misunderstood
- C. Artificial communications
 - 1. Commercial telephone
 - a. Private communication device
 - b. Confidential communications locations:

Announcements and alarms

ALL Fires in the U/G shall be reported to CMR IMMEDIATELY.
Per WP12-ER4911

When sounded, go to egress Hoist Station.

Listen and follow instructions.

Discuss Lessons Learned - Emergency Drills 9.10.15

Long-distance communication

Can communicate with equipment operators.

Light signals seen long distances away.

Limited to established signals.

Directing loads, locations, etc.

If an operator does not understand signal, they will not move the load.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

<ul style="list-style-type: none">(1) Shaft areas(2) Instrument sheds(3) Some shop locations	<p>Salt Shaft, Waste Shaft, etc.</p> <p>Located throughout the mine.</p> <p>E-300, S-1300, etc.</p>
<ul style="list-style-type: none">2. Mine phone<ul style="list-style-type: none">a. Not a private communication device.b. Anyone may listen at another station.c. Locations<ul style="list-style-type: none">(1) Throughout the mine(2) Permanent locations	<p>Everyone uses this phone.</p> <p>Usually every 500 feet.</p> <p>Assembly areas (Phone has different channels), Shaft Stations, shops.</p>
<ul style="list-style-type: none">3. Public address system (Gai-Tronics)<ul style="list-style-type: none">a. Primary local use<ul style="list-style-type: none">(1) Contact CMR(2) Local or zone announcement(3) Local or zone conversation	<p>Use Channel #1 - direct to CMR.</p> <p>Use Channels #2-5. Depress button in handset for P.A. announcements.</p> <p>Use Channels #2-5 for confidential calls. Do NOT depress button in handset.</p>

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

- b. Public address system (CMR)
 - (1) Alarm activation
 - (2) Emergency announcements
 - (a) Fire
 - (b) Evacuation
- 4. Waste in Transit Notification System /
Technical Safety Requirements (TSR's)
 - a. An amber colored flashing beacon will operate in the waste transportation route to identify when waste shipment is in transit to the disposal panel.
 - b. During waste handling operations, when the lights of the Transporter/41 ton forklift are seen, vehicles not involved with waste handling will move into an open cross cut and wait until the waste has passed and is greater than 100 feet away before continuing to travel in the haul route.
 - c. Two transporters loaded with waste in the underground shall maintain greater than 100 feet separation.
 - d. No non-waste handling vehicles are allowed in the active disposal room during waste handling.

*Note - Refer to AD3013 for alarm response action that affects the Underground

8.31.15

8/3/15

There are amber beacons located at every intersection in the haul route from the waste shaft to the current disposal room.

This includes all forms of transportation equipment and foot traffic.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

e. No non-waste handling equipment is allowed within 100 feet of the waste face without a fire watch.

f. **“ TEMPORARY” Firewatch**

5. Underground Reporting of Occurrences

a. It is the expectation that all underground occurrences be reported in a timely manner to the individual’s immediate manager and to the Underground Facilities Engineer.

Compensatory Actions are in place. Firewatch required for diesel equipment operation.

Fire Watch Training will be recorded on an attendance referencing FWT-101 Fire Watch Training.

Underground Services phone Number is 8553, or use the mine pager phone.

III. SUMMARY

Review enabling objectives

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

I. INTRODUCTION

- A. Subject
- B. Enabling Objectives

The student will be able to

- 9.1 Locate the reference point for all underground locations.
- 9.2 Locate on a map the primary and secondary access drifts at the WIPP.

II. PRESENTATION

A. Definitions

- 1. Assembly areas
- 2. Back
- 3. Bulkhead
- 4. Collar
- 5. Drift
- 6. Excavated
- 7. Face
- 8. Rib
- 9. Station

B. Map legends

- 1. Bulkhead with doors

The place to go when directed on public address system.
Ceiling/overhead
Wall
Top of shaft
Mined drifts, tunnels
Not solid salt/openings
Front of excavation/leading end of drift
Walls of mine out areas
Where men/materials are unloaded underground.

Use current map

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

- a. NO
 - b. NC
2. Air locks and doors
- a. Ventilation Control Doors are metal structures or bulkheads, located throughout the underground. The doors are installed to allow for vehicle and/or personnel access. Many of the bulkheads are installed to form an airlock, i.e., two bulkheads separated to allow vehicles and/or personnel to close the first door before opening the second door.
 - b. Vehicle Doors are normally equipped with pneumatic cylinders that open and close the doors. The cylinders are actuated by ropes attached to special electrical contacts suspended from the ceiling, or back. Each door has a set of pull ropes on both sides of the door in the normal travel path. A green colored rope to open the door, a red colored rope to close the door. Travel through these doors requires personnel to properly activate the door when it is safe to do so without endangering personnel or equipment.
 - c. Some bulkheads are installed with man doors to allow individuals to pass through the structure on foot only. In vehicle door installations, the man doors are designated for emergency egress only and should only

Normally open
Normally closed

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

be used in an emergency. In these airlock configurations significant pressure will be exerted on the man door should the opposite vehicle or man door be opened causing the door to shut forcefully if not controlled by the individual.

- d. In single bulkhead installations, the doors are posted to advise personnel that significant pressure differential exists which may make the door difficult to open and could shut forcefully if not controlled by the individual traveling through the door.
- e. In man door airlock installations significant differential pressure may exist. Travel through these man door airlocks should be undertaken by opening only one man door at a time

- 3. Excavated area
- 4. Non-RMA assembly area
- 5. Regulator
- 6. RMA assembly area

C. Directions and locations

- 1. Underground reference point

E.O. 9.1

Use current map

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

- a. Salt Handling Shaft (SH Shaft)
- 2. Boundary limits
 - a. North/South
 - (1) North – 0-E through N-1400
 - (2) South
 - (a) 0-E/W-30 through S-3650
 - (b) East 140 through S-3650
 - b. East/West
 - (1) East-300
 - (2) West-170
- D. Primary drifts
 - 1. North/South
 - a. E-0
 - b. East 140
 - c. East 300
 - d. West 30
 - e. West 170

This is the center point for all underground locations. The actual center line is the center of the shaft. All reference points such as N-780 means 780 feet North of the Salt Handling Shaft. E-140 means 140 feet east of the Salt Handling Shaft.

Take this time to work with each student for a base understanding of North-South/East -West reference points.

E.O. 9.2

Using a current map, identify which drifts are used for primary and secondary access.

primary
primary
secondary
primary
secondary

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

2. East/West

- a. North 1400
- b. North 460
- c. North 300
- d. North 150
- e. South 90
- f. South 700
- g. South 1600
- h. South 1950
- i. South 3650

Farthest point accessible north.

Main way to get to shop

Air Intake Shaft entry

Secondary escape from west side of mine.

Salt Shaft Station area.

Main access east-to-west.

Access from east to west.

Farthest point south accessible.

III. SUMMARY

Review enabling objectives

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

I. INTRODUCTION

- A. Subject
- B. Enabling Objectives

The student will be able to

- 10.1 State where the primary underground ventilation fans are located.
- 10.2 State the purpose of balancing the air flow underground.
- 10.3 State who may adjust the air flow underground.

II. PRESENTATION

A. Ventilation

- 1. General requirements
 - a. Fans on surface
 - (1) Primary fans are located on the surface at the exhaust shaft
 - (2) Secondary (also on surface)
 - (3) Failure
 - (a) Actions

A current underground Ventilation Plan shall be used and the current air flow totals at the time of class shall be referenced.

E.O. 10.1

Equipment #700 A, B and C

Equipment #860 A, B, and C

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

	(1)	Monitoring of air quality	No immediate danger. Lots of air underground and you have a natural air flow
	(2)	Partial withdraw	Follow instructions broadcast on Public Address System.
	(3)	Full withdraw	Performed by Underground Services. When directed by CMR.
B.		Intake volume	
1.		425,000 standard cubic feet per minut	
C.		Intake points	
1.		Air Intake Shaft	Use current mine ventilation for air flow totals. What is listed below is very generic.
a.		Primary source	460,000 actual CFM
b.		316,000 cubic feet per minute downcast volume	
2.		Salt Handling Shaft	
a.		59,000 cubic feet per minute	
3.		Waste Shaft	

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

- a. 50,000 cubic feet per minute downcast
 - b. Upcast directly to Exhaust Shaft
- D. Exhaust volume
 - 1. Exhaust Shaft (non-filtration)
 - a. 425,000 cubic feet per minute
 - b. 3 exhaust fans (surface-mounted) - 212,000 CFM each
 - 2. Exhaust Shaft (filtration)
 - a. 3 exhaust fans
 - b. 60,000 CFM each
- E. Primary air flow routes
 - 1. North mine area air flow (intake)

AIS to 0-East - (North) North to N 1400, East to E 300 - South to N 1100 – West to E 140 South to N 250 East to E 300 – and South to the Exhaust shaft
 - 2. South mine area air flow (intake)
 - a. Construction Area
AIS to East 0 - (South) West 30

All air flow routes shown are normal flow patterns. During the course of mining activities these routes may change. Changes will be discussed on a case by case basis.

The most southern point of the Construction circuit will change as panels are opened for disposal.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

- b. Disposal area

AIS to East 0 - (South) West 30 - South to S 1000 - East to E 140 - South to the current disposal room.
- 3. South mine area air flow (Exhaust)
 - a. Non-RMA

North in W 170 from current mining panel, to North 150 Overcast, into E 140, south to S 90, east to E 300 to the Exhaust Shaft.
 - b. RMA

North in E 300 from current disposal panel to the Exhaust Shaft.
- F. Air quality
 - 1. Required testing
 - a. Routine
 - (1) Mine gases
 - (2) Oxygen
 - b. Ventilation failure (long-term)
 - (1) Mine gases

This is performed by Underground Services.

If the underground is occupied.

MX-6

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

G. Air flow balancing

E.O. 10.2

1. The plan

a. Ventilation regulators

(1) Required for air flow
adjustments.

(2) Locations (North)

(a) South 80/East 300

(b) East 140/North 150

(3) Locations (South Intake)

(a) West 30/South 1000

(4) Locations (South Exhaust)
Temporary and changed as
necessary

b. Adjustments

E.O. 10.3

(1) Only authorized by Underground
Facility Operations

(2) Requires proper calculations to
ensure proper balance for entire mine
and Disposal requirements.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

c. Un-approved adjustments

- (1) Improper air flow to mine/ loss of control of air flow.
- (2) Unauthorized adjustments could result in possible disciplinary actions.

H. Diesel Particulate Matter Exposure (DPM)

1. In 2001 the “Diesel Particulate Matter Exposure of Underground Metal and Nonmetal Miners” Final Rule was signed into law.
2. During the last few decades there has been an increase in the use of diesel powered equipment in both underground coal and non-coal mines. Along with the increased usage there have been increased concerns regarding potential health effects of long and short term exposures to diesel exhaust.
3. Long term health effects are associated with inhalation and deposition of diesel particulate in the lungs
4. Short term effects are associated with inhalation and absorption of gaseous contaminants into the blood and irritation of mucous membranes.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

5. The National Institute of Occupational Safety and Health (NIOSH) has recommended that whole diesel exhaust be regarded as a potential occupational carcinogen (NIOSH 1988).
6. Effective May 20, 2006, any mine operator covered by this standard must limit the concentration of DPM to 308ec micrograms per cubic meter of air (308 ec ug/m³) final PEL. Which miners are exposed in underground areas of a mine by restricting the eight-hour equivalent full shift airborne concentration of elemental carbon, where miners normally work or travel.
7. Effective January 20, 2007 any mine operator covered by this standard must limit the concentration of DPM to 350tc micrograms per cubic meter of air (350tc g/m³) final PEL. Which miners are exposed in underground areas of a mine to by restricting the eight-hour equivalent full shift airborne concentration of total carbon, where miners normally work or travel.
8. Effective May 20, 2008 any mine operator covered by this standard must limit the concentration of DPM to 160tc micrograms per cubic meter of air (160tc g/m³). Which miners are exposed in underground areas of a mine to by restricting the eight-hour equivalent full shift airborne concentration of total carbon, where miners normally work or travel.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

9. Work practices and training can have a significant effect on diesel exhaust emissions.

10. **Care must be taken to avoid contaminating diesel fuel and lubricating oils** during transfer. Fuel contamination can result from transfers taking place in a dusty and damp environment or by using the same transfer pump for different fluids. Fuel contamination will increase emissions.

11. **Operators should avoid lugging the engine to low RPM.** Lugging an engine is applying an increasing load (torque) against the engine, while the engine's fuel rack is at the maximum position, causing a decrease in the engine's RPM. An example of lugging is when a LHD operator drives the bucket into a muck pile with the accelerator to the floor and continues to work the engine causing the engine's RPM to decrease. If the engine operator continues to work the engine to a point where the engine's RPM are low but the torque demand on the engine is high, the engine may eventually stall. However, as the engine's RPM decreases and the engine torque increases, the engine's ability to efficiently burn fuel decreases causing the engine to produce excessive carbon monoxide and particulate emissions. For naturally aspirated engines and older turbo charged engines, an engine operating at a lower RPM and high load produces higher exhaust emissions than an engine operating at higher RPM and lower load. To avoid this situation, the vehicle operator should maintain higher engine RPM.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

12. **Operators should avoid idling the engine.** Idling wastes fuel, increases emissions and may overcool the engine. Overcooling results in incomplete combustion, higher emissions and may lead to varnish and sludge formation. Unburned fuel washing down cylinder walls removes the protective film of lubricating oil and results in accelerated wear. The fuel dilutes the lubricating oil resulting in reduced lubricity. Engines should be shut down and not idled except as required in normal mining operations.
13. **Operators of diesel-powered equipment must be trained** on the operation of the equipment, in routine inspection and maintenance activities, and to promptly report any evidence of problems.

III. SUMMARY

Review enabling objectives.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

I. INTRODUCTION

A. Subject

B. Enabling Objectives

The student will be able to

11.1 List the methods of notification for evacuations.

11.2 State the area where all employees should meet when alarms are sounded.

II. PRESENTATION

A. WIPP underground evacuation procedures

1. Authorization for evacuation

On direction of Management

2. Notifications

a. Public Address System

b. Mine phone

3. Initial actions

a. Assembly areas

b. Primary and Secondary egress stations

Authorized by Facility Shift Manager (FSM)

E.O. 11.1

Yelp tone-identical alarms for surface and underground.

All announcements will be repeated on the mine pager.

E.O. 11.2

When directed to go to the assembly areas or shaft stations, do so as quickly as possible.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

B. Escapes

1. Purpose

To provide a safe egress from the mine

2. Primary

a. Intake air

b. Routes

3. Secondary

a. Exhaust air

b. Routes

Show current locations according to the Underground Plan

C. Non-routine egress

1. Combination usage

a. Primary

b. Secondary

III. SUMMARY

Review enabling objectives.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

I. INTRODUCTION

- A. Subject
- B. Enabling Objectives

The student will be able to

- 12.1 State the Federal regulation which requires training in ground control.
- 12.2 State the requirements of WP 04-AU1007 - Underground Work Area Ground Control Inspections.
- 12.3 Locate the following ground conditions (during the underground tour):
 - * Drummy back or vibrations
 - * Sloughing or spalling
 - * Cracking or separations

II. PRESENTATION

- A. Evaluation of ground control
 - 1. Needs Assessment

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

- 2. History of ground control in mining
 - a. Accidents
 - b. Ground failures
- B. Federal Regulations
 - 1. 30 CFR 57.3200
 - 2. 30 CFR 57.3201
 - 3. 30 CFR 57.3360
 - 4. 30 CFR 57.3401
 - 5. 30 CFR 57.3460
- C. State Mining Regulations
- D. WIPP procedure
 - WP 04-AU1007 U/G Work Area Ground Control Inspection.
 - 1. Purpose and scope
 - 2. References
 - 3. Definitions

Refer to Fatal-Grams

E.O. 12.1
Have copy of 30 CFR available for anyone interested.

Have copy of the New Mexico Mining Code available for anyone interested.

E.O. 12,2
Have copy of the procedure available for anyone interested.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

4. Equipment list
 5. Precautions and limitations
 6. Initial conditions
 7. Procedure
- E. Introduction to ground control and ventilation
- F. Introduction to barring-down and scaling
- G. Demonstration of bar-down and scaling techniques
- H. Geological formation at WIPP
- I. Field activities
1. Identification of bad back or rib
 2. Bar-down operations
 3. Scaling operations
 4. Safety issues

VIDEO on Ground Control as time permits.

Show proper way to hold bar while in class.

Refer to geological formation transparency.

E.O. 12.3

Take class underground for completion of course

Review of what and where the underground tour will consist of.

Escorts will be identified at this time.

III. SUMMARY

- A. Review enabling objectives
- B. Review field activities

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

I. INTRODUCTION

A. Subject

B. Enabling Objectives

The student will be able to

- 13.1 Describe the general hazards which exist in other mining locations.
- 13.2 Compare the differences in hazards at other mining locations and those which exist at WIPP,
- 13.3 Describe the hazards associated with underground mobile equipment.
- 13.4 State the hazards associated with ground control.
- 13.5 Describe hazards associated with electrical equipment.
- 13.6 State the hazards involved with loss of ventilation.
- 13.7 State the importance for proper housekeeping to prevent hazards associated with fires.
- 13.8 State the hazards involved with mine fires and the immediate actions that need to be taken

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

- 13.9 State the hazards associated with low level laser operations.
- 13.10 Describe monitoring and possible effects of seismic activity

II. PRESENTATION

A. General hazard recognition

- 1. Mining industry as a whole
 - a. Gassy mines
 - (1) Explosive dust
 - (2) Air quality
 - (a) Gold dust
 - (b) Coal dust
 - b. Ground control
 - c. Water
- 2. Comparing WIPP with the general mining industry
 - a. WIPP is not gassy

E.O. 13.1

Most metal (hard rock) mines are considered gassy

Coal dust (rock dust) is combustible. Therefore, special precautions are required.

Air quality is constantly monitored.

Some of these mines will produce in excess of 1500 gallons per minute.

E.O. 13.2

We do not see concentrations of methane

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

(1) No significant levels of explosive gases.	
(2) Dust is salt dust	No known health hazard. It is considered a nuisance dust.
b. Ground control	
(1) No pillar operations	We are not here for ore extraction.
(2) Larger base area due to no production	Our product is finished rooms.
(3) Height of mine	
(a) Easier inspection of back and rib.	Work packages define the size of the rooms.
(b) Use of wire mesh.	(Chain link fence) Used to support fractured ground.
(c) Extensive use of rock bolts.	The pattern is defined in the work package.
c. Water in the underground	Grouting of the shaft liners prevents water seepage.
(1) WIPP shaft grouting	This formation of salt does not have any water tables.
(2) Type of formation	WIPP is at approximately 2150 feet underground. Local mines vary from about 850 feet to 1350 feet.
(3) Depth of operations	

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

B. Mobile equipment

1. Size

- a. Visibility
- b. Nature of operations
- c. Right-of-way

2. Construction

- a. Pinch points
- b. Mechanical systems

3. Other hazards

- a. Suspended loads
- b. Direction of travel capabilities
- c. Method of power
 - (1) Diesel
 - (2) Electric

E.O. 13.3

Equipment is large and there are blind spots.

This equipment is multi-directional.

Mobile equipment has the right-of-way.

Articulating style

Pressurized systems such as hydraulics and Pneumatics (air).

Can change directions very quickly.

Fueling operations in fuel bay or from lube truck.

480 to 13,800 volts power

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

- 4. General condition
 - a. Equipment
 - (1) Leaks
 - (2) Handling problems
 - b. Safety equipment
 - (1) Fixed-fire extinguishing equipment.
 - (2) Portable fire equipment

C. Ground control

- 1. Over-confidence in work place
 - a. Working in automatic mode.
 - b. Failure to re-check area.
- 2. Barriers
 - a. Initiating emplacement.
 - b. Notification of supervisors.
 - c. Proper follow-up.

Discuss Lessons Learned 128 Bolts-9.10.15

Report any leaks

Do not operate any equipment that does not pass pre-operational inspection.

Part of pre-op inspection.

Used as a back-up for fixed equipment

E.O. 13.4

Don't become complacent

Always re-check an area if you have any doubt.

Rovers will place barriers.

If your supervisor is not available in the underground, the Rover should be called.

Remind students that we do not leave an unsafe area unattended.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

3. Installation of control devices
 - a. Loose bolts
 - (1) Hanging away from surface, or bearing plate not flush.
 - b. Broken bolts
- D. Electrical hazards
 1. Cables
 - a. Loose connections.
 - b. Damaged insulation.
 - c. Bad splices.
 2. Sub-stations and switch racks
 - a. Current
 - (1) Voltage
 - (2) Amperage
 - b. Unauthorized access
 3. Use of unauthorized personal equipment

Report these to Mine Engineer or Rover.

These are also reported to the Mine Engineer or the Rover.

E.O. 13.5

Never handle an energized cable with voltage in excess of 150 volts phase to ground.

If you see any of these, call Underground Facility Operations immediately.

These are all Blue Areas.

Current will range from approximately 20 volts all the way up to 13,800 volts.

If you do not have the specific areas on your Underground Access Permit, stay out. PPE for these areas is specific.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

E. Loss of ventilation

1. Air quality

- a. Mobile equipment usage
- b. Naturally forming gases
- c. Risk to personnel

2. Radioactive Materials Area (RMA)

a. General

Always check Underground Controller's board for the status of RMAs

b. During an event

(1) Migration

E.O. 13.6

Mobile diesel equipment is shut down.

Again WIPP is considered non-gassy, Category IV, Non-gassy, Non-combustible.

No immediate risk. Plenty of air.

Go where directed by CMR.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

F. Housekeeping

1. General

a. Tripping hazards

b. Fire

- (1) Panic
- (2) Air quality
- (3) Injury
- (4) Death

WIPP Firefighting Policy

Workers in D.O.E. nuclear facilities are expected to evaluate and respond to incipient fires with portable fire extinguishers, if safe to do so. Control of combustible loading is the first line of defense to fire damage. Limiting the amount of combustibles limits the size of a fire, and limits the danger to workers.

c. Flammable materials

- (1) Wire Spools
- (2) Stored Timbers
- (3) Obsolete items
- (4) Combustible Materials
 - a. Rags
 - b. Trash
- (5) Chemical storage

E.O. 13.7

Extension cords, air hoses, power cables etc.

In the event of a fire in the U./G, CMR must be called immediately. This is per WP12-ER4911 (Underground Fire Response) Procedure.

E.O. 13.8

Show slides on incipient fires.

DISCUSS : Housekeeping Guidance Sheet / Combustible Loading Controls.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

d. Fuel Packages

- 14 empty stacked wood pallets.
- 5 wooden crates 4' x 4' x 7'
- 4-1/8 gallons flammable/combustible liquid
- 5 gallons of combustible epoxy paint
- 2 cubic ft. plastic material (non-fire retardant)
- 134 cubic ft. of trash bags
- 1 pallet HEPA filters 4' high
- 2 large wooden spools/reels of wire

Smoking policy/Smoking Areas

S-90/E.300
W-170/S.700

SHOW VIDEO ON FIREFIGHTING and FIRE EXTINGUISHERS

Smoking in the underground is not allowed except in designated areas that are posted as "DESIGNATED SMOKING AREA".

Keep cigarette butts picked up and placed in the appropriate container.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

e. Unstable overhead storage.

f. Protruding objects from rib

2. Risk to personnel

- Injury
- Lost time
- Emotional stress

G. Laser operations

1. Moderate level laser

2. Damage to eyes

3. Monitoring of personnel

H. Seismic activity

1. No known fault

2. Monitoring equipment

- Surface
- Underground
- 24 hour surveillance

Affects fellow workers, and response personnel.

E.O. 13.9

About the same as a 75 watt light bulb in irradiance, rated at 500 milliwatts. Our lasers are Class 3A, Wave length 632.8 nano-meters.

Never look directly into laser light.

Baseline eye exams.

E.O. 13.10

WIPP is located in an area with no known faults.

III. SUMMARY

Attachment 1 – Lesson Plan Cover Page

LESSON PLAN COVER PAGE			
Course Code: <i>SAF502</i>	Revision: <i>13</i>	Course Length: <i>8</i>	Date: <i>2-19-15</i>
Course Title: <i>ANNUAL UNDERGROUND REFRESHER</i>			
Lesson: <i>See Lesson Plan</i>			
Author: <i>Glen Schoele</i>			
Training Aids: <i>Lesson Plan</i> <i>STUDENT HANDOUT</i> <i>Fire Ext. Video</i> <i>U/G MAPS</i>			
Terminal Objective: <i>See Lesson Plan</i>			
Enabling Objectives: <i>See Lesson Plan</i>			
References: <i>30 CFR Part 48</i> <i>WP12-FP3001</i> <i>WP04-AD3013</i> <i>DDCD-0001</i> <i>WP12-FP01</i>			
Commitments:			

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUEST., ETC)

<p>I. INTRODUCTION</p> <p>A. Instructor</p> <ol style="list-style-type: none">1. Name2. Organization3. Qualification <p>B. Students</p> <ol style="list-style-type: none">1. Name2. Organization <p>C. Terminal Objective</p> <p>Upon successful completion of this course, the Student will meet the requirements of 30 CFR part 48 for annual refresher. Mastery of the objective shall be demonstrated by scoring 80% or greater on the exam.</p>	
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LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUEST., ETC)

<p>D. Enabling Objectives</p> <p>1.1 State the time frame in which an operator aid is approved for use.</p> <p>1.2 State the employee's responsibility when handling energized trailing cables.</p> <p>1.3 Describe the hazards of being in salt dust.</p> <p>1.4 State the long term effects of being exposed to noise.</p> <p>1.5 State the requirements for Radiological Controls</p> <p>1.6 State the Combustible Loading Controls and the Underground Housekeeping Guidance</p>	
<p>II. PRESENTATION</p> <p>A. Hand out attendance sheet</p> <p>B. Hand out 5000-23 MSHA Forms</p> <p>C. Explain the student critique forms</p> <p>D. Work place (mine) overview</p> <p>1) Show any and all RED areas of the U/G</p> <p>2) Show any and all Blue areas of the U/G and if available the nature of the work.</p> <p>3) White areas discussion will be open for questions from the class.</p>	

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUEST., ETC)

<p>E. Operator Aides</p> <p>1) There are 20 sets of these books, 16 sets are located throughout the mine. The other four sets are located on the surface:</p> <ul style="list-style-type: none">*1 set in the Facility Operations Desk area.*1 set in the CMR*1 set in the Training Department*1 set in the EOC <p>2) These books are for the individuals in the U/G to use as a reference guide. These are where the information in this class comes from.</p> <p>3) Ensure the date is not more than six months old. Using out dated material is not in accordance with Conduct of Operations.</p> <p>F. ELECTRICAL</p> <p>1. Voltages range from micro voltages (<1) , to 13,800 volts. These various ranges of voltages support the underground activities. It is essential for all to understand the requirements for handling these cables.</p>	<p>E.O. 1.1</p> <p>E.O. 1.2</p>
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LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUEST., ETC)

a) When manually moving an energized cable, the law (30 CFR, Part 57.12014) requires an "approved" cable handling device shall be used if the voltage of the cable exceeds 150 volts Phase to Ground.

b) When escorting a tour, it is the responsibility of the escort to ensure visitors keep a safe distance from and do not touch these cables.

2. Lock and Tagout of electrical components is addressed in WIPP Procedure WP 04 AD -3011

3. If you are an equipment operator, it is part of your job to inspect and test the Ground Fault Circuit Interrupter (GFCI) if the equipment has one.

G. Working Alone Two Man Rules (30 CFR Part 57.18025)

1. No employee shall be assigned, or allowed, or required to perform work alone in any area where a hazardous condition does or could exist, that would endanger his or her safety unless their cries for help can be heard or the employee can be seen.

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUEST., ETC)

H. Walking and Driving in the Underground

1. When walking in the underground, persons should be aware of approaching equipment. As a pedestrian, the burden of notifying the equipment operators of your presence should be obvious. Let the operator know you are there. It is also necessary to keep your cap lamp on and keep it on your hard hat.

2. Driving mobile equipment requires a Qualification Or Authorization card. There are no posted speed limits in the underground. The rule of thumb is to drive no faster than the present conditions will safely permit.

3. Fluid Spills

- a) Report all spills
- b) Fluid leaks on equipment should be noted on the operators checklist.

I. DUST

1. The dusts you will normally be exposed to are basically salt dust (sodium chloride). Even in high concentrations, there is no known health hazard.

E.O. 1.3

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUEST., ETC)

<p>2. The real hazard with salt dust is visibility. When mining is in progress, in the exhaust drifts and haul routes are where the average employee will encounter these dusts. Remember always wear your cap lamp on your head with the light turned on, (safety first). It is your responsibility to let the equipment operators know you are present.</p> <p>J. NOISE</p> <p>A. The long term effects of being exposed to noise in high levels is hearing loss. This is something that each person has the responsibility to address each time high levels of noise are encountered.</p> <p>B. WIPP is a quiet plant compared to industry Standards. The purpose of the WIPP hearing protection program is to prevent and reduce the progression of occupational noise induced hearing loss among employees.</p> <p>C. Federal Regulations, 29 CFR 1910.95 Occupational Noise Exposure and 30 CFR Part 62 Occupational Noise Exposure relate to worker noise exposure. A copy of these can be found in Industrial Safety and Hygiene or at various Locations across the site. Both Standards require employees to have hearing conservation when the worker 8 hour time weighted average exposures</p>	<p>E.O. 1.4</p>
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might exceed 85dBA. Where the 8 hour time weighted average could be greater than 105 dBA, double hearing protection is required. The Standards require the hearing conservation program to include methods for monitoring, audiometric exams, training, record keeping and notification of workers.

- D. Most employees working at WIPP will not require hearing protection as part of their normal duties. Certain locations or equipment require the use of hearing protection. On some occasions, with specific pieces of equipment in the mine, dual hearing protection (earplugs and earmuffs) may be required. Hearing protection is usually provided near the work area. WIPP has the responsibility of maintaining a safe work place. This is done through identification of potential noise exposure, reduction of noise exposure by engineering means where possible and providing hearing protection where needed. It is the employee's responsibility to wear proper hearing protection where required. Employees should notify their manager of any changes in the noise exposures at the facility. Any questions or concerns can be directed to the Industrial Safety and Hygiene Department.
- E. The site conducts noise monitoring as needed throughout the facility. The monitoring may be of an area with the use of a sound level meter or

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personnel using a noise dosimeter, which an employee wears during their shift. Both of these methods are used to determine; (1) who should be included in the hearing conservation program and (2) what type of hearing protection is required. Medical evaluations, audiometric testing, and training on the care and use of hearing protection are also furnished.

- F. **Audiometric Testing:** To assess the effectiveness of a hearing conservation program, and to determine the need for corrective action.

WIPP Health Services has its own testing booth and equipment. If you work in an area with high noise levels, you may be required to have an annual hearing test. During the test the employee will be seated in a sound proof booth while wearing a pair of earphones. As different tones are heard through the earphones the employee is to respond with a hand held push button. The test will determine your hearing ability at several frequencies.

- G. Examples of potential effects on workers with exposures exceeding 100 decibels include:
- Chronic fatigue
 - Digestive disorders

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<ul style="list-style-type: none"> • Loss of equilibrium • A gagging sensation • Reduced vision • Changes in breathing • Vibrations in chest • Temporary or permanent hearing loss <p>H. There are several types of hearing protection used at WIPP. The following list provides the advantages and disadvantages of each type.</p> <ol style="list-style-type: none"> 1. Rubber ear plugs: Easy to carry and reusable. This type of protection must be cleaned after each use. To use, clean hands first, insert into ear canal while holding outer ear up and away from head. 2. Foam ear plugs: Single use only, disposable, eliminating the need for cleaning. Highest attenuation protection. To use, clean hands first, roll into a cylindrical shape, insert into ear canal while holding outer ear up and away from head. 3. Ear muffs: Offers the least amount of protection. Sealing surfaces can be distorted over time and repeated use. Potential hygiene problems if not cleaned and stored correctly. In addition safety glasses interfere with sealing surfaces. Ear muffs may be worn in different positions, ie; 	
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<p>connecting band worn over the head, behind the head or under the chin. Each position has a different Noise Reduction Rating (NRR)</p> <p>4. Attenuation Factors: NRR ratings listed means That the noise your ears are exposed to (in decibels) will be reduced by that number below that current noise level of the area or environment. How ever, the actual noise reduction obtained in the workplace depends on the size and fit of the protector and the user's motivation, movement and training. OSHA recommends that you derate the published NRR by seven (7). Example: Rubber ear plugs with an NRR of 26 are down rated to 19. $26-7=19$. Foam ear plugs with an NRR of 29 are down rated to 22. $29-7=22$. Ear muffs are also down rated by the number 7, but the position of the muff must be considered and the down rating is from the position worn and associated NRR.</p> <p>I. Diesel Particulate Matter Exposure (DPM)</p> <p>1. In 2001 the "Diesel Particulate Matter Exposure Of Underground Metal Nonmetal Miners" Final Rule was signed into law.</p> <p>2. During the last few decades there has been an increase in the use of diesel powered equipment</p>	
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<p>in both underground coal and non-coal mines. Along with the increased usage there have been increased concerns regarding potential health effects of long and short term exposures to diesel exhaust.</p> <ol style="list-style-type: none">3. Long term health effects are associated with inhalation and deposition of diesel particulate in the lungs.4. Short term effects are associated with inhalation and absorption of gaseous contaminants into the blood and irritation of mucous membranes.5. The National Institute of Occupational Safety and Health (NIOSH) has recommended that diesel exhaust be regarded as a potential occupational carcinogen (NIOSH 1988).6. Effective May 20, 2008 any mine operator covered by this standard must limit this concentration of DPM to 160 tc micrograms per cubic meter of air (160tc g/m³). Which miners are exposed in underground areas of the mine by restricting the eight hour equivalent full shift airborne concentration of total carbon, where miners normally work or travel.7. Work practices and training can have a significant effect on diesel exhaust emissions.	
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8. **Care must be taken to avoid contaminating diesel fuel and lubricating oils** during transfer. Fuel contamination can result from transfers taking place in a dusty or damp environment or by using the same transfer pump for different fluids. Fuel contamination will increase emissions

9. **Operators should avoid lugging the engine to Low RPM.** Lugging an engine is applying an increased load (torque) against the engine, while the engine's fuel rack is at maximum position, causing a decrease in the engine's RPM. An example of lugging is when a LHD operator drives the bucket into a muck pile with the accelerator to the floor and continues to work the engine causing the engine's RPM to decrease. If the LHD operator continues to work the engine to a point where the engine's RPM is low but the torque demand on the engine is high, the engine may eventually stall. However, as the engine's

RPM decreases and the engine's torque increases the engine's ability to efficiently burn fuel decreases causing the engine to produce excessive carbon monoxide and particulate emissions. For naturally aspirated engines and older turbo charged engines, an engine operating

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<p>at a lower RPM and high load produces higher exhaust emissions than an engine operating at higher RPM and lower load. To avoid this situation, the vehicle operator should maintain higher engine RPM while performing the work. This might mean picking up a smaller load or carrying less material or shifting to a lower gear. The result will be a reduction in engine exhaust emissions.</p> <p>10. Operators should avoid idling the engine. Idling wastes fuel, increases emissions and may Overcool the engine. Overcooling results in incomplete combustion, higher emissions and may lead to varnish and sludge formation. Unburned fuel washing down the cylinder walls removes the protective film of lubricating oil and results in accelerated wear. The fuel dilutes the lubricating oil results in reduced lubricity. Engines should be shut down and not idled except as required in normal mining operations.</p> <p>11. Operators of diesel powered equipment must be trained on the operation of the equipment, in routine inspection and maintenance activities and to promptly report any evidence of problems.</p>	
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<p>J. Radiological Controls.</p> <p>K. Combustible Loading Controls / U.G. Housekeeping</p> <p style="text-align: center;">WIPP Firefighting Policy</p> <p>Workers in D.O.E. nuclear facilities are expected to evaluate and respond to incipient fires with portable fire extinguishers, if safe to do so. Control of combustible loading is the first line of defense to fire damage. Limiting the amount of combustibles limits the size of a fire, and limits the danger to workers.</p> <p>c. Flammable materials</p> <ul style="list-style-type: none"> • Wire Spools • Stored Timbers • Obsolete items • Combustible Materials • Rags • Trash • Chemical storage <p>d. Fuel Packages</p> <ul style="list-style-type: none"> • 14 empty stacked wood pallets. • 5 wooden crates 4' x 4' x 7' • 4&1/8gls.flammable/combustible 	<p>READ AND FOLLOW ALL RADIOLOGICAL POSTINGS AND PROCEDURES.</p> <p>E.O. 1.5</p> <p>IN THE EVENT OF A FIRE IN THE UNDERGROUND CMR MUST BE NOTIFIED IMMEDIATELY AT 8111. PER WP12-ER4911</p>
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- liquid
- 5 gallons of combustible epoxy paint
- 2 cubic ft. plastic material (non-fire retardant)
- 134 cubic ft. of trash bags
- 1 pallet HEPA filters 4' high
- 2 large wooden spools/reels of wire

Discuss: Housekeeping Guidance Sheet / Combustible Loading Controls.

Show slides on incipient fires.

Show Video on Firefighting and Fire Extinguishers

III. SUMMARY

A. Review the enabling objectives.

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<p>I. INTRODUCTION</p> <p>A. Enabling Objectives</p> <p>2.1 Explain the employee's role as a "Miners Representative" at the WIPP Site.</p> <p>2.2 State the responsibilities of an underground escort.</p> <p>II. PRESENTATION</p> <p>A. Miners Representatives</p> <p>1. Any employee with unescorted access is appointed as a Miners Representative of their immediate work area.</p> <p>2. When an individual is escorting a tour, the escort is the representative for the group that is listed on the underground access permit. As the escort, you are responsible for the safety and the actions of the tour group.</p>	<p>E.O. 2.1</p> <p>The Miners Representative has the authority to stop a job if a hazardous condition exists. The representative has the responsibility to initiate corrective actions. This could be to correct the situation or secure the area and make the proper notification(s).</p> <p>E.O. 2.2</p> <p>Sometimes the tour will see something unusual and ask the escort. Escorts should answer as best they can. If the situation requires corrective action, escorts should consider whether to take actions them self or have it corrected.</p>
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3. Turnover of escorted personnel by the designated escort shall be permitted by identifying the new escort, contacting the U/G Controller and relaying the escorts name, visitors name, new escorts name and brass numbers for each person. The U/G Controllers will complete Attachment 8 - Visitor and Escort Change Log to ensure accountability. In the underground, escorts will contact the U/G Rover or the U/G Roving Watch and obtain changes for the original and new UAP. The U/G Rover or U/G Roving Watch will ensure the U/G Controller has the new information.

B. Miners rights and responsibilities

1. You have the right to work in a safe environment and the right to refuse to work in an environment that is unsafe.
2. You have the right to appropriate safety and health training
3. You have the right to obtain an inspection of an area where there are reasonable grounds to believe that an imminent danger, violation of the act, or a violation of a safety or health standard exists.

Taken from the Federal Mine Safety and Health Act of 1977. These are not quotes, only a basic summary of the Act combined with WIPP specific methods of reporting and/or correcting.

*NOTE Refer to AD3013 on escorting
information and requirements*
8/31/15
8.31.15

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4. You have the right to be issued safe working tools, equipment and safety related equipment.
5. You have the responsibility to maintain your working environment in a safe and healthful condition.
6. You have the responsibility to report or correct any deficiencies on tools, equipment, or the work environment.
7. You have the responsibility to work in a safe environment and to assure the safety of others is not adversely affected by your actions.
8. You cannot be fired or be discriminated against for reporting a violation or filling a complaint.

C. Normal Reporting of Safety Issues

1. WIPP Chain of Command
 - a) Manager
 - b) Safety
 - c) General Manager
 - d) DOE
 - e) MSHA

It is your right under the Act to report these. If you receive no action from your supervisor or Safety Department, you have the right to report them to MSHA.

Operations Safety Team has books in the U/G to write concerns in. S-1000, Waste Station, Wastehandlers U/G lunchroom. CH Bay and the Salt Collar.

This is a recommended chain of command. Some individuals entering the underground will have their manager on the surface. The U/G Rover and Mining Operations Manager(s) may be contacted for assistance first then the immediate manager.

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D. Safety Issues Involving Imminent Danger

1. If an area is found to have an imminent danger situation, immediately secure the area and notify the CMR.

E. Correction of Safety Issues.

1. When the problem requires repair, depending on the type job, you may be asked to be present.

F. 1. **DISCUSS LESSONS LEARNED ON UNDERGROUND SAFETY FINDINGS**

G. Training of Miners

1. As mentioned previously, you have the right to safety and health training. Any new task a miner is assigned to, the miner shall be trained. This training shall be at the normal place of employment and during normal working hours.
2. Refresher training is due every 12 months. You will be responsible to keep track of required training. The training must be completed by the end of the month due. If you go past the required

All employees acting as a "Miners Representative" have the right to stop work due to events involving imminent danger.

**Under the Act, posting violations must be in a conspicuous location, in public view, easy to read on a bulletin board.*

MSHA Inspections, Audits, Safety Inspections, Individual Findings.

Questions about your training can be answered by your training coordinator.

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<p>month, unescorted access to the underground shall be denied. In order to re-attain unescorted access to the underground, you must attend a refresher (SAF-502). Once you have 1 year of verifiable experience underground (evidenced by a completed MSHA 5000-23 form marked annual refresher), you will be considered a miner for life.</p> <p>III. SUMMARY</p> <p>A. Review the enabling objectives.</p>	<p>Place your 5000-23 form in a safe place. This is your proof of being an “experienced miner”. If you leave WIPP to work at another underground facility, you will need to supply this form to your new employer as a verification of training.</p>
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<p>I. INTRODUCTION</p> <p>A. Enabling Objectives</p> <p>3.1 State how many modes of ventilation are referenced in the Mine Ventilation Plan.</p> <p>3.2 State the purpose of the air splits in the underground.</p> <p>3.3 Describe the purpose of an air quality measurement.</p> <p>3.4 State the meaning of Green, Red, and White reflectors</p> <p>II. PRESENTATION</p> <p>A. Downcast (intake air) points include three shafts:</p> <p>*Air Intake Shaft (AIS)</p> <p>*Salt Handling Shaft (SHS)</p> <p>*Waste Handling Shaft (WHS)</p> <p>B. Exhaust air or Upcast is accomplished through one shaft known as the "Exhaust Shaft".</p>	<p>This section will be based on the current Mine Ventilation Plan and updated accordingly. The instructor shall ensure only the most current information is available and based on this plan. Students will be provided the most current Mine Map to follow along with the instruction.</p> <p>Show location on a current map.</p>
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<p>C. Basics of the intake shafts</p> <p>1. Air Intake Shaft (AIS) Located at w-620/0 north</p> <p>2. Salt Handling Shaft (SHS) This is the center line for the mine. It's actual coordinates are 0-N/0-S/0-W/0-E</p>	<p>The AIS is the primary source of fresh air (ventilation) to the underground areas. The AIS also serves as emergency backup for transporting Persons between surface and underground. The AIS is a minimum of 16 feet in diameter with the initial diameter of the unlined section nominally 20 feet. A single-deck working platform, called the galloway, is available for use in inspection and maintaining the shaft. The galloway is normally positioned at the bottom of the shaft where it has no effect on the air flow. The vertical location of the galloway in the shaft significantly influences the air flow down the shaft. The underground ventilation flow regulators located throughout the facility can be reset to accommodate the flow variations resulting from using the galloway.</p> <p>The SHS is the secondary source of fresh air to the underground. It is also used to transport salt to the surface, transportation for non-radiological material and personnel, and for routing power, control, and communications between the surface and underground. The SHS is the smallest of the vertical shafts, with the diameter of lined portion being 10 feet in diameter, and the unlined section at 11.8 feet through the salt.</p>
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5. Minimum Mode: 1 - 860 Fan	Approximately 60,000 CFM.
6. Filtration Mode: 1 - 860 fan with air directed through Exhaust Filter Building	This configuration provides 60,000 CFM but the air is routed through the exhaust filter building and the HEPA filter banks. AT THE PRESENT TIME FILTRATION MODE IS THE ONLY MODE BEING USED.
E. Using the mine map, show the four air splits, including the intake supply and exhaust air routes. Include a review of the symbols used on the map legend and link them to the ventilation routes.	E.O.# 3.2
F. To ensure all working areas of the mine are supplied with adequate air, all adjustments are made by the Underground Services Department. Their offices are located at the S-550 alcove in W-30, or can be reached by mine pager phone. Do not make any adjustments without their permission/direction.	E.O. 3.3 Dial telephone 8553
G. Evacuation routes (reflector identification)	E.O. 3.4
1. Green = Primary escape way	Green reflectors will lead you to a shaft station. Primary Egress route
2. Red = Secondary escape way	Red reflectors will lead you to a shaft station. Secondary Egress route
3. White = Traveling into the mine	White reflectors will lead you to the furthest place away from the shaft. USE CAUTION AND KNOW VENTILATION AND ESCAPE ROUTES.

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<p>III. SUMMARY</p> <p>A. Review the enabling objectives.</p>	
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<p>I. INTRODUCTION</p> <p>A. Enabling Objectives</p> <p>4.1 State who is required to perform ground inspections.</p> <p>4.2 Identify when a ground control inspection is required.</p> <p>4.3. State the purpose of a ground inspection.</p> <p>4.4 State the ways a ground inspection can be performed.</p> <p>II. PRESENTATION</p> <p>A. Ground Control</p> <p>1. General employee responsibility</p> <p>a. Your responsibility every day is to check your work area. If found deficient, report it and take corrective actions.</p> <p>b. Examination of the work area before starting work and as conditions warrant.</p> <p>(1) Visual inspection</p> <p>(a) Back</p> <p>i) cracks or separations</p>	<p>E.O. 4.1</p> <p>E.O. 4.2 Look for the obvious: cracks, separations, etc. Always be aware of conditions around your work area.</p> <p>E.O. 4.4 Bolts should be snug against back. If hanging out of hole, notify U/G Rover, or Underground Engineer.</p>
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<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> ii) loose materials found on floor requiring additional back inspection. iii) bolt condition (b) Rib <ul style="list-style-type: none"> i) cracks ii) bolt condition 2 Sounding <ul style="list-style-type: none"> c proper device usage: never sound or scale over your head B. Barriers vs. barricades <ul style="list-style-type: none"> 1 Definition: 2 "Barrier"- Any device which restricts access for a given or posted reason 3 "Barricade"- A device which prevents access of personnel, equipment, or flying objects. 4 Difference between barrier and barricade. 5 Typical mode ground failures 	<p>Loose mesh, loose or broken bolts.</p> <p>Rib falls can injure employees, tool</p> <p>Always inspect rib and bolts for integrity. If deficient, notify Rover or U/G Engineer</p> <p>Use of bolt or bar is the individual's choice. Always check. Never take a chance. Listen for a Hollow or Drummy sound, if found then a more detailed inspection may be required</p> <p>QUESTION: Give at least one example of a barricade and barrier. ANSWER: Barricade- Panels 1 and 2 Barrier- Stanchions, ribbons, and signs with date, initials of person erecting, and reason for barrier (ie- hazard identification).</p>
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<ul style="list-style-type: none"> a. Time-related failures b. Ground control practices c. Approved methods <ul style="list-style-type: none"> (1) Barraging down or scaling <ul style="list-style-type: none"> (a) Manually (b) Mechanically <ul style="list-style-type: none"> i) Specially designed Mobile Scaler. ii) Specially modified Skid steer loader (2) Rock bolting <ul style="list-style-type: none"> (a) Approved devices (b) Gripping mechanism (c) Proper torquing of bolts 	<p>Show "SPVD Room II" film.(if time permits or is requested. Most employees have already seen this video but it can be used as necessary).</p> <p>All unescorted underground personnel should always perform ground inspections prior to starting work. E.O. 4.4 Methods - visual, sounding/scaling, mining equipment</p> <p>Usually performed by mining operations.</p> <p>Usually performed by mining operations. Show samples to class.</p> <p>Type "A" bolt assembly- standard.</p> <p>Refer to samples</p> <p>MSHA requires that all bolts be torqued. The 1st, 10th, and last bolt in each sequence checked.</p>
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<p>C. Purpose of Ground Inspections</p> <p>(a) The purpose of a ground inspection is to ensure a safe work environment for the employee.</p> <p>III. SUMMARY</p> <p>A. Review the enabling objectives.</p>	<p>E.O. 4.3</p> <p>This is something you have direct control of. Take the time to do a complete inspection of the area and if anything is found questionable then make the proper notifications.</p>
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<p>I. INTRODUCTION</p> <p>A. Enabling Objectives</p> <p>5.1 Explain the entry requirements for Red, Blue, and White areas U/G.</p> <p>5.2 List the minimum PPE required to access the U/G.</p> <p>5.3 State the requirements for using access doors.</p> <p>II. PRESENTATION</p> <p>A. Underground Access Procedure WP04-AU3013</p> <p>1. Designated areas</p> <p>a. Red Areas; Entry to a red area is prohibited!</p> <p>b. Restriction Class 2 (blue areas): active working areas or areas requiring the placement of a controlled barrier. These areas can be self imposed to limit the personnel in the area. Entry to a blue area is obtained from the underground Controller and designated on the U/G access permit, and you must have permission of the person listed on the barrier.</p> <p>c. Restriction Class 1 (white areas): general areas of the mine with no restrictions.</p>	<p>E.O. 5.1</p> <p>Definition of a controlled barrier: A barrier with a written message on it.</p>
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<p>2. Violation of restricted areas (unauthorized entry)</p> <ul style="list-style-type: none"> a. Roving Supervisor may request individual(s) produce their physical copy of the underground access permit (UAP). b. If in violation of area restriction, individual may be escorted to the conveyance and physically returned to the surface. c. Subject to any actions determined appropriate by Management. <p>B. Personal Protective Equipment</p> <p>1. All personnel shall have as a minimum the following safety equipment:</p> <ul style="list-style-type: none"> a. Hard hat (Class "G" or greater) b. Safety glasses c. Safety boots/shoes d. Miner's lamp e. Self-rescuer f. Brass tag 	<p>E.O. 5.2</p> <p>NOTE : Hard hat ratings are: Class "G" - 2,200 volt di-electric property. Class "E" - 20,000 volt di-electric property. Class "C" - 0 volt di-electric property.</p> <p>NOTE: Brass in last before going U/G, first when returning from U/G.</p>
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<p>g. Underground access permit</p> <p>h. Miner's belt</p> <p>i. Radiological Protection</p> <p>j. <u>Reflective Clothing</u></p> <p><i>*Added on 6-19-15</i></p> <p>C. Transportation <i>Concur 6-23-15</i></p> <p>1. The conveyance <i>BPSingula</i></p> <p>a. Ringing of bells (shaft signals)</p> <p>b. Loading personnel</p> <p>c. Personnel with equipment</p> <p>d. Equipment/materials</p> <p>e. Hazards</p> <p>(1) Tripping</p> <p>(2) Exposure</p> <p>(3) Emergencies</p>	<p>Powered Air Purifying Respirator, Appropriate Level of Protective Clothing, (Determined by Rad Con)</p> <p><u>High-visibility outer clothing or vest. Explain the function and importance.</u></p> <p>Ringing of bells is performed by the Shaft Tenders (surface and underground), however the signals are posted at the shaft areas. Directed by the shaft tenders. Control all loose items to prevent them from falling down the shaft. (57.9260). Personnel cannot travel with compressed gas cylinders or flammables.</p> <p>Watch your step when entering/leaving conveyance</p> <p>Wear appropriate PPE during colder months</p> <p>Use of rope-a-coms and/or bells.</p>
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<p>2. Mobile equipment</p> <ul style="list-style-type: none"> a. Right-of-Way b. speed limit c. Tour groups d. Riding on vehicles e. Hazards <ul style="list-style-type: none"> (1) Protruding objects from back or rib (2) Low-hanging electrical cables (3) Broken roof bolts (4) Low ventilation ducts (5) Parked equipment (6) Uneven surfaces <p>3. Electric carts</p> <ul style="list-style-type: none"> a. Driver authorization b. Pre-operational checks are required prior to operating any equipment. 	<p>Yield to heavy or mobile equipment.</p> <p>"As fast as conditions safely permit."</p> <p>All mobile equipment shall pull to the rib, idle engine and wait until tour group has passed, if possible.</p> <p>Only where there is approved seating: (57.9200)</p> <p>Ie: remote ground control and ventilation monitors, roof bolts, C.A.M.s, etc.</p> <p>Remember 13.8 kV. suspended from the back.</p> <p>Notify U/G Services 8553 - Mine pager phone is best option</p> <p>Administered by Training</p> <p>Driver SHALL be currently authorized. Refresher yearly NOTE: Pre-operational checks are to be performed prior to operation of vehicle. If any safety item is deficient, the cart is not to be operated.</p>
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<p>c. Right-of-Way</p> <p>d. Speed limit</p> <p>e. Tour groups</p> <p>D. Air locks and doors</p> <ol style="list-style-type: none"> Ventilation Control Doors are metal structures or bulkheads, located throughout the underground. The doors are installed to allow for vehicle and/or personnel access. Many of the bulkheads are installed to form an airlock, i.e., two bulkheads separated to allow vehicles and/or personnel to close the first door before opening the second door. Vehicle Doors are normally equipped with pneumatic cylinders that open and close the doors. The cylinders are actuated by ropes attached to special electrical contacts suspended from the ceiling, or back. Each door has a set of pull ropes on both sides of the door in the normal travel path. A green colored rope to open the door, a red colored rope to close the door. Travel through these doors requires personnel to properly activate the door when it is safe to do so without endangering personnel or equipment. Some bulkheads are installed with man doors to allow individuals to pass through the structure on foot only. In vehicle door installations, the man doors are designated for emergency egress only and should only be used in an 	<p>Yield to heavy or mobile equipment.</p> <p>"As fast as conditions safely permit."</p> <p>Personnel shall slow to a speed that will ensure safe passing of a tour group.</p> <p>E.O. 5.3</p> <p>Doors are marked for proper configuration. Ensure personnel understand the importance of following instructions on doors.</p> <p>Note: not all air doors are interlocked (eg: s 1600 between W 30 and W 170).</p> <p>Air locks are interlocked, ensure first doors close before opening second door.</p> <p>NOTE: advise of dangers of vehicle doors opening while in man-door.</p> <p>Man-doors in vehicle doors are for emergency egress only.</p>
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emergency. In these airlock configurations significant pressure will be exerted on the man door should the opposite vehicle or man door be opened causing the door to shut forcefully if not controlled by the individual.

In single bulkhead installations, the doors are posted to advise personnel that significant pressure differential exists which may make the door difficult to open and could shut forcefully if not controlled by the individual traveling through the door.

In man door airlock installations significant differential pressure may exist. Travel through these man door airlocks should be undertaken by opening only one man door at a time

III. SUMMARY

Review Objectives

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<p>89I. INTRODUCTION</p> <p>A. Enabling Objectives</p> <p>6.1 Describe the purpose of a mine phone.</p> <p>6.2 State the appropriate locations to travel to when the evacuation (yelp) alarm is sounded.</p> <p>6.3 State the locations of the four assembly areas in the U/G.</p> <p>6.4 Explain the requirements for reporting occurrences in the underground.</p> <p>6.5 Describe the three lamp signals used in the underground.</p>	
<p>II. PRESENTATION</p> <p>A. Communication Systems</p> <p>1. Dial telephone system</p> <p>a. General communications</p> <p>2. Mine phone system</p> <p>a. General communications</p>	<p>Station-to-station calls, limited access during emergencies</p> <p>E.O. 6.1</p> <p>Most effective because of the availability, ease of operation, and the advantage of two-way communications.</p>

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<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> b. Best communication tool during emergencies 3. Public address system (CMR) <ul style="list-style-type: none"> a. Communications from CMR b. Primary vocal emergency notification system 4. Pros & cons of communication type usage <ul style="list-style-type: none"> a. Telephone system (dial) b. Mine Phone system c. Public address communication system B. Alarms systems <ul style="list-style-type: none"> 1. Fire <ul style="list-style-type: none"> a. Fire alarm is a yelp tone and a white strobe light. When activated, all personnel shall immediately suspend all U/G operations and proceed to the primary or secondary egress hoist station. b. Bells (local alarm) 	<p>Initiated by the CMR to the underground.</p> <p>Confidential calls</p> <p>Anyone can listen</p> <p>Non-confidential</p> <p>E.O. 6.2</p> <p>ALL Fires in the underground shall be reported to CMR IMMEDIATELY. Per WP12-ER4911</p> <p><i>*NOTE - Refer to AD3013 for alarm response action that affects the UG</i></p> <p><i>8/31/15 8.31.15</i></p> <p>Bell is local alarm activated by pull boxes</p>
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<ul style="list-style-type: none"> c. Beacon lights (blue) are mounted on the air doors to notify personnel the door has been activated. d. Public address system <ul style="list-style-type: none"> (1) Vocal (2) Alarm capabilities C. Emergency staging areas <ul style="list-style-type: none"> 1. Assembly areas <ul style="list-style-type: none"> a. Emergency equipment placement 2. Station area (Primary and Secondary) <ul style="list-style-type: none"> a. Primary evacuation point b. Secondary evacuation point D. Alarm notification actions <ul style="list-style-type: none"> 1. Retreat to station for evacuation <ul style="list-style-type: none"> a. Fire alarms/evacuation alarms are a Yelp tone 	<p>Verbal announcements</p> <p>Listen and follow instructions</p> <p>Can be heard in most areas of the mine</p> <p>Gong tone and announcement is what directs U/G personnel to assembly areas.</p> <p>E.O.6.3 Miners' Aid Stations, phone communications, emergency escape route maps, etc. Assembly Area locations 0 East - Salt Shaft, South 400 Waste Shaft, West 30 South 1000, East 140 South 1950 These will be noted on the Underground Controllers Board, if these change, you will get announcement from CMR</p> <p>Check the U/G controller board EACH DAY BEFORE going U/G for Primary and Secondary egress stations.</p>
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<ol style="list-style-type: none"> 2. Escape ways <ol style="list-style-type: none"> a. Primary b. Secondary 3. Retreat to assembly areas (gong tone) 	<p>Always try primary escape way FIRST, and stay in intake air if possible.</p> <p>You are in the exhaust air.</p> <p>Listen and follow instructions</p>
<p>E. Waste Transporter Notifications</p> <ol style="list-style-type: none"> 1. A flashing beacon light(s) of amber color will operate in the Waste Transportation Route to identify that a waste shipment is in progress to the Panel Disposal Area. 2. When waste is in transit, vehicles not performing WASTE HANDLING OPERATIONS shall move to an open cross-cut and be secured until the WASTE transporter/41 Ton Forklift has passed and is greater than 100 feet away. Vehicles that may have become disabled (excluding the lube truck) may be in the DISPOSAL PATH but must be secured along the wall of the DISPOSAL PATH. 3. Two transporters loaded with WASTE in the UNDERGROUND shall maintain greater than 100 feet separation between them. This separation distance does not apply if a transporter becomes disabled while loaded with WASTE and it is 	<p>What this means is when you see the Transporter headlights go into the nearest cross-cut to clear the drift (E-140 and current disposal panel) so the Transporter/41 Ton Forklift can safely pass. This includes vehicle traffic as well as foot traffic.</p> <p>If you are operating diesel equipment, go in the nearest cross-cut shut the engine off. Wait until the Transporter/41 Ton Forklift is nominally 100 feet away before starting engine and proceeding on your way. If entering the area from S-700 or S-1950 air locks, stop and do not enter the intersection until the lights are turned off. Please ensure the doors are closed behind you.</p> <p>Be aware of the diesel requirements in the panel area refer to WP 04-AD3013 and discuss with class.</p> <p>During normal operations this cannot violate the individual exclusion zones.</p>

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<p>necessary to either move another loaded transporter past or move WASTE from a disabled transporter to another transporter. If this situation occurs, a fire watch is required.</p> <p>4. The lube truck shall not be allowed in the DISPOSAL PATH while WASTE is in transit from the Waste Shaft Station to the ACTIVE DISPOSAL ROOM.</p> <p>5. No non-waste handling vehicles are allowed in the ACTIVE DISPOSAL ROOM during waste handling.</p> <p>6. No non-waste handling equipment is allowed within 100 feet of the waste face without a fire watch.</p> <p>7. No use of flammable gas or flammable gas cylinders in the ACTIVE DISPOSAL ROOM during waste handling.</p> <p>8. No flammable gas cylinders shall be used in the ACTIVE DISPOSAL ROOM without a FIRE WATCH being posted.</p> <p>9. The lube truck shall not be allowed in the ACTIVE DISPOSAL ROOM.</p>	
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<ol style="list-style-type: none">10. No flammable gas cylinders shall be used in the DISPOSAL PATH during WASTE HANDLING OPERATIONS.11. No construction work involving flammable gas cylinders at bulkhead 309 during WASTE HANDLING OPERATIONS.12. No construction work involving flammable gas cylinders between the disposal panel supply overcast and the construction bulkhead to the south in E-300 during WASTE HANDLING OPERATIONS.13. No flammable gas or flammable gas cylinders shall be stored between Air Intake Shaft and South 1000 in West 30 or on the north ventilation side within 100 feet of bulkhead 309.14. No hot work shall be performed within 100 feet of WASTE without a FIRE WATCH being posted.15. Temporary "Firewatch"	<p>Compensatory Actions are in place. Firewatch required for diesel equipment operation.</p>
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<p>E. Underground reporting of occurrences</p> <ol style="list-style-type: none"> 1. All underground non-emergency occurrences shall be reported in a timely manner to the individual's immediate manager and to the Underground Facility Engineer. The Underground Facility Engineer will report the occurrence to the Central Monitoring Room Operator (CMRO). 	<p>E.O. 6.4</p>
<p>F. Lamp signals</p> <ol style="list-style-type: none"> 1. Circular motion = come ahead 2. Side to side= STOP 3. Up and down = BACK UP NOW! 	<p>E.O 6.5</p> <p>Always pay attention to these signals and follow them immediately. These signals are to be carried out from the location of the person who gives the signal, no matter which direction the vehicle or person is positioned. Example: an up and down means to move <u>AWAY</u> from the person signaling. A circle motion means to move <u>TOWARD</u> the person signaling. <u>THE POSITION OF THE PERSON OR VEHICLE BEING SIGNED DOES NOT MATTER</u></p>
<p>III. SUMMARY</p> <p>Review the objectives</p>	

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<p>I. INTRODUCTION</p> <p>A. Enabling Objectives</p> <p>7.1 State which document contains the current evacuation and escape routes.</p> <p>7.2 Describe the primary and secondary escape route for each of the four air splits.</p> <p>II. PRESENTATION</p> <p>A. Escape ways are identified in the Escape and Evacuation Plan</p> <p>1. Primary (North)</p> <p>2. Secondary (North)</p> <p>3. Primary (south - Construction)</p> <p>4. Secondary (South - Construction)</p> <p>5. Primary (South -Disposal)</p> <p>6. Secondary (South -Disposal)</p> <p>7. Waste Shaft</p>	<p>E.O. 7.1</p> <p>E.O. 7.2 Review on mine map MARKINGS: Green - Primary Escape way Red - Secondary Escape way White - back INTO mine</p> <p>NOTE: Pay attention to announcement on public address system and mine phones for proper crossover points if given.</p>
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<p>B. Assembly areas</p> <ol style="list-style-type: none"> 1. Purpose <ol style="list-style-type: none"> a. Egress information point b. Personnel accountability prior to evacuation c. Emergency equipment location <ol style="list-style-type: none"> (1) First aid 2. Locations (North) <ol style="list-style-type: none"> a. Salt Handling Shaft 3. Locations (South -Construction) <ol style="list-style-type: none"> a. S-1000/W-30 4. Locations (South -Disposal) <ol style="list-style-type: none"> a. S-1950/E-140 5. Waste Shaft Station, S-400/E/140 	<p>Listen to announcements and follow instructions</p> <p>Upon direction by management. Normally accountability is taken on surface when exiting conveyance.</p> <p>NOTE: Miner's aid stations found at all assembly areas and are for emergency only. First Aid kits also available at shops, Underground Services (S-550/W-30), etc.</p> <p>NOTE: This is also a point to escape from the south areas of the Disposal Area.(IF DIRECTED BY MANAGEMENT)</p>
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<p>6. Personnel assembly duties during emergencies</p> <p>a. Employee responsibility</p> <ul style="list-style-type: none"> (1) Listen to announcements and follow instructions. (2) Immediately locate person in charge (PIC) of assembly area. (3) Inform PIC of brass tag number. <p>b. Person In Charge</p> <ul style="list-style-type: none"> (1) Access communication system and locate source of problem. (2) Relay personnel accountability information to surface, upon request by management (3) Relay information about egress to personnel. (4) Maintain calm environment. <p>III. SUMMARY Review the enabling objectives</p>	<p>May be a Manager or Rover or U/G Engineer, Station Tender</p>
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<p>I. INTRODUCTION</p> <p>A. Enabling Objectives</p> <p>8.1 State what steps to take if changing conditions could affect the safety of an individual or piece of equipment.</p> <p>8.2 State the requirements for U/G work-place pre-operation safety inspection.</p> <p>II. PRESENTATION</p> <p>A. Definition</p> <p>Accident: An unforeseen and unplanned event or circumstance causing loss or injury.</p> <p>B. Event happenings</p> <p>1. Failure of equipment</p> <p>2. Failure of a procedure</p> <p>3. Inappropriate actions of an operator</p> <p>4. Combination events</p>	<p>Always ensure a "zone of safety" around equipment.</p> <p>Stop. Contact Cognizant PIC and correct properly.</p>
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<p>C. Changing events</p> <ol style="list-style-type: none"> 1. Identification of possible hazards 2. Reporting of hazards 3. Correcting hazards <p>D. Pre-event recognition</p> <ol style="list-style-type: none"> 1. Proper inspection of the work place 2. Safety briefing during regular meetings 3. Evaluation of procedures against actual working conditions. 4. Discussion of lesson learned by other industrial events <p>E. Smoking Policy</p> <ol style="list-style-type: none"> 1. Smoking in the underground is allowed only in areas that are posted as a “DESIGNATED SMOKING AREA”. 	<p>E.O. 8.1 Never assume. Always have plenty of clearance. Always be alert.</p> <p>Stop work, secure area.</p> <p>Correct or Report. Initiate corrective actions.</p> <p>E.O. 8.2 First thing done each day and as necessary during the shift.</p> <p>Field validations.</p> <p>Use available fatal grams</p> <p>South90 @East 300, South700@West170.</p> <p>Cigarette butts are to be placed into the appropriate containers designated for “Cigarette Butts”. Do not throw cigarette butts on the floor, behind objects (as not to be readily seen) or anywhere else other than an approved cigarette butt container.</p>
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LESSON OUTLINE
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HOW
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II	SUMMARY	
	Review enabling objectives	

LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

<p>I. INTRODUCTION</p> <p>A. Enabling Objectives</p> <p>9.1 Describe the immediate actions to take in the event of an emergency.</p> <p>9.2 State the most effective way to notify the CMR of a medical emergency from the underground.</p> <p>II. PRESENTATION</p> <p>A. Immediate Actions</p> <p>1. Scene safety</p> <p>2. Report the emergency</p> <p>3. In case of an emergency in the underground, the Central Monitoring Room (CMR) is staffed around the clock, and all emergencies should be reported to the CMR.</p> <p>4. Notify anyone in the immediate area.</p>	<p>E.O. 9.1</p> <p>You cannot help someone if you become part of the problem.</p> <p>Call the CMR 8111. This is an Emergency Number only.</p>
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<p>B. Methods of emergency reporting</p> <ol style="list-style-type: none">1. The mine pager phone will most likely be the closest communication device available, however, this will depend on your location in the underground.2. If you are at or near a shop, shaft station or assembly area, there will also be a GTE type of phone. The emergency phone number at the CMR is 8111. <p>VIII. SUMMARY</p> <p>A. Review the enabling objectives</p>	<p>E.O. 9.2</p> <p>You should use whatever communication device is the closest and safest. Remember, the sooner you report, the sooner help will be on the way.</p> <p>When you report an emergency, you should give the CMR all the information you can regarding the event. The location, if personal injury is involved and how many, the type of event, and any other information that might help in the response and/or evacuation. Speak slowly and plainly.</p>
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LESSON OUTLINE
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<p>I. INTRODUCTION</p> <p>A. Enabling Objectives</p> <p>10.1 State the purpose of the self-rescuer.</p> <p>10.2 State what gas the miner is protected from by using a self-rescuer.</p> <p>10.3 State when the Ocenco EBA 6.5 SCSR is to be used.</p> <p>10.4 Describe the operating instructions for escape using the EBA 6.5.</p> <p>10.5 Explain how the EBA 6.5 operates.</p> <p>10.6 State the inspection requirements for the EBA 6.5.</p> <p>10.7 Explain the procedure for operation at rest for the EBA 6.5.</p> <p>10.8 Perform the donning procedure of the EBA 6.5</p> <p>10.9 State the locations of the SCSR caches in the underground.</p>	
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LESSON OUTLINE
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<p>II. PRESENTATION</p> <p>A. Definition</p> <p>Self-rescuer: A single-use respirator for escape purposes during underground fires.</p> <p>B. Purpose</p> <ol style="list-style-type: none"> 1. Used for emergency egress only, to be donned upon first indication of a fire. <p>C. Inspections</p> <ol style="list-style-type: none"> 1. Daily- outer case seal 2. Quarterly- color-code system 3. Ten years- useful life/15 year shelf <p>D. Protection for deadly carbon monoxide gas ONLY</p> <p>E. Conversion to what compound?</p> <ol style="list-style-type: none"> 1. Carbon monoxide is converted to Carbon Dioxide (Co2) 2. Catalytic conversion 	<p>E.O. 10.1 Both Units (W-65 and EBA 6.5)</p> <p>Replace if seal is broken.</p> <p>Check with lamp-room for current color band.</p> <p>Remove unit from service and replace.</p> <p>E.O. 10.2 This is an escape unit only, If a person was to be exposed to any other gasses, the proper Respiratory protection shall be provided.</p> <p>This process will generate heat in the Self Rescuer. The higher concentration of Co, the greater the amount of heat.</p>
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<p>F. When to use the EBA 6.5</p> <ol style="list-style-type: none"> 1. The EBA 6.5 should be used immediately at the first indication of a fire or explosion even though no smoke is visible. <p>G. Describe the operating instructions for escape using the EBA 6.5</p> <ol style="list-style-type: none"> 1. Safe operation of the EBA 6.5 requires an understanding of the twelve operating steps as follows. <ol style="list-style-type: none"> a. Pull the latch release rod. b. Lift and pull each latch ring to release bands c. Remove the cover from base. Grab the two handle straps and pull the case apart, discard the cover and rubber seal. d. Open the oxygen valve fully counterclockwise, in the direction of the arrow. e. Place neck strap over head. 	<p>Hopcalite- copper oxide & manganese oxide Converts CO to CO₂</p> <p>E.O. 10.3</p> <p>Carbon Monoxide can be present without smoke.</p> <p>E.O. 10.4</p>
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| <ul style="list-style-type: none">f. Pull mouth piece toward face. The mouthpiece plug will automatically be removed from the mouthpiece. Insert mouthpiece and breath through the mouth only. Use head strap for additional support of the mouthpiece, if required.g. Apply nose clips. Do not attempt to inhale or exhale through your nose.h. Purge the bag with oxygen to eliminate nitrogen: exhale, hold breath and deflate bag by pressing on the bag. Inhale deeply through the mouth piece, then breath normally (oxygen will be supplied from the demand regulator).i. Adjust the neck strap.j. Wrap the waist harness around the waist, clip and adjust for fit by pulling on the strap end.k. Place goggles over eyes to prevent irritation from smoke or other irritants.l. ESCAPE | |
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<p>H. Explain how the EBA 6.5 operates.</p> <ol style="list-style-type: none"> 1. The Ocenco EBA 6.5 is a closed circuit self contained self rescuer breathing apparatus. Its operation is completely independent of the surrounding atmosphere. Once it is properly donned the self rescuer will assist a person escaping from an area containing smoke, toxic gases, or an oxygen deficient atmosphere. 2. The operating life of the unit for escape is dependent on the demands of the user. This apparatus is approved by NIOSH/ MSHA as a 60 minute SCSR, based on the fact that the equipment, when tested on average sized men, performing moderate to heavy work, lasted 60 minutes or more. 3. The operating life of the unit is dependent on the following: <ol style="list-style-type: none"> a. The degree of physical activity. b. The physical condition of the user. c. The user's breathing rate. d. The degree of training or experience with this or similar equipment. 	<p>E.O. 10.5</p> <p>90 to 110 minutes is common</p> <p>How hard the user must work.</p> <p>Which can be considerably increased by excitement, fear, or other emotional factors.</p>
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<p>e. The condition of the apparatus.</p> <p>I. State the inspection requirements for the EBA 6.5.</p> <ol style="list-style-type: none">1. Check the pressure gauge reading. Remove from service if the gauge reading is below 2500psi at 70 degrees F (21degrees C)2. Inspect the latch seals. Remove from service if no factory installed seals are attached. If one of the two latch seals is removed, one seal may be replaced with a green seal available from Ocenco. One of the original factory installed latch seals must be present to permit the unit to remain in service.3. Inspect the unit for signs of high force impacts. Remove the unit from service if signs of strong impact are evident.4. Observe if the yellow mouthpiece plug is in place. Remove from service if the mouthpiece plug is displaced. <p>J. Explain the procedure for operation at rest for the EBA 6.5.</p>	<p>E.O. 10.6</p> <p>Do not open unit to inspect. Observe through the clear case.</p>
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<ol style="list-style-type: none">1. The EBA 6.5 has a feature that will extend the duration of the self rescuer. This feature obviously extends the user's life should an escape be delayed. It is important to emphasize escape and that these procedures should only be used during prolonged rest. (i.e. in excess of ten minutes).<ol style="list-style-type: none">a. Purge bag with oxygen to eliminate nitrogen: Exhale, hold your breath and deflate bag by pressing on the bag. Inhale deeply through the mouthpiece then breath normally. Repeat this step 2 more times.b. When the bag fills with oxygen close the valve (turn clockwise).c. When the bag becomes low, open oxygen valve (counterclockwise) to fill the bag.d. Repeat steps "b" and "c" until no longer at rest.2. Once the EBA 6.5 is operating and the user is at rest and comfortable, the bag will fill with breathable gas and would normally vent to the atmosphere through the relief valve causing loss of valuable	<p>E.O. 10.7</p> <p>When the user is sitting, resting, and relaxed, the life support will continue for about 5 to 8 hours depending on the person and his/her ability to use the EBA 6.5 to conserve oxygen.</p>
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<p>gas and shortened duration. By opening and closing the oxygen valve as needed, the user can prevent the loss of gas, thereby increasing the duration of the SCSR. Using this procedure will extend the use of the EBA 6.5 to five to eight hours depending on the user's ability to conserve oxygen.</p> <p>K. Perform the donning procedure of the EBA 6.5.</p> <ol style="list-style-type: none"> 1. Don the W-65 trainer. 2. Don the EBA 6.5 <p>L. Effect time limit</p> <ol style="list-style-type: none"> 1. Effective for one hour in a one percent concentration in air of carbon monoxide. The self rescuers should be donned upon first indication of a fire. 2. Remember to use the Primary escape way if possible, to known, tested, fresh air. <p>M. Components and operation</p> <p>N. State the locations of the SCSR caches in the underground</p>	<p>E.O.10.8</p> <p>Show DVD</p> <p>The W-65 trainer is used to simulate an MSA W-65, this will give the student a sense of realism. The W-65 trainer will be worn and transferred from to the SCSR.</p> <p>All personnel will don the SCSR.</p> <p>Once the seal is broken, the time limit starts. It should be donned and immediately leave the area.</p> <p>Refer students to handout.</p> <p>E.O. 10.9</p>
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<ol style="list-style-type: none">1. Intake drift, mining panel, near the neck or RM1. 18 SCSRs will be located in boxes in this area. The approximate distance from this point to the face of RM7, near the exhaust drift is 1160 ft. At a walking speed of 300 ft/min, it would take the miners 4 minutes to reach the cache.2. Intake drift, waste-handling panel, near the neck or RM1. 20 SCSRs will be located in boxes in this area. The approximate distance from this point to the face of RM7, near the exhaust regulator is 1320 ft. At a walking speed of 300 ft/min, it would take the waste handlers 4.5 minutes to reach the cache.3. A 3rd cache will be located at S2520/W30. This cache will house 30 units.4. A 4th cache will be located at S2520/W170. This cache will house 20 one-hour units.	
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5. The 5th cache will be located at S1300/W30. This cache will house 30 one-hour units.
6. The 6th cache will be located at S1300/W170. This cache will house 20 one-hour units.
7. The 7th cache will be located at S400/W170. This cache will house 20 one hour units.
8. The 8th cache will be located at S1600/E140. This cache will house 48 units.
9. The 9th cache will be located at S1600/E300. This cache will house 48 units.
10. The 10th cache will be located at N250/E250. This cache will house 20 units
11. The 11th cache will be located at S20/E300. This cache will house 20 units.

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HOW
(VISUAL AIDS, QUESTIONS, ETC.)

<p>12. The 12th cache will be located at N460/E140. This cache will house 27 units.</p> <p>13. The 13th cache will be located at N780/E0. This cache will house 27 units.</p> <p>14. The 14th cache will be located at S90/W700. This cache will house 4 units.</p> <p>15. The remaining 51 units will be used for the bottom landers at the Waste and Salt shafts, U/G Services and on the tour carts</p> <p>16. Strobe lights will be permanently attached at the cache location. These lights will be on 24 hours a day 7 days a week. The lights will be green in color.</p> <p>17. Signs leading to the cache locations will be a reflective green background with a white reflective arrow and white reflective lettering to read "To SCSR Cache". The signs will be posted along the ribs of the drifts.</p>	<p>There are a total of 349 units in the caches .</p> <p>In the event of loss of power, the lights are equipped with battery backup.</p> <p>Drawing # 74-G-001-W shows the location of all caches.</p>
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LESSON OUTLINE
(WHAT YOU WILL TEACH)

HOW
(VISUAL AIDS, QUESTIONS, ETC.)

<p>III. SUMMARY</p> <p>Review the enabling objectives</p>	
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ATTACHMENT 28
WP 12-ER.12 WIPP ABNORMAL CONDITION DRILL PROGRAM
18 PAGES

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Revision 0

WIPP Abnormal Condition Drill Program

Cognizant Organization: Emergency Management

Approved By: David Stuhan



A URS-led partnership with B&W and AREVA

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CHANGE HISTORY SUMMARY

REVISION NUMBER	DATE ISSUED	DESCRIPTION OF CHANGES
0	10/08/14	• New document.

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1.0 INTRODUCTION ^{1,2}

Abnormal Condition Drills are based on hazards and risks associated within a given facility/activity/project. The intent is to fulfill requirements for operating organization (Facility Operations, Radiological Controls, etc.) personnel while providing reasonable assurance those personnel have, or can acquire, the knowledge, skills, and abilities needed to operate and maintain the facility in a safe and reliable manner under all conditions. The depth and scope of training and qualification/certification programs for operating organization personnel at nuclear facilities must be commensurate with the hazard level and complexity of activity/project operations. The U.S. Department of Energy (DOE) Handbook DOE-HDBK-1099-96, "Establishing Nuclear Facility Drill Programs," or successor document, provides guidance for development or modification of drill programs that both train on and evaluate facility training and procedures dealing with a variety of abnormal and emergency operating situations likely possible.

A simple drill scenario may often accomplish training objectives more effectively than a complicated one; however, the more detailed the drill scenario in terms of cues, props, and specific duties of Evaluators and safety representatives, the fewer chances there are for a problem to occur during the Abnormal Condition Drill. In any case, drills should not lead to or have the potential to create safety or security concerns.

WP 12-ER3006, *Abnormal Condition Drills*, prescribes the process for Abnormal Condition Drill conduct and evaluation. For more complex drill activities, Abnormal Condition Drills will be integrated into the Emergency Management (EM) Exercise and Drill structure, as needed.

1.1 Purpose

This document describes the Waste Isolation Pilot Plant (WIPP) Abnormal Condition Drill Program (ACDP) and provides the standardization for the development of abnormal condition drills at the operations-level. Its purpose is to standardize and provide a consistent approach for developing and conducting WIPP Abnormal Condition Drills.

The ACDP ensures drills are conducted in a safe manner, describes the method to identify and analyze hazards, and provides the framework to develop and implement controls.

This document does not include responses of personnel beyond the site boundary, e.g., Local or State Emergency Management or Law Enforcement.

1.2 Scope

The intent of the ACDP is to foster an awareness of abnormal conditions and to reinforce proper conduct of operations principles. It also provides management with a tool to evaluate the overall ability of personnel to effectively and properly perform in abnormal conditions.

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DOE Order 426.2 requires continuing training programs for certified operations personnel to consist of preplanned classroom-type training, on-the-job training, and operational evaluations on a regular and continuing basis. Further, it requires that this training includes biennial operational drills conducted in the facility or on a simulator. It goes on to specify that “facility evacuation drills are *not* considered operational drills.” Training drills conducted in the facility must not lead to or have the potential for safety or security concerns. Facility evacuation drills are not considered abnormal condition drills. Drills and exercises performed under the Emergency Management Drill and Exercise Program are not considered abnormal condition drills.

2.0 ROLES AND RESPONSIBILITIES

2.1 Emergency Management Manager

The EM Manager is responsible for:

- Managing the ACDP.
- Providing support to the Abnormal Condition Drill Coordinator, as needed.
- Reviewing and approving ACDP procedures, templates, and forms.
- Managing continuity between the ACDP and the EM Drill and Exercise Program.

2.2 Responsible Functional Managers

Responsible Functional Managers are responsible for:

- Ensuring participation and compliance with the ACDP.
- Ensuring abnormal condition drills are conducted, as scheduled.
- Providing Controller and/or Evaluator trained staff for drill activities.

2.3 Abnormal Condition Drill Coordinator

The Abnormal Condition Drill Coordinator is responsible for:

- Obtaining unique drill numbers for Abnormal Condition Drills from the EM Drill and Exercise Number Log for every drill conducted.
- Being knowledgeable about the drill process and operating procedures.
- Being knowledgeable about hazard identification, analysis, and mitigation.

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- Ensuring safe conduct, coordination, continuity, evaluation, and critique of abnormal conditions drills.
- Ensuring that there are an appropriate number of Controllers/Evaluators for the drill conditions and objectives.
- Ensuring that Controllers/Evaluators are briefed on the drill purpose, content, objectives, and evaluation criteria prior to drill conduct.
- Developing Abnormal Condition Drill Plans, Evaluations, and After Action Reports (AAR) in accordance with the approved templates.
- Providing copies of attendance sheets to Technical Training.
- Maintaining record copies of approved Abnormal Condition Drill Plans and AARs within the EM Drill and Exercise HONDO ACD file as a record in accordance with the Operations Records Inventory and Disposition Schedule (RIDS).
- Preparing an Abnormal Condition Drill AAR (drill summary) subsequent to each drill to document the event within 20 working days.
- Submitting Abnormal Condition Drill AAR to Technical Training.
- Maintaining the completed AAR, evaluation forms, etc., as a record in accordance with the Operations RIDS.
- Tracking corrective actions or substandard drill performance issues in accordance with WP 15-GM1002, *Issues Management Processing of WIPP Forms*.

2.4 Lead Controller

The Lead Controller is responsible for:

- Maintaining required Controller/Evaluator Training qualifications.
- Supporting the Abnormal Condition Drill Coordinator and sharing responsibility for safe conduct, coordination, continuity, evaluation, and critique of the drill.
- Being knowledgeable about the drill process and shall be familiar with applicable operating procedures.
- Being knowledgeable about hazard identification, analysis, and mitigation.
- Facilitating the conduct of the Abnormal Condition Drill by providing simulated abnormal or emergency data, as determined by the drill scenario and objectives.

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- Ensuring current procedures available for drill participants prior to drill initiation when a task being performed normally requires “in-hand” procedures.
- Monitoring the sequence of events, controls the flow of messages, and is responsible for the overall conduct of the exercise.
- Being knowledgeable of the application and interpretation of cues and props as they apply to specific Abnormal Condition Drill scenarios and/or project-specific procedures.
- Being knowledgeable of facility equipment locations, operating characteristics, other facility requirements, and consequences of improperly interpreted cues and props.
- Coordinating player, controller, evaluator, and observer personnel per the established requirements.
- Ensuring one or more members of the drill team have sufficient knowledge of the facility Technical Safety Requirements (TSRs), as applicable.
- Ensuring sufficient precautions and limitations are established and adhered to for the safe conduct of the drill.
- Performing a walkthrough of the area prior to the drill, when needed, to ensure the area can support the drill.
- Facilitating evaluations and critiques.
- Maintaining overall confidentiality of the drill.
- Assuming the responsibilities of evaluator, as necessary.
- Conducting a post-abnormal condition drill hotwash to discuss strengths, weaknesses, and improvement items with an emphasis on procedures/checklists, equipment, and facility support systems.
- Reinforcing the importance of being self-critical.

2.5 Controllers

- Maintaining required Controller/Evaluator Training qualifications.
- Being knowledgeable of the objectives and scope of the drill.
- Being knowledgeable of potential scenario responses by facility personnel.

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- Attending pre-drill briefings to ensure understanding of specific drill requirements.
- Being knowledgeable of the applicable TSR requirements.
- Accepting assignments for specific locations or drill functions.
- Assuming responsibility for the safe and effective conduct of his/her portion of the drill.
- Ensuring that the WIPP Authorization Basis is not challenged by player activities.
- Allowing the freedom of player decisions and actions to demonstrate drill objectives and response capabilities.
- Not allowing participants to take any actions that would adversely affect safety, security, environment, or cause equipment damage.
- Performing evaluator duties, when required, observing and documenting performance, and providing a formal evaluation after the Abnormal Condition Drill is terminated.

2.6 Evaluators

- Being familiar with the drill scenario.
- Being familiar with the objectives and scope of the drill, including correct responses by the drill players.
- Receiving briefing on general and specific instructions pertaining to his or her particular roles and responsibilities prior to start of the drill.
- Maintaining required Controller/Evaluator Training qualifications.

3.0 ABNORMAL CONDITION DRILL DEVELOPMENT

3.1 Types of Abnormal Condition Drills

3.1.1 Administrative-Based Drills

Administrative-based drills are typically driven by conditions that require a specific response based on procedures, checklists, and other processes. These drills are used to evaluate familiarity with equipment, processes, and alarm response.

Administrative-based drills can be requested to be performed immediately, during a given shift, or during a specified period of time, such as during a normal work week. A designated evaluator will critique the response actions and document their evaluation

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on an Administrative Drill Evaluation Criteria form (EA12ER3006-4-0), in accordance with WP 12-ER3006. Results will be shared with the performer.

3.1.2 Discussion-Based Drills

Discussion-based drills (e.g., tabletops, games, workshops, seminars) are typically conducted in a classroom or work area and are used to allow discussion and instruction regarding the expected response to an abnormal situation. This may include role-play and should also include a review of the appropriate procedures to be utilized when responding to the abnormal situation. Discussion-based drills may be utilized as a precursor to an operations-based drill. Discussion-based drills are documented using an Abnormal Condition Drill Plan (EA12ER3006-1-0) and "Training Attendance Roster."

3.1.3 Performance-Based Drills

Performance-based drills are typically conducted in the participant's work area and/or location of responsibility. Participants should demonstrate component and system interrelationships by demonstrating operations and characteristics of each system (when approved). The objectives should allow the participant to apply knowledge of facility systems, components, procedures, and requirements while operating the equipment involved. Team interaction is a component of the performance-based drill that allows for individual crew/team members to demonstrate effective control of plant/facility operations and events.

3.2 Abnormal Condition Drill Plan

Abnormal Condition Drill Plans are developed in accordance with WP 12-ER3006.

The Abnormal Condition Drill Coordinator shall develop an Abnormal Condition Drill Plan for each drill scenario, in collaboration with other stakeholders and with review by the following individuals, based on drill location and organizations involved in the drill, as appropriate:

- Functional Area Manager (Facility Operations, Hoisting, Waste Handling, Underground Services, Radiological Controls)
- A subject matter expert (e.g., facility engineer, Radiological Controls)
- Project Lead
- Industrial Safety Manager for drills performed in locations other than the Central Monitoring Room (CMR)
- EM, if the drill involves the following response assets: Emergency Services Technicians, Emergency Response Team, or Mine Rescue Team
- Security, if the drill involves response to security related events

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The Abnormal Condition Drill Coordinator shall include the following in Abnormal Condition Drill Plans:

- Unique Drill Number
- Purpose/Scope
- Participants/Pre-Drill Brief
- Objectives/Evaluation Criteria
- Initial Conditions
- Precautions/Limitations
- Initiating Events
- Termination
- Cue cards, maps, diagrams, schematics, and/or data tables that provide additional scenario information, as needed.

3.3 Abnormal Condition Drill Objective Development

The Abnormal Condition Drill Coordinator shall select Abnormal Condition Drill objectives from facility/activity/project-specific procedures, measure objectives against approved plans and procedures, and incorporate formality of operations principles (e.g., formal titles, repeat backs) into drill objectives. The Coordinator shall write objectives that are realistic, measurable, understandable, and achievable. Objectives are to contain a condition that must be present, the action to be taken, and the standard measuring satisfactory performance (plans/procedures or description of the action to be taken).

3.4 Abnormal Condition Drill Scenario Development

The Abnormal Condition Drill Coordinator shall perform the following:

- Develop Abnormal Condition Drill scenarios that describe the pre-drill conditions and the circumstances that cause an event/condition to occur.
- Base the scenario on objectives associated with the hazards and risks for project activities (e.g., Documented Safety Analyses, Technical Safety Requirements, etc.).

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- Consult facility- or project-cognizant person(s), Subject Matter Experts (SMEs), and/or trusted agents (e.g., Engineer, Facility Representative, Health Physicist) during the Abnormal Condition Drill development process to ensure the scenario is credible, realistic, and allows for demonstration of drill objectives.
- Avoid including facility or project personnel that are likely to be drill participants in the scenario development process, to the extent possible.
- Obtain approval for the drill scenario from the Functional Manager and concurrence from the Project Lead, as applicable.
- Validate the scenario to determine its credibility, technical accuracy, and safety implications with assistance from the Project Lead or other SMEs, if applicable, and Emergency Management, if necessary.

3.5 Drill Selection

The Abnormal Condition Drill Coordinator shall determine which drill to conduct based on the following criteria:

- Experience of the personnel to be assessed
- Past drill performance
- Open issues involving operator performance from internal or external assessments
- Lessons Learned
- Weather conditions
- Facility operations and/or maintenance priorities

4.0 DRILL PLAN GUIDANCE

Drills will be conducted using the approved drill plan and in accordance with WP 12-ER3006. Drills may be tabletop discussions or field play. A tabletop drill is a facilitated analysis of an emergency situation in an informal, stress free environment. Tabletop drills are designed to examine operations plans and procedures, identify problems, and facilitate in-depth problem solving. Field play drills assess capabilities of an organization to respond to a simulated event. Examples include, but are not limited to, loss of power, hoist failure, equipment/instrument alarms, loss of ventilation, loss of compressed air, etc. Field play drills strive for realism, deploying staff and equipment.

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The drill plan should be developed to allow for flexibility in the initiation of the drill (alternate initiation sequences), to allow for increased complexity in the scope of the drill (small spill, radiation levels, injured/contaminated individuals, etc.), and to accommodate situational-specific management expectations.

The Abnormal Condition Drill Coordinator and Responsible Functional Manager(s) shall determine initiation sequence, scope of the drill, and management expectations in a pre-drill planning meeting. This information will be documented. A drill plan should, at a minimum, clearly identify and specify the following information:

- Specific objectives to be demonstrated
- Drill impact on plant activities
- Required initial conditions
- Responsibilities and location of drill controllers/evaluators
- Required pre-drill and post-drill notifications
- Limitations in facility conditions or parameters that must be maintained
- Special conditions or instructions for drill controllers, evaluators, observers, or safety monitors
- Drill abort criteria for situations that could challenge operating limits
- Method of drill initiation
- Summary of expected drill responses
- Condition or point when drill will be terminated
- Final conditions, including restoration requirements necessary to return facility equipment to those conditions
- Drill props as required

To the maximum extent possible, the drill setup should not prompt or give away the selected drill. Obvious changes from the “normal condition” of a system or facility prior to the drill initiation should be minimized.

Use of installed alarms and equipment is preferred when giving indications of an abnormal condition for the drill. Caution is required when adjusting installed equipment to ensure that safety-basis limits or equipment operability limits are not compromised to

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run the drill. No limit is to be exceeded. Any limits that may be challenged must be noted in the drill safety plan and drill plan expected actions section

Normal Radiological Controls requirements apply during a drill. Caution is required to ensure that the drill does not violate actual Radiological Controls requirements (for example, surveying out of a buffer area) for the players and the drill team.

The drill plan should minimize the size of the drill team to those necessary to safely conduct and evaluate the drill. Excessive drill team personnel may affect the normal response of the players due to a confined area or system.

The drill plan should ensure that consistent indications are provided for any equipment related to the original equipment indication. For example, a related continuous air monitor (CAM) should read consistently with the original CAM reading to provide a proper backup indication to the players.

The drill plan expected actions section should be consistent with approved procedures. Actions that are "Good Practices," but are not required by procedure, should be noted as such in the drill plan.

5.0 EVALUATION

5.1 Evaluation Criteria

The Abnormal Condition Drill Coordinator is responsible for establishing Evaluation Criteria. Criteria shall be established for each drill to assess the performance of the participants against the various objectives. Established objectives and criteria shall be used as the basis for the evaluation. The evaluation process shall include provisions for documenting observations and maintaining a time chronology of events by each evaluator. Copies of the players' documentation (such as logs and checklists) should be retained with the drill records. EA12ER3006-3-0, *Abnormal Condition Drill Evaluation Criteria*, shall be used to track and record performance evaluations, in accordance with WP 12-ER3006.

5.2 Drill Critiques

The general purpose of a drill critique is to provide a forum in which aspects (positive and negative) of the drill are discussed among the participants and which results in identification of "lessons learned" for improving the personnel performance. Drill critiques are scheduled and conducted in accordance with WP 12-ER3006.

A drill critique shall be conducted to maximize the benefit and learning experience from each drill and shall address all aspects of the drill (that is, player response, scenario, and controller response), including the following:

- A review of scenario events, identification of shortcomings in the scenario or drill conduct, and analysis of expected and actual player actions

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- Assessment of player performance, adequacy of procedures and other documentation, and adequacy of facilities and equipment against criteria checklists
- Identification of strengths, deficiencies, recommended improvements, and lessons learned
- Identification of a pass/fail grade for objectives evaluated (based on measurable criteria). All “key” objectives, as identified in the drill plan, must be met to successfully pass a drill.

5.3 After Action Reports

The Abnormal Condition Drill Coordinator is responsible for developing an Abnormal Condition Drill AAR (EA12ER3006-2-0), in accordance with WP 12-ER3006.

5.4 Corrective Action Plan

If performance of an Abnormal Condition Drill is evaluated as substandard by the Abnormal Condition Drill Coordinator, the Functional Area Manager(s) shall prepare a Corrective Action Plan in accordance with the Issues Management Process to correct deficiencies identified during the drill. The plan will be developed by reviewing the recommended corrective and improvement items resulting from the drill evaluations and critiques. Successful performance of an additional drill(s) shall be required if a drill is failed.

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REFERENCES	
DOCUMENT NUMBER AND TITLE	KEY STEP
DOE-HDBK-1099-96, <i>Establishing Nuclear Facility Drill Programs</i>	1
DOE O 151.1C, <i>Comprehensive Emergency Management System</i>	
DOE O 426.2, <i>Personnel Selection, Training, Qualification, and Certification Requirements For DOE Nuclear Facilities</i>	2
WP 12-9, <i>Waste Isolation Pilot Plant Emergency Management Program</i>	
WP 12-ER3004, <i>WIPP Drills and Exercises</i>	
WP 12-ER3006, <i>Abnormal Condition Drills</i>	
WP 15-GM1002, <i>Issues Management Processing of WIPP Forms</i>	
EA12ER3006-1-0, <i>Abnormal Condition Drill Plan</i>	
EA12ER3006-2-0, <i>Abnormal Condition Drill After Action Report</i>	
EA12ER3006-3-0, <i>Abnormal Condition Drill Evaluation Criteria</i>	
EA12ER3006-4-0, <i>Administrative Drill Evaluation Criteria</i>	

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Attachment 1 – Definitions

Abnormal Condition Drill Coordinator: A knowledgeable, experienced person who ensures that drills are conducted safely and that all participants follow approved, established procedures. This individual has the overall responsibility for safe conduct, coordination, continuity, evaluation, and critique of the drill. The Abnormal Condition Drill Coordinator has overall responsibility for drill control.

Controller: A knowledgeable, experienced individual, who helps ensure that operations drills are conducted in a safe manner and that all participants follow approved, established procedures. The controller provides drill participants with critical information concerning the simulated events in the drill scenario.

Corrective Actions: Those actions identified to remedy any deficiencies, weaknesses, or improvement items identified during a drill critique.

Deficiency: A failure to achieve expected evaluation criterion. Deficiencies are the highest priority for expediting corrective actions and tracking them to closure in accordance with the Issues Management Process.

Drill: A supervised, hands-on instruction period intended to develop and/or maintain a specific response capability.

Drill Conduct: The control and evaluation of a drill in a fashion that will safely, fairly, and accurately allow participants to demonstrate the adequacy of their response capabilities by providing positive drill command and control, trained controllers/evaluators, and a valid drill evaluation process.

Drill Plan: A pre-approved document used to initiate, perform, evaluate and terminate a drill.

Drill Safety Monitor: A person responsible for the safe conduct of activities in the designated area of responsibility. The drill safety monitor ensures participants do not take any actions that would adversely affect safety or cause equipment damage. No other responsibilities are assigned to this individual.

Drill Team: Group of people conducting, monitoring, and evaluating the drill (Abnormal Condition Drill Coordinator, controllers, evaluators, observers, safety monitors).

Expected Actions: Actions expected from players in respect to drill scenarios.

Evaluation Criteria: Standards the controllers/evaluators use to determine when an objective has been adequately demonstrated. Evaluation criterion are developed for each drill objective and based on procedure requirements, facility safety basis, and good operating practices.

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Attachment 1 – Definitions

Evaluator: A person assigned to a specific drill for the purpose of evaluating, recording, and reporting the strengths and weaknesses of players' activities and functions. An evaluator makes recommendations for improvements to the facility, equipment, or personnel performance. Controllers may also serve as evaluators. The drill coordinator has overall responsibility for drill evaluation. Evaluators may concurrently fulfill the role as a controller if the added responsibility does not adversely impact the safety of the drill activities.

Facility Walkthrough Drill: A supervised instruction period that involves talking through and completing actual response actions using response equipment. The drill controller presents the drill plan scenario information and the control activities. Performance may be evaluated.

Improvement Item: An observation or finding citing deviations or concerns regarding a particular criterion. An improvement item, by itself, does not degrade the adequate demonstration of an objective, but the operator response could be made more effective if improvements were implemented. An improvement item has the lowest priority for expediting corrective actions.

Intervention Point: Action during the drill that requires the drill team to prevent any adverse safety conditions or cause damage to equipment. Specify intervention points in the drill plan and discuss in the drill brief, all.

Key Criteria: Criteria identified that must be successfully demonstrated to satisfy the intent of its respective objective.

Key Objective: Objective(s) identified that must be successfully demonstrated to satisfy the intent of the scope of the drill.

Messages: Information used to control the progress of the drill; also known as controller injects, cue cards, data input, and so on.

Objectives: Specific performance objectives established for drills. These objectives are designed to demonstrate or test specific portions of all applicable procedures.

Observer: An individual observing a drill who is not authorized to interact with players. An observer may provide an assessment based on observations; however, the role of an observer is intended to be less formal, not requiring any assessment.

Participant: An individual who has some part in the drill, whether as the coordinator, an evaluator, controller, player, safety monitor, or observer.

Player: A member expected to respond during a simulated event.

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Attachment 1 – Definitions

Scenario: A hypothetical situation that causes a reenactment. The reenactment serves as a theme or basis upon which the action of a drill unfolds to meet the established goals, scope, and objectives. A scenario contains adequate information (technical data) on facility operations and other conditions to allow drill participants to respond in the most realistic manner possible.

Scope: Specified goal(s) of the drill and extent of participation.

Simulate: Role playing. (See Simulation.)

Simulation: An enactment representing an abnormal situation. Also, specific events of the scenario may be simulated for practical reasons during a drill (use of sirens, operations of critical facility equipment, entrance into high-radiation areas, and so on). Players respond to the simulated sequence of events by playing out all actions in accordance with facility procedures, as if it were a real situation. Controllers may perform some of the simulations, that is, play-acting contaminated injured person, role-playing non-participating individuals and organizations, using drill props, and describing in vivid terms facility and equipment damage (where drill props are not practical).

Table-Top Drill: A supervised training consisting of “talking through” responses and instructions with minimal performance activities. The table-top drill may also include a follow-up facility (drill) walkthrough.

Unexpected Actions: Actions that players may perform that adversely affect safety, cause equipment damage, or cause the drill scenario to significantly change.

Weakness: A finding indicating an inability to meet evaluation criterion, thus degrading the demonstration of an objective. A weakness must be addressed by the evaluated organization for corrective action and tracked to closure. As a priority, a weakness is lower than a deficiency but higher than an improvement item.

ATTACHMENT 29
WP 12-ER.13 WIPP DRILLS AND EXERCISES
65 PAGES

WP 12-ER.13
Revision 0

WIPP Drills and Exercises

Cognizant Department: Emergency Management

Approved By: David Stuhan



A URS-led partnership with B&W and AREVA

WIPP Drills and Exercises
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REVISION NUMBER	DATE ISSUED	DESCRIPTION OF CHANGES
0	11/20/14	• This is a new document.

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ABBREVIATIONS/ ACRONYMS

AAR	After Action Report
ACD	Abnormal Condition Drill
ACDC	Abnormal Condition Drill Coordinator
CAP	Corrective Action Plan
CBFO	Carlsbad Field Office
C/E	Controller/Evaluator
CFR	Code of Federal Regulations
COOP	Continuity of Operations Program
CMR	Central Monitoring Room
CMRO	Central Monitoring Room Operator
COW	Chief Office Warden
DEP	Drill and Exercise Program
DHS	U.S. Department of Homeland Security
DOE	U.S. Department of Energy
EEG	Exercise Evaluation Guide
EM	Emergency Management
EM&S	Emergency Management and Security
EMS	Emergency Medical Services
EOC	Emergency Operation Center
EPHA	Emergency Planning Hazards Assessment
EPHS	Emergency Planning Hazards Survey
ERO	Emergency Response Organization
ERT	Emergency Response Team
EXPLAN	Exercise Plan
FE	Functional Exercise
FM	Functional Manager
FPE	Full Participation Exercise

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FSE	Full Scale Exercise
FSM	Facility Shift Manager
HQ	Headquarters
HSEEP	Homeland Security Exercise and Evaluation Program
MSEL	Master Sequence of Events List
NFPA	National Fire Protection Association
NNSA	National Nuclear Security Administration
NNX	No Notice Exercise
NRNF	Non-Reactor Nuclear Facility
NWP	Nuclear Waste Partnership LLC
OUO	Official Use Only
RADCON	Radiological Control
SME	Subject Matter Expert
SOG	Standard Operating Guide
SWB	Skeen-Whitlock Building
UG	Underground
WIPP	Waste Isolation Pilot Plant

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1.0 INTRODUCTION¹

The Emergency Management and Security Department (EM&S) is responsible for conducting exercises in support of the U.S. Department of Energy (DOE), Carlsbad Field Office (CBFO) Emergency Management (EM) Program. The Drill and Exercise programmatic elements are designed to provide training, examine personnel response and activity notifications, implement procedures, and evaluate the effectiveness and capabilities of the entire Waste Isolation Pilot Plant (WIPP) Emergency Response Organization (ERO). The overall goal of the Drill and Exercise Program (DEP) is to identify opportunities for continued improvement as required by U.S. Department of Energy Order DOE O 151.1C, *Comprehensive Emergency Management System*, or successor document. This plan provides guidance and requirements for developing drills and exercises conducted for a facility or activity. Facility-specific hazards and hazards associated with nearby facilities are encompassed as applicable within each drill or exercise developed and conducted.

This plan addresses drill and exercise scheduling, planning, and conduct, as well as post-drill and exercise reporting and associated activities. This procedure applies to all facilities/activities managed by Nuclear Waste Partnership, LLC (NWP), including the Skeen-Whitlock Building (SWB) or other NWP facilities.

This plan does not address specific training requirements. Training requirements for facility personnel are addressed in respective training documents.

This plan does not address training drills developed by WIPP Fire/Emergency Medical Services (EMS) to meet the requirements identified in National Fire Protection Association (NFPA) standards for qualifications.

This plan applies to all NWP employees and subcontractors who participate in, develop, coordinate, or evaluate drills and exercises.

This plan will be fully implemented on the document effective date.

- Records created by implementing this plan include files accumulating from tests conducted under DOE emergency plans, such as instructions to members participating in tests, staffing assignments, messages, tests of communications and facilities, and reports EXCLUDING consolidated and comprehensive reports. Includes documentation of drill exercises scenarios, critiques, recommended corrective actions, and participant sign-in sheets.

1.1 Program Overview

WP 12-9; *WIPP Emergency Management Plan*, or successor document requires that each DOE/CBFO general facility or activity conduct evacuation and shelter-in-place (personnel accountability) drills annually as required by Title 29 Code of Federal

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Regulations (CFR) Part 1910.38, "Emergency Action Plans," or successor document. The WIPP has one Category II/Non-Reactor Nuclear Facility (NRNF). The NRNF includes the Underground (UG) and Waste Handling Building that must conduct periodic (quarterly or four annually, at a minimum) drills that include both discussion-based drills and operations-based drills to ensure facility-level responders are prepared to respond to an actual emergency.

At a minimum, the WIPP is required to conduct an evaluated facility operations-based exercise annually. In addition, every 3 years the WIPP site will perform a site-level operations-based exercise that includes external evaluation and invitations to offsite response organizations, known as a Full Participation Exercise (FPE).

The WIPP site will support and implement an Abnormal Condition Drill (ACD) Program. The ACD Program will test and evaluate personnel on facility- and project-specific response procedures. This allows WIPP and project personnel to test the effectiveness of response procedures.

The ACD Program will support training prerequisites for certified/qualified personnel as identified in DOE O 426.2, *Personnel Selection, Training, Qualification, and Certification Requirements for DOE Nuclear Facilities*, or successor document, and the Readiness Activities identified in DOE O 425.1D, *Verification of Readiness to Start Up or Restart Nuclear Facilities*, or successor document.

EM&S will provide oversight and guidance for WIPP ACD Program. This will ensure the ACD Program is following internal requirements of this plan and the external requirements of DOE O 426.2. Planning a drill or exercise requires the involvement and cooperation of all stakeholders and participating organizations/agencies. A well-planned, well-executed, and well-documented drill or exercise requires the coordination, cooperation, and approval of all participating organizations/agencies. The level of coordination and planning with offsite organizations/agencies is dependent on the extent of their participation in the drill or exercise.

Offsite participation in a drill or exercise can vary from receiving notifications (e.g., *WIPP Emergency Notification and Update Form, Situation Report*), staffing a simulation cell, or acting as limited first-responders, all the way to fully activating response facilities and assets. The drill and exercise planning process allows adequate time for effective preparation and review of the drill or exercise plan (EXPLAN) and associated supporting documents (*Control Cell Plan, Communications Plan*, etc.). Each member of the ERO is required to participate in one drill or exercise annually to demonstrate proficiency in assigned response duties and responsibilities for qualifications. Opportunities for compliance include annual site operations-based exercises; discussion-based exercises; additional drills and exercises of a specialty nature such as biological threats, hazardous material incident, rioting, terrorist attacks; or real events in which ERO members conduct tasks associated with their assigned ERO positions.

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Drills and exercises are conducted after personnel are trained on appropriate response plan and processes. Training requirements for facility-level personnel are addressed in accordance with WIPP WP 14-TR.01, *WIPP Training Program*. Drills can be an effective method for training personnel on changes to emergency procedures and can help validate an understanding of roles and responsibilities during an emergency. Drills can be developed or modified based upon feedback from actual events, exercise evaluations, and self-assessments; drills can also help validate new or revised procedures and equipment modifications.

The U.S. Department of Homeland Security (DHS) Homeland Security Exercise and Evaluation Program (HSEEP) is a federal-level exercise program developed by DHS for state, county, and local EM programs. The DHS approach addresses not only DHS-sponsored exercises, but also those exercises where federal-level agencies may interact with state, county, and local EM programs. Therefore, to ensure consistency with the DHS approach to exercise development, conduct, and evaluation, common exercise concepts and processes of the HSEEP are incorporated in the guidance presented in this plan, using DHS terminology where applicable.

Two types of exercises are defined in this procedure based on HSEEP exercise methodology: discussion-based exercises and operations-based exercises. Although both exercise types can play a significant role in facility/site preparedness activities, the guidance in this plan will focus primarily on operations-based exercises, which are the subject of EM program requirements specified in DOE O 151.1C.

A computer-based tool for developing DOE EM exercises, "Exercise Builder has been developed by participants in the Emergency Management Issues Special Interest Group, Exercise and Drill Subcommittee, under the sponsorship of the DOE Headquarters (HQ) Office of Emergency Management.

Exercise Builder makes generic exercise components available, such as scenarios, objectives, and criteria, and provides a PC-based application that can be used to develop EXPLANs and subsequent After Action Reports (AARs). End products include exercise scopes, objectives, scenario materials, and evaluator modules. Templates and instructions for both the EXPLAN and AAR are located in the Drill and Exercise Library folders on the "Network Hondo" share drive.

Training is available for Exercise Builder. Web-based tutorials are available to prepare EM staff to plan and develop exercise/drill objectives and scenario materials. Information for obtaining the Exercise Builder tool and associated training can be found through Emergency Management Issues Special Interest Group's "Training & Products" menu on their web site at <http://www.orise.orau.gov/emi/training-products/default.htm>.

Although Exercise Builder is a valuable tool, it is not required by DOE/CBFO for the design and development of a drill or exercise.

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DOE O 150.1, *Continuity Programs*, provides the objectives, requirements, and responsibilities of the overall DOE Continuity of Operations Program (COOP). Testing, training, drills, and exercises are the principal tools that DOE/CBFO uses to maintain preparedness and document a viable COOP capability. Drills and exercises are conducted at the DOE/CBFO level to maintain the readiness of all essential and non-essential personnel and encompass a deliberate blend of orientation seminars, briefings, table-tops, and operations-based drills/exercises, including relocation to the alternate Emergency Operations Center (EOC) facility. Each drill or exercise is immediately followed with a structured post-drill/exercise critique “hotwash” to capture strengths, weaknesses, and improvement items. COOP drills and exercises can be integrated with EM drills and exercises at the discretion of DOE/CBFO.

Although this plan focuses on EM drill and exercise program processes and requirements, the process, forms, and templates can be applied (modified as needed) for planning, scheduling, and conducting COOP drills or exercises.

2.0 DRILL AND EXERCISE PROGRAM MANAGEMENT

The Drill and Exercise Program is managed by the EM&S General Drill and Exercise Program management roles and responsibilities are listed below.

The EM&S Manager is responsible for:

- Providing oversight for the Drill and Exercise Program.
- Developing and approving the overall exercise budget.
- Approving finalized site-level EXPLAN, AAR, and Corrective Action Plans (CAPs) using the WIPP Form process.
- Providing oversight for the ACD Program.
- Approving long range schedules and ensuring programmatic elements meet requirements in DOE O 151.1C and DOE O 426.2, or successor documents.

The Drill and Exercise Program Manager is responsible for:

- Maintaining overall responsibility for and work in coordination with the assigned Drill Coordinator and Abnormal Condition Drill Coordinator (ACDC), as applicable.
- Assisting the EM&S Manager with drill and exercise budget development.
- Managing the overall exercise budget.

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- Developing short- and long-range drill and exercise schedules and matrices.
- Managing the Drill and Exercise Library folders and associated contents on the “Network Hondo” share drive.
- Developing and implementing the Drill and Exercise Program.
- Approving finalized EXPLANs and AARs.
- Ensuring drill and exercise findings, improvement items, and previous exercise issues are documented, addressed, and tracked to completion.
- Ensuring drill and exercise data are entered and tracked.
- Updating and revising the Site Objectives Bank.

Only trained, qualified personnel will be used as controllers or evaluators.

The Lead Exercise Planner is responsible for:

- Leading the overall exercise planning effort.
- Developing the exercise planning schedule, EXPLAN exercise briefings, Controller/Evaluator (C/E) assignments, and scope of exercise.
- Ensuring safety and security plans are adequate.
- Coordinating and interfacing with offsite agencies/organizations during exercises involving offsite resources; developing a list of invitees every 3 years for the DOE/CBFO FPE; and submitting the list to the DOE/CBFO EM Program Manager.
- Periodically including offsite organizations in participation for criticality scenario emergency exercises.
- Managing the overall evaluation effort, compile evaluation reports and comments, and developing the AAR and CAP.
- Assuming logistics planning in the absence of a formal Exercise Logistics Officer.
- Assuming safety planning in the absence of a formal Exercise Safety Officer.

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The Exercise Logistics Officer is responsible for:

- Providing logistical support to the Lead Exercise Planner and ensuring that all exercise props are procured, moved, and set up appropriately to resemble a realistic emergency environment.
- Completing the Exercise Logistics Planning Checklist (if necessary), located in the Exercise Library folder on the “Network Hondo” share drive.
- Placing exercise warning signs at pre designated locations for safety.
- Completing the “Exercise Scene Setup Checklist,” located in the Exercise Library folder on the “Network Hondo” share drive, prior to the start of an exercise.

An Exercise Safety Officer is preferred, but not required, drills or exercises. In the absence of an established safety officer the Drill and Exercise Director serves as the safety officer during the performance of drills and exercises.

The Exercise Safety Officer is responsible for:

- Ensuring sufficient precautions and limitations are established and followed for safe exercise conduct.
- Providing professional safety support for site-level exercises and continuously monitors the exercise play area for unsafe conditions.

The Drill Coordinator is responsible for:

- Implementing drill requirements for WIPP Facilities as a representative of the Functional Manager (FM) or designee.
- Implementing drill requirements for the Skeen-Whitlock General Facility program as a representative of EM&S.
- Assisting the Lead Exercise Planner with schedule planning, conducting, and completing post exercise activities during facility-level and site-level exercises.
- Ensuring facility preparedness activities (drills, training, etc.) are conducted prior to an evaluated exercise.
- Assigning facility representatives as “trusted agents” for drill and exercise planning activities.
- Planning, scheduling, conducting and completing post-drill reporting requirements.

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- Assisting the ACDC or designee in the development and execution of ACDs, as needed.

The ACDC, perform the actions located in the following ACD Documents:

- WP 12-ER.12, Abnormal Condition Drill Program
- WP 12-ER3006, Abnormal Condition Drill
- WP 15-GM1002, Issues Management Processing of WIPP Forms, (when applicable)

The FM NRNF is responsible for:

- Working in conjunction with other FMs to implement ACD requirements for NRNF.
- Assigning facility representatives as “trusted agents” for drill and exercise planning activities as necessary.

Trusted Agents or Subject Matter Experts (SME)s include Facility Representatives, Fire/EMS, Fire Protection Engineers, Safety Representatives, Central Monitoring Room (CMR), Security, Health Physicist, etc., depending on the exercise scope, objectives, and scenario. Trusted agents and SMEs are important in the drill and exercise development process and ensure both technical and non-technical aspects of the drill or exercise are credible, realistic, and allow for demonstration of the drill or exercise objectives.

The Trusted Agents/SMEs are responsible for:

- Attending drill and exercise planning team meetings as a facility/activity SME.
- Protecting exercise details.
- Performing a technical/nontechnical review of drill and EXPLANs, as applicable.

The Readiness Assurance Coordinator is responsible for:

- Providing the Lead Exercise Planner with a qualified ERO participant list.
- Providing a training attendance list to lead Exercise Planner to ensure ERO personnel receive appropriate credit for exercise participation based on their assigned qualification program.

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- Assisting with the development and conduct of site-level training and drills when approved by EM&S.

2.1 ACD Drill Schedule For NRNF

- ACDC, develop and submit an annual ACD schedule for the facility to the DEP Manager and FM or designee.

2.2 Drill Schedule For WIPP

- Drill Coordinator, develop and submit an annual drill schedule to the DEP Manager and FM or designee.
- Annual surface and underground evacuation drills are required in accordance with the WIPP HWFP, Attachment D, Section D-7, and Mine Safety and Health Administration instruction guide MSHA 3027 and will be included in the Drill Schedule.

2.3 Long-Range Emergency Preparedness Drill And Exercise Schedule For WIPP

The 3-Year Drill and Exercise Schedule is developed/updated annually, coordinated with stakeholders, and submitted to DOE/CBFO no later than July 1 each year. The schedule includes quarterly drills for NRNF/Activities and annual facility- and site-level exercises. In addition, a participant matrix that forecasts the participation by site-level ERO elements is developed/updated annually and submitted with the schedule. The exercise schedule is documented in the annual Emergency Readiness Assurance Plan.

The DEP Manager is responsible for:

- Developing a 3-Year Drill and Exercise Schedule.
- Submitting the schedule to stakeholders for review and comment.
- Submitting to EM & Security Department Manager for final review.

DEP Manager, annually, but no later than July 1 each year, submits a 3-Year Drill and Exercise Schedule to the DOE/CBFO EM Program Manager for approval prior to publication to the ERP and other program and facility stakeholders.

3.0 SCHEDULING, PLANNING, AND CONDUCTING DRILLS

3.1 Tabletop/Seminar/Workshop

Tabletops, Seminars, and Workshops are drills designed to prepare for Functional Exercises (FEs) and Full Scale Exercises (FSEs). They are low-stress events that stimulate discussion of simulated events or conditions. Participants discuss issues in depth and make decisions using slow-paced, problem-solving methods in contrast to the fast-paced, spontaneous decisions needed during actual or simulated emergency conditions. Constructive problem solving is the goal of these drill types. Actions documented during a drill serve as a measurement tool for informally evaluating player responses and identifying improvement areas.

The Lead Drill Planner or Facilitator is responsible for:

- Obtaining a drill number from the EM Drill and Exercise Number Log.
- Developing a drill scenario from accidents or emergencies analyzed in the specific Emergency Planning Hazards Survey (EPHS) or Emergency Planning Hazards Assessment (EPHA) for the respective facility/activity.
- Documenting the drill in a Drill Plan or Situational Manual, as appropriate.
- Selecting an event that is plausible, accurate, and realistic (e.g., facility-level Operational Emergency, transportation, natural disaster).
- Briefing participants and role players of the drill objectives, ground rules, and communication and simulation protocols.
- Presenting the scenario narrative, which describes an event or emergency incident and brings participants to a simulated “present moment” in time.
- Ensuring copies of the appropriate emergency plan, EPHA, and other pertinent materials are available for reference during a drill, as appropriate.
- Distributing materials to provide details about an imaginary jurisdiction, or instructing participants to use their knowledge of actual local resources, if warranted.
- Assigning a recorder to document actions taken (discussed) during a drill, as needed.
- Announcing the beginning of the drill the initiating event, subsequent problems, and drill messages to ensure the drill remains on track.

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- Announcing the end of the drill when all objectives have been met or when a pre-determined time limit has been exceeded.

3.2 General Facility Basic Drill

A facility that has a minimal hazard risk (i.e., facility hazards do not require and EPHA) is considered a “general facility” and requires a minimal or base preparedness level. General facility basic drills do not require a formal evaluation, but do require the FM or designee to complete “General Facility Drill/Event Report.” Each general facility is required to conduct one evacuation drill and one shelter-in-place drill annually.

The drills can be conducted on the same day or on separate days at the discretion of the FM or designee.

An actual event can substitute for a drill if the facility implemented protective actions (shelter or evacuate) and the Drill Coordinator submits drill plan documentation that includes strengths, weaknesses, and improvement items to DEP Manager within 10 working days (2 weeks).

This sequence of steps below is highly recommended; however, the order in which activity steps are taken remains flexible.

The Drill Coordinator or Designee is responsible for:

- Identifying the facility/activity to be involved in the drill.
- Coordinating with and obtaining approval from the FM or designee in cases where the drill is conducted by a designated representative.
- Obtaining a drill number.
- Requesting drill support from EM&S, if desired.
- Establishing or confirming the drill date and scope of drill.
- Notifying key stakeholders of the drill’s date and scope, as appropriate including the following:
 - WIPP: NWP Security; Facilities Operations; CMR Facility Shift Manager (FSM).
 - DOE/CBFO Management; Security.
 - Offsite agencies (if applicable).

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Objectives should contain a condition that must be present, the action to be taken, and the plans/procedures that require or describe the action taken.

- Establishing specific drill objectives.
- Optional: Developing a drill scenario (e.g., fire, earthquake, severe wind, and/or lightning).
- Identifying a mechanism for initiating the event (e.g., fire alarm, public address system).
- Optional: Scheduling a pre-drill C/E briefing.
- Notifying the CMR that the drill is being initiated.
- Conducting the drill, maintaining safety as the highest priority.
- Terminating the drill when each player has been given the opportunity to demonstrate his or her actions to meet the stated objectives.

If an actual emergency occurs, then take response action according to established procedures and immediately terminate the drill.

- Notifying the CMR that the drill has been completed.

The Lead Controller (each venue) is responsible for:

- Conducting a post drill hotwash to discuss strengths, weaknesses, and improvement items with an emphasis on procedures/checklists, equipment, and facility support systems.
- Facilitating the hotwash and reinforcing the importance of being self-critical.

The FM or Designee is responsible for:

These areas may be addressed through procedure revisions, training, equipment, etc.

- Documenting applicable hotwash comments, strengths, and areas for improvement.
- Addressing the areas identified as improvement areas.

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3.3 General Facility Formal Drill

A formal drill is highly recommended for general facilities that are of high visibility (such as the SWB) or have an increased risk of being affected by hazards in or around the facility. Formal drills should be considered when planning a multi-agency drill at the SWB. This type of drill requires the development of a Drill Plan and requires a Drill Planning Team with appropriate stakeholders' involvement. This type of drill is conducted at the discretion of the FM or designee, DOE/CBFO, or EM&S Management.

This sequence of steps below is highly recommended; however, the order in which activity steps are taken remains flexible.

The Drill Coordinator or Designee is responsible for:

- Identifying the facility/activity to be involved in the drill.
- Coordinating with and obtaining approval from the FM or designee or other key stakeholders.
- Creating a Drill Planning Team with appropriate stakeholder involvement.
- Obtaining a drill number.
- Requesting drill support from DEP management, if desired.

The DEP Manager is responsible for:

- Coordinating requested drill support, when requested by the Drill Coordinator or designee.

Objectives should contain a condition that must be present, the action to be taken, and the plans/procedures that require or describe the action taken.

- Establishing specific drill objectives.
- Writing objectives that are plausible, realistic, measurable understandable, and achievable.
- Developing a drill scenario from facility EPHS-analyzed accident/incident scenarios (e.g., fire, workplace violence, severe weather).
- Identifying a mechanism for initiating the event (e.g., fire alarm, public address system).
- Scheduling the pre-drill and post-drill C/E briefings.

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- Developing a Formal Drill Plan from the template located in the Drill and Exercise Library folders on the “Network Hondo” share drive, completing all sections.
- Submitting a Drill Plan to EM&S Management for review 15 working days prior to the drill.
- Obtaining approval from the DOE/CBFO EM Program Manager, for a SWB Formal Drill Plan.
- Holding pre-drill C/E briefing.
- Notifying the CMR/FSM that drill is being initiated.
- Conducting the drill, maintaining safety as the highest priority.
- Notifying the CMR/FSM that the drill has been completed.

The Lead Controller is responsible for:

- Conducting a post-drill hotwash to discuss strengths, weaknesses, and improvement items with an emphasis on procedures/checklists, equipment, and facility support systems.
- Facilitating the hotwash and reinforcing the importance of being self-critical.
- Documenting applicable comments for inclusion in the Drill AAR.
- Submitting an approved training roster to the NWP Training Department.
- Developing a Drill AAR, using the AAR Template and instructions located in the Drill and Exercise Library folders on the “Network Hondo” share drive, completing all sections.
- Obtaining approval from the DOR/CBFO EM Program Manager, for a SWB Formal Drill AAR.
- Submitting the completed Drill AAR to Drill Coordinator within 30 working days.
- Addressing the areas identified as improvement areas which may be addressed through procedure revisions, training, equipment, etc.

An actual event can substitute for a drill if the facility implemented protective actions (shelter or evacuate) and the FM or designee, CMR/FSM, or designated EM representative completes a Drill AAR and submits it to DEP management within 30 working days.

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3.4 Non-Reactor Nuclear Facility Drill

- A facility or activity that requires an EPHA is considered an NRNF and requires an elevated preparedness level commensurate with the associated hazards and risks.
- An NRNF is required to conduct a facility-level drill each quarter (at a minimum) to ensure facility-level ERO personnel are prepared and qualified to respond to an emergency at the facility. Quarterly drills can involve operations-based or discussion-based facility drills at the discretion of the DEP Manager.
- Facility-level drills should be based on hazards and risks at the facility/activity. Due to operational impacts to a facility, it is permissible to schedule two drills in one quarter as long as four drills are conducted annually.
- Drills prior to an annual evaluated exercise should be tailored to prepare the facility-level ERO for the annual exercise. When performed, a facility-level exercise fulfills the quarterly drill requirement.
- A drill is training and should provide participants learning opportunities, as necessary.

3.5 Non-Reactor Nuclear Facility Drill Activities

The Drill Coordinator or Designee is responsible for:

- Developing the planning schedule, scope of assigned exercises, briefings, and plans following the timeline in the “60-Day Drill Planning Checklist” located in the Drill and Exercise Library folders on the “Network Hondo” share drive.
- Identifying the facility/activity to be involved in the drill.
- Identifying a facility representative trusted agent to assist in the Drill Plan development process.
- Involving appropriate SMEs in the drill development process (e.g., Facility Representative, Health Physicist).
- Holding drill planning meetings, as needed.
- Establishing or confirm the drill date.
- Establishing the scope of the drill.

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- Notifying key stakeholders of drill date and scope:
 - CMR/FSM
 - Fire/EMS
 - Emergency Response Team (ERT)
 - Security
 - Other (e.g., Alarm Technician)
 - Training Department (if applicable)
 - Obtaining a drill number from the EM Drill and Exercise Number Log.
 - Establishing specific drill objectives from the WIPP Objectives Bank or modifying the evaluation criteria outlined in U.S. Department of Energy Guide DOE G 151.1-3, *Programmatic Elements, Appendix D*, or successor document, to meet site/facility-specific needs based on current plans and procedures.
 - Developing the Drill Plan, using the Drill Plan Template and completing all sections (template and instructions are located in the Drill and Exercise Library folders on the “Network Hondo” share drive).
 - Coordinating with FM or designee or other key stakeholders by completing the Drill Preapproval.
 - Scheduling the pre-drill and post-drill C/E briefings.
 - Finalizing the Drill Plan.
 - Submitting the Drill Plan to the FM or designee and technical reviewers or SME, if applicable.
 - Incorporating comments from the FM or designee and technical reviewers.
 - Obtaining Drill Plan approvals from the FM or designee and technical reviewers or SME, if applicable.
 - Holding the pre-drill C/E briefing.
 - Setting up the drill props to replicate a realistic work environment, when possible.
- If a task is being performed that normally requires “in-hand” procedures, then make the procedures available for drill participants prior to drill initiation.
- Notifying the Central Monitoring Room Operator (CMRO) that the drill is being initiated.

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- Conducting the drill, maintaining safety as the highest priority.
- Terminating the drill when each player has been given the opportunity to demonstrate his or her actions to meet the stated objectives.

If an actual emergency occurs, then take response action according to established procedures and immediately terminate the drill.

- Notifying the CMR/FSM or designee that the drill has been completed.

The Lead Controller is responsible for:

- Conducting a post drill hotwash to discuss strengths, weaknesses, and improvement items with an emphasis on procedures/checklists, equipment, and facility support systems.
- Facilitating the hotwash and reinforcing the importance of being self-critical.
- Documenting all applicable comments for inclusion in the Drill AAR.
- Submitting the signed attendance roster to the Training Department.
- Developing a Drill AAR using the AAR Template, completing all sections (template and instructions are located in the Drill and Exercise Library folders on the "Network Hondo" share drive).
- Submitting the draft Drill AAR for review/approval by the FM or designee.
- Completing the Drill AAR and submitting to the FM or designee within 30 working days.
- Filing drill documentation in the Drill and Exercise Library folders on the "Network Hondo" share drive.

3.6 Non-Reactor Nuclear Facility Drill Objective Selection

The Drill Coordinator is responsible for:

- Selecting Drill objectives from the WIPP Objectives Bank or facility/site-specific objectives linked with DOE G 151.1-3, Appendix D, or successor document.
- Modifying form and format to ensure the objectives are site/facility/activity-specific, if needed.

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- Incorporating formality of operations principles (e.g., formal titles, repeat backs) into drill objectives.
- Measuring objectives against approved plans and procedures.
- Writing objectives that are realistic, measurable, understandable, and achievable.

The DEP Manager or Designee is responsible for:

- Writing objectives to contain a condition that must be present, the action to be taken, and the plans/procedures that require or describe the action taken. For example:
 - Chief Office Warden (COW), given a notification to conduct a shelter-in-place, conduct sweeps to push building occupants to the designated shelter-in-place location, as described in the facility-specific procedure.
 - Given the report of missing persons, conduct search and rescue operations in accordance with Standard Operating Guide (SOG) e.g., WP 12-ER.08 (Fire/EMS objective).
 - Coordinate, approve, and enter new drill objectives into the Site Objectives Bank.

3.7 Non-Reactor Nuclear Facility Drill Scenario Development

Since a drill is primarily a training activity, in areas in which critical knowledge is held by a small number of personnel, if necessary the selected person may participate in the planning process and the drill as a trusted agent.

The Drill Coordinator is responsible for:

- Developing drill scenarios to describe the background information and pre-drill conditions and the circumstances that cause an event/condition to occur.
- Basing the scenario on the drill objectives and associate it with the hazards and risks for the drill facility/activity.
- Consulting facility or project SMEs or trusted agents (e.g., Facility Representative, Health Physicist) during the drill development process to ensure the drill scenario and data are credible, realistic, and allow for demonstration of the drill objectives.

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If facility or project personnel are likely to be drill participants, then avoid, to the extent possible, including them in the scenario development process.

3.8 Non-Reactor Nuclear Facility Drill Plan Approval Process

The preapproval process is designed to provide appropriate stakeholders enough information to identify potential operational impacts and the potential need for SMEs without compromising scenario information.

The Drill Coordinator is responsible for:

- Completing the NRNF Facility Drill Preapproval template, located in the Drill and Exercise Library folders on the “Network Hondo” share drive, completing all sections in accordance with the available instructions.
- Providing the Facility drill Preapproval to the FM or designated trusted agent for approval as applicable.
- Ensuring appropriate technical reviewers and reviewing Drill Plans, as applicable.
- Obtaining the appropriate preapprovals to develop the Drill Plan.
- Creating and submitting the Drill Plan to appropriate technical reviewers/SMEs, if applicable.
- Obtaining concurrence from appropriate technical reviewers/SMEs on the Technical review portion of the drill Plan, if applicable.
- Marking as “file Copy” and filing drill documentation in the Drill and Exercise Library folders on the “Network Hondo” share drive.

3.9 Non-Reactor Nuclear Facility Drill After Action Report

The Drill Coordinator is responsible for:

- Documenting the results of the NRNF Drill in a Drill AAR, using the NRNF Drill AAR template and instructions, located in the Drill and Exercise Library folders on the “Network Hondo” share drive, completing all sections in accordance with the available instructions.
- Submitting the Drill AAR to the drill facility within 30 working days of conducting the drill.
- Entering identified issues (improvement items/weaknesses/deficiencies, etc.) into WIPP Form, as applicable.

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- Marking as “file copy” and filing drill documentation in the Drill and Exercise Library folders on the “Network Hondo” share drive.

4.0 ABNORMAL CONDITION DRILLS FOR NON-REACTOR NUCLEAR FACILITIES

4.1 General Description

ACDs are based on hazards and risks associated with a given facility/activity/project level. The intent is to fulfill requirements for operating organization personnel while providing reasonable assurance that those personnel have, or can acquire, the knowledge, skills, and abilities needed to operate and maintain the facility in a safe and reliable manner under all conditions.

The depth and scope of training and qualification/certification programs for operating organization personnel at NRNF must be commensurate with the hazard level and complexity of activity/project operations. U.S. Department of Energy Handbook DOE-HDBK-1099-96, *Establishing Nuclear Facility Drill Programs*, or successor document, provides guidance for development or modification of drill programs that both train on and evaluate facility training and procedures dealing with a variety of abnormal and emergency operating situations likely to occur at a facility.

Regarding scenario design, a simple drill may often accomplish training objectives more effectively than a complicated one; however, the more detailed the scenario is in terms of cues and props (see Attachment 2, Appendix A) and specific duties of Evaluators and safety representatives, the fewer chances there are for a problem occurring during the ACD. In any case, drills should not lead to or have the potential to create safety concerns. ACDs can be integrated into the facility-level emergency preparedness drill structure, as needed, in coordination with the ACDC.

4.2 Abnormal Condition Drill Activity Overview

- ACDC, roles and responsibilities, drill development and drill plan guidance are identified within the below referenced supporting documents:
 - EA12ER3006-1-0, *Abnormal Condition Drill Plan*. This document is used to plan ACDs. WP 12-ER3006, *Abnormal Condition Drills Management Control Procedure* provides instructions for conducting ACDs at the WIPP in accordance with WP 12-ER.12.
 - EA12ER30062-2-0, *Abnormal Condition Drill After Action Report*. This document is used to evaluate ACDs after completion. WP 12-ER3006 provides instruction for the completion of AARs at the WIPP in accordance with WP 12-ER.12.

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The ACDC is responsible for:

- Ensuring drills are conducted in a safe manner.
- Describing the method to identify and analyze hazards.
- Providing the framework to develop and implement controls.

4.3 Abnormal Condition Drill Evaluation

The ACDC is responsible for establishing the criteria for evaluations. Each drill shall be assessed to gauge the performance of the participants against the various objectives. Established objectives and criteria shall be used as the basis for the evaluation. The evaluation process shall include provisions for documenting observations and maintaining a time chronology of events by each evaluator. Copies of the players' documentation (such as logs and checklists) should be retained with the drill records. EA12ER3006-3-0, *Abnormal Condition Drill Evaluation Criteria*, and EA12ER3006-4-0, *Administrative Drill Evaluation Criteria* shall be used to track and record performance evaluations, in accordance with WP 12-ER3006.

5.0 NON-REACTOR NUCLEAR FACILITY PRE-EXERCISE DRILLS AND TRAINING

Prior to a site-level exercise, conduct at least one discussion-based or operations-based drill that includes the site-level ERO participants who will participate in the scheduled exercise.

The Lead Exercise Planner or Designee is responsible for:

- Focusing the pre-exercise drill on preparedness for the exercise.
- Documenting the drill with a Drill Plan or Situation Manual and, if appropriate, further complement with a slide presentation, handouts, or other available media.
- Determining and applying lessons learned.
- Documenting pre-exercise training and drills in the related site-level exercise AAR.

6.0 NON-REACTOR NUCLEAR FACILITY EXERCISE (FACILITY-LEVEL/SITE-LEVEL)

Exercises can be conducted with a variety of scope and complexity. Exercises are conducted both at the site-level and facility-level. These types of exercises use many of the same aspects for planning an exercise, but do have some differences on level of

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effort and processes used. The differences can include templates, checklists, and the approval process.

There are many types of exercises, to include FE, FSE, and FPE (see definitions for more details).

For exercise deliverables, “working days” is based on a 5-day workweek to meet the requirements of DOE O 151.1C, attachment 2.

6.1 Non-Reactor Nuclear Facility Exercise Program Activities

The Lead Exercise Planner is responsible for:

- Conducting one annual evaluated exercise.
- Identifying an Exercise Planning Team, including facility/project/activity SMEs as assigned by the FM or designee.

Appropriate SMEs must be involved in the exercise development process (Facility Representative, Health Physicist, Security, etc.).

- Developing the planning schedule, scope of assigned exercises, briefings, and plans, following the timeline in the “120-Day Exercise Planning Checklist” (site level), located in the Drill and Exercise Library folders on the “Network Hondo” share drive.

If a timeline is condensed that impacts the normal exercise planning schedule, then ensure that all stakeholders understand the risk and potential impacts to planning and conduct.

If other scheduled activities reduce or restrict the availability of other resources, then consider allocating additional resources or re-scheduling one of the activities.

The Trusted Agent/SME is responsible for:

- Ensuring the scenario and data are plausible and realistic; facility-level actions are consistent with processes, plans, and procedures; and actions do not violate Technical Safety requirements.
- Identifying any required simulated facility data (e.g., paperwork, work packages) for exercise conduct and provide to the Lead Exercise Planner.
- Developing required simulated facility data (e.g., paperwork, work packages) and ensuring data is provided to appropriate work groups, as needed.

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The Lead Exercise Planner is responsible for:

- Developing an EXPLAN using the appropriate template and instructions located in the Drill and Exercise Library folders on the “Network Hondo” share drive, completing all sections.
- Submitting for technical edit (allow 1 week).
- Submitting to FM or designated trusted agent for review and approval; as applicable.

By signing the EXPLAN, the FM or designee is providing guarantee that the appropriate stakeholders have reviewed and approved of the technical/non-technical aspects of the EXPLAN.

The FM or Designee is responsible for:

- Verifying with Project Lead or SME, if applicable, that the scenario is plausible and data are accurate.

Facility-Level EXPLANs do not require approval of DOE/CBFO.

The Lead Exercise Planner is responsible for:

- Submitting the EXPLAN for review and approval.
- Submitting the FSE EXPLAN to DOE/CBFO for review/approval 35 calendar days prior to the exercise. This will allow 5 days for CBFO review and then CBFO submittal to NNSA/HQ within the requested 30 days.
- Submitting the Facility-Level EXPLAN to DEP Manager or designee for approval 10 working days prior to the exercise.

The Exercise Logistics Officer is responsible for:

- Identifying Controllers and Evaluators, as assigned.
- Obtaining meeting rooms and classrooms.
- Identifying and setting up the control cell, simulation cell, communications requirements, meals, transportation, and facility security badging/access.
- Acquiring/staging props (e.g., moulage, dummies, smoke generators, damaged equipment, and simulated material).

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- Using the Exercise Logistics Planning Checklist, located in the Drill and Exercise Library folders on the “Network Hondo” share drive, for logistical planning and guidance.

The Readiness Assurance Coordinator is responsible for:

- Acquiring the attendance sheet from the Lead Exercise Planner to ensure ERO personnel receive appropriate credit for exercise participation.

The Lead Exercise Planner is responsible for:

- Ensuring exercise scene set-up has been completed.

If a task being performed normally requires “in-hand” procedures, then make the procedures available for drill participants prior to drill initiation.

- Conducting the exercise, maintaining safety as the highest priority.

The Lead Controller (each venue) is responsible for:

- Acquiring participants’ signatures on the training roster, and returning to Lead Exercise Planner.
- Conducting a post-exercise hotwash to discuss strengths, weaknesses, and improvement items with an emphasis on procedures/checklists, equipment, and facility support systems.
- Facilitating the hotwash and reinforcing the importance of being self-critical.
- Document applicable comments for the AAR.

The Lead Controller (each venue) or Lead Exercise Planner is responsible for:

- Signing the training roster as the Briefing Facilitator.

The Lead Exercise Planner is responsible for:

- Submitting the signed training roster to the Readiness Assurance Coordinator for ERO participation credit using applicable forms.

The Readiness Assurance Coordinator is responsible for:

- Submitting the completed training roster to Training Department for ERO participation credit.

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The Lead Exercise Planner is responsible for:

- Developing an Exercise AAR, using the appropriate template and instructions located in the Drill and Exercise Library folders on the “Network Hondo” share drive, completing all sections.
- Submitting for technical edit (allow 1 week).
- Submitting the AAR to DOE/CBFO within 30 working days after the exercise.
- Ensuring all exercise issues identified in the AAR is submitted to the Readiness Assurance Coordinator for entering into WIPP Form.
- Ensuring Previous Issue Validation Tracking System is updated to reflect any new exercise issues for future validation.

6.2 Non-Reactor Nuclear Facility Exercise Plan Development

Attachment 3, (Appendix B) provides recommendations for submitting exercise-related information to DOE/HQ during the various stages of exercise planning for an FPE.

The EXPLAN must contain sufficient information and data to effectively conduct, control, and evaluate the exercise.

The Lead Exercise Planner is responsible for:

- Fully documenting the exercise in an EXPLAN that includes the following:
 - Specific exercise objectives
 - Scope
 - Scenario
 - Participants
 - Simulations
 - Timelines
 - Injects (optional)
 - Technical data
 - Safety and security provisions
 - Controller instructions
 - Evaluation criteria
- Building the EXPLAN from specific components that provide design, conduct, and post-exercise evaluation, using the template and instructions located in the Drill and Exercise Library folders on the “Network Hondo” share drive, completing all sections.

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6.3 Non-Reactor Nuclear Facility Exercise Objectives

The EXPLAN must contain sufficient information and data to effectively conduct, control, and evaluate the exercise.

The Lead Exercise Planner is responsible for:

- Developing objectives that are understandable, achievable, and measured against facility/activity/project plans and procedures.
- Developing each objective to contain a condition that must be present, the action to be taken, and the plans/procedures that require or describe the action to be taken.
- Coordinating new exercise objectives through the Site Exercise Coordinator for approval for site-level exercises and entry into the Site Objectives Bank.
- Developing and using additional exercise objectives that are tied to the evaluation criteria in DOE G 151.1-3, Appendix D, if appropriate.
- Modifying objectives to reflect facility/activity-specific plans, procedures, and processes.
- Incorporating formality of operations principles (e.g., formal titles, repeat backs) into drill objectives.

The DEP Manager is responsible for:

- Collaborating directly with all stakeholders to whom the objective applies and solicit concurrence from the applicable stakeholders prior to adding new objectives to the Site Objectives Bank.

6.4 Non-Reactor Nuclear Facility Exercise Evaluation Guides

Although a valuable and recommended tool, Exercise Evaluation Guides (EEGs) are not required during the evaluation of an exercise.

The Lead Exercise Planner is responsible for:

- Developing EEGs to assist in exercise evaluation, for use by both experienced Evaluators and SMEs who may have little or no exercise evaluation experience.
- Incorporating the critical tasks that should be completed in an exercise into the EEGs.

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Providing Evaluators with information through the EEGs, on what they should expect to see at the specific location or in the specific condition.

6.5 Release of Pre-Exercise Information

Various components of the EXPLAN may be allowed restricted distribution. The following exercise information provides guidelines to assist with the control of privileged exercise data.

During the planning and conduct phases of a formal drill or exercise, the Planning Team must protect information (scenario, technical data, consequences, etc.) related to the formal drill or exercise. Scenario information must be strictly limited to those planning, controlling, facilitating, and evaluating the formal drill or exercise, or as approved by the Lead Exercise Planner.

Information that may be shared with all participants prior to the exercise includes the following:

- Exercise scope, to include the purpose and lists of participants
- Focus area
- Objectives to be demonstrated
- Design guidelines
- Previous performance issues
- Glossary
- Participant Briefing

Access to scenario-related information is limited to the planning teams/groups, managers required to approve the EXPLAN, and C/Es. Exercise information that may be shared within the planning organization includes the following:

- Scenario narrative
- Extent-of-Play agreements
- Pre-approved simulations
- Timeline of key scenario events (may be combined with the Master Sequence of Events List [MSEL])
- MSEL
- Messages/injects
- Exercise data (material-at-risk, medical data, plume/monitoring data, etc.)

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Some C/E exercise-related information must remain privileged, since instructions for C/Es may contain exercise schedules and simulations. This information includes the following:

- C/E rules of conduct
- C/E instructions
- Communication directories
- EEGs
- C/E briefing

6.6 Non-Reactor Nuclear Facility Exercise Plan Approval Process

Adequate review time must be given.

The Lead Exercise Planner is responsible for:

- Conducting initial non-technical review.
- Submitting for technical edit (allow 1 week).
- Submitting to the exercise FM or designee.
- Submitting to EM&S Manager or designee for initial review (FSE/FPE only).
- Submitting to DEP Manager or designee for approval 10 working days prior to the exercise, if a Facility-Level exercise.

Facility-Level EXPLANS do not require approval of DOE/CBFO.

- Submitting the EXPLAN to the following for review and approval allowing enough time for DOE/CBFO to send approved plan to DOE/HQ, if an FSE or FPE.
- National Nuclear Security Administration (NNSA) HQ 30 calendar days prior to the exercise:
 - Operations Manager or designee
 - EM&S Manager or designee
 - DOE/CBFO EM Program Manager or designee
- Submitting approved EXPLAN to DOE/CBFO EM Program Manager for submission to DOE/NNSA HQ.
- Maintaining the EXPLAN as indicated in section 8.0.

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- Printing a hard copy of the EXPLAN for record retention and consolidate with exercise participant documentation and AAR after the exercise is conducted.
- Filing the AAR and EXPLAN in the Drill and Exercise Library folders on the “Network Hondo” share drive.

7.0 EXERCISE CREDIT FOR ACTUAL INCIDENT

7.1 Credit Process

The EM&S Manager is responsible for:

- Designating an EM&S staff member to lead credit process.

The Designated EM&S Staff Member is responsible for:

Using exercise objectives, allow for a clear correlation between the objectives and any findings that come out of the Final Emergency Report. The Action Plan that will be developed will provide the objective evidence that the corrective actions will be incorporated into the overall EM Program.

The Final Emergency Report will include the scope of the event, objectives and evaluation criteria, a narrative description of the event, timeline, and list of participants.

- Developing the Final Emergency Report as follows:
 - Include exercise objectives that can be supported from actions demonstrated during the response.
 - Include chronology of events, to demonstrate the timeline.
 - Identify hotwash notes as record and use to assist with authoring Final Emergency Report.

The Final Emergency Report must be submitted to DOE/CBFO 30 working days following the actual incident.

- Obtain approval of the Final Emergency Report form the DOE/CBFO Manager.

CAPs (WIPP Forms) must be completed within 30 working days of receipt of the Final Emergency Report.

- Develop and submit CAP in accordance with WP 15-GM1002 *Issues Management*, or successor document.

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- Develop and submit Lessons Learned in accordance with WP 15-PA2000, *Lessons Learned Development* or successor document.

8.0 EXERCISE PLANNING, PREPARATION, CONDUCT, AND EVALUATION

8.1 Exercise Planning

The Exercise Planning Team should be a manageable size and include a representative from each major participating onsite and offsite ERO/agency, with team membership modified to fit the type or scope of the exercise. Facility-level exercises do not require the same level of effort or team as a site-level exercise or an FPE.

The Exercise Planning Team members are ideal selections for Controller and Evaluator positions during the exercise itself and are considered trusted agents.

Controller/Evaluators are not to act as Role Players during the same exercise.

For site-level exercises, the Exercise Planning Team typically involves the following planning positions:

- EM Coordinator
- Emergency Operations
- Emergency Public Information
- Facility/Activity/Project SME
- Fire / EMS
- Industrial Hygiene

Nuclear Safety must be engaged to ensure that any planned simulations or activities do not violate the facility safety basis documents for nuclear facilities. This is performed through the unreviewed safety question (USQ) process.

- Nuclear Safety (as applicable)
- Lead Exercise Planner
- Nuclear Safety (as applicable)
- Offsite Agencies/Organizations (as applicable)
- Radiological Control
- Security
- Other

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For site-level exercises, there are sub-elements within the Exercise Planning Team, known as Exercise Planning Groups, who are assigned to specific planning areas of the exercise (e.g., safety, security, hazardous material, public information). The Exercise Planning Groups allow team members to focus on specific tasks associated with their planning assignment and area of expertise.

The Exercise Planning Team is responsible for:

- Designing, developing, conducting, and evaluating all aspects of an exercise.
- Determining exercise design objectives, tailoring the scenario to the needs of the participating organizations, and developing documentation used in exercise evaluation, control, and simulation.
- Assisting with developing and distributing pre-exercise materials and conducting exercise briefings and training sessions.
- Meeting as often as necessary to effectively plan the exercise.

A Midterm Planning meeting is also recommended but is not required.

- For site-level exercises, hold the following required meetings:
 - Initial Planning
 - Final Planning

During concepts and objectives planning, meeting, discuss type, scope, objectives, and purpose of exercise.

This meeting can be held in conjunction with the Initial Planning Meeting, include the following:

- Discuss/select exercise objectives.
- Discuss previous exercise issues.
- Discuss/select level of participation.
- Discuss/select exercise play area and limitations.
- Discuss/select scenario (hazards, casualties, etc.).
- Discuss logistics, safety, and security requirements.

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- Discuss planning team assignments and assign Exercise Planning Groups, if needed.
- Discuss exercise planning schedule.
- Identify the need for field supplemental documents to support the EXPLAN.
- If the need for a field supplemental document is identified, then engage the appropriate SME/point of contact (e.g., Radiological Control; Environment, safety, and Health; EMS) to assist with data input Requirements.

Use of actual employee data allows for the evaluation of and/or training to a given facility's accountability mechanisms and should minimize confusion that may be created by artificialities.

- If accountability is included as either training or evaluated objective, then write role-players and/or simulated persons (e.g., mannequins) into the EXPLAN using actual employee data, such as names, employee numbers, and badge numbers.

8.1.1 Midterm Planning Meeting

- Discuss the MSEL.
- Review draft EXPLAN and supporting exercise documents, including information such as the following:
 - Scenario
 - MSEL/Timeline
 - Injects/Contingency Messages
 - Props/Displays
 - Role Players/Simulated Persons

8.1.2 Final Planning Meeting

- Review final EXPLAN and supporting exercise documents.
- Discuss logistics, safety, and security requirements.
- Schedule/conduct exercise location walkthrough (as needed).

8.2 Exercise Preparation

Pre-exercise activities include participant briefings; configuring props or staging equipment; establishing C/E communications; specifying safety and security precautions; making arrangements for food, water, and restroom facilities, if necessary; and arranging to minimize the exercise impact on non-participating and on-going operations.

8.3 Pre-Exercise Briefings

The Lead Exercise Planner is responsible for:

- Conducting a C/E Pre-Exercise Briefing prior to an exercise to cover the following:
 - Outline the EXPLAN (scenario, MSEL, cue cards, etc.) and their assigned duties.
 - Identify the various plans and procedures that the responders are expected to use.
 - Present and/or issue exercise-specific material to the C/Es during this briefing.
 - Cover the exercise scenario and anticipated responder actions, the location and assignment of each C/E (including actors), and specific C/E assignments.
 - Address communications, administrative and logistical details, control cell and simulation cell responsibilities, number and location of C/Es and an in-depth presentation of safety and security issues.
- Creating a Participant Briefing prior to an exercise to cover the following:
 - An overview of exercise safety, participation, rules of engagement, pre-approved simulations (if they do not compromise the scenario), objectives, performance goals, and exercise conduct.
 - As needed, additional exercise-related information (e.g., exercise play area, mock media instructions).

For FPEs, it is highly recommended that Pre-Exercise Participant Briefings be conducted in person via an oral presentation format.

- Presenting the Participant Briefing in a live group setting or via self-guided PowerPoint presentation that requires an electronic acknowledgement “Declaration of Understanding.”

8.3.1 Conducting a Pre-Exercise C/E Safety Briefing prior to an exercise for all field C/Es.

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8.4 Equipment Issue, Scene Setup, and Recovery/Restoration

All exercise-sensitive items (e.g., radios, camera, laptop, smoke/fog machine) must be returned immediately upon completion of the exercise for full accountability.

Any deviation from this must be approved by the Lease Exercise Planner.

The C/Es are responsible for:

- Signing for equipment of the appropriate Drill and Exercise control logs:
 - Controller Vest Sign-Out Log
 - Radio Sign-Out Log
 - Exercise Equipment Inventory Log
- Reporting damaged or non-working equipment to the Exercise Logistics Officer or Lead Exercise Planner, if identified.

The Lead Exercise Planner or Exercise Logistics Officer is responsible for:

- Completing the Exercise Scene Setup Checklist, located in the Drill and Exercise Library folders on the “Network Hondo” share drive, to ensure all logistical requirements have been met and are in place prior to conducting an exercise.
- Setting up the exercise areas as documented in the logistics plan, Exercise Scene Setup Checklist, and MSEL.
- Making the procedures available for drill participants prior to drill initiation, if a task being performed normally requires “in-hand” procedures.

Recovery/Restoration may be completed on the same day or for several days after the exercise, depending upon the complexity and props used for the exercise.

- Restoring the scene to normal conditions, upon completion of the exercise.
- Documenting Recovery/Restoration in a Logistics Plan and/or on the Exercise Scene Setup Checklist (depending on complexity).

8.5 Exercise Conduct

C/E Organizations are assigned to specific exercise venues. There must be an adequate number of C/Es to effectively control and evaluate the exercise. C/Es are trained individuals with prior participation in exercises and some expertise in the areas to be demonstrated.

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8.6 Controller and Evaluator Organization

- Controllers, ensure safe and effective conduct of the exercise.

8.7 Evaluators

- Observe, evaluate, and critique the response.
- Be technically proficient in the areas you are assigned to evaluate.
- Use provided procedures and checklists to evaluate the response actions.

8.8 Rules of Conduct

Confidentiality: Scenario information must be closely guarded and not discussed with potential participants. Any actual or potential compromise of scenario information must be reported to the Lead Exercise Planner immediately.

The C/Es are responsible for:

- Being cognizant of surroundings during communications, including radio communications, ensuring scenario information is not released.
- Ensuring that the drill or exercise is not compromised when determining a location to stage to observe responder activities.
- Protecting EXPLANs, notebooks, comments, or other material that can potentially divulge exercise-privileged information.

Control Cell/Simulation Cell: The Control Cell and Simulation Cell can be co-located or segregated, depending upon the size and complexity of the exercise.

Control Cells are used during site-level exercises that require enhanced exercise control. The Control Cell is managed by a Control Cell Manager and is the primary communications interface between Controllers in the field, exercise venues, HQ, and the Exercise Director. The Control Cell is staffed at an appropriate level to manage and control the exercise, to include a Timeline Coordinator. A Control Cell is an exercise control tool and is implemented at the discretion of the Lead Exercise Planner.

Simulation Cells are used whenever it is necessary for responders to interact with entities not participating in the exercise. The Simulation Cell is located away from responders and is staffed by experienced SMEs who simulate or role-play nonparticipating organizations. Simulation Cells typically interface with participants via telephone, rather than face-to-face. Participants may be given an “Exercise Phone Directory” to use to ensure no calls are actually made to agencies or people who are not

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participating in the exercise. Depending upon the scope of the exercise, a Simulation Cell may consist of one person role-playing many agencies (i.e., many agencies may be listed on the Exercise Phone Directory, all with the same phone number for one role-player), or many persons role-playing many agencies. The development of a Simulation Cell Plan is highly recommended for site-level exercises. A Simulation Cell is an exercise evaluation tool and is used at the discretion of the Lead Exercise Planner.

The Timeline Coordinator is responsible for:

- Ensuring that the exercise timeline remains on schedule—a key factor for proper attainment of exercise objectives.
- Receiving timeline status reports from Lead Controllers.
- Providing this information to the Chief Controller and Exercise Director.

Exercise Data: Data, information, and event evidence are presented to the responders as they would be found, measured, or indicated, with a maximum degree of realism. Information is provided to responders only when it is earned through their action(s), correct use of procedures and equipment, and accurate mitigation strategies and actions.

Cue Cards: Time-related parameters are provided to the responders at the time identified on messages to ensure that the progress of the scenario timeline is on pace and/or to support real event conditions. For authenticity and whenever possible, data sheets, recorder charts, and instrument output information are provided to the responders via cue cards.

The Controller is responsible for:

- Providing such data/information as accurately as possible while considering the simulated time and scenario conditions, if responders require clarification about a particular message or visual cue.
- Using prearranged protocols (e.g., obtain Chief Controller or Lead Controller permission) to formulate an accurate response, if required to create additional information to support the exercise (e.g., the message was incomplete or the information required or requested is not known).

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Phone Directory: Phone directories shall include all known agencies or organizations being simulated/role played. The Phone Directory shall include at least one number identified as “All Others” that players can use when the organization or agency needing to be contacted is not identified.

- Providing phone directories to those responders that make notifications via landline prior to the start of the exercise.

Contingency Messages: Contingency messages provide supplemental symptoms or necessary information specifying existing conditions that will elicit the appropriate decision or response. Injecting approved contingency messages provides instructions, as needed, to keep the exercise on track with the scenario.

- Using contingency messages to force an action by a responder or response organization to keep the exercise on track.
- Issuing contingency messages in accordance with the pre-established exercise protocol.
- Contacting the responsible Lead Controller before injecting the message, if responder actions require a contingency message.
- Not prompting a responder as to what a specific response should be unless a contingency message directs you to do so.
- Clarifying information as long as it does not provide or constitute coaching.

The Lead Controller is responsible for:

- Providing direction as needed when notified of responders performing as expected and a contingency message is not provided.

The Chief Controller is responsible for:

- Holding authority to approve unplanned simulations.

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This differs from free play, which elicits responders to solve the problem in a unique way while not necessarily impairing the overall scope and purpose of the exercise.

Free Play: Realism is enhanced and responder's motivation is improved when responders are granted the latitude to make decisions and take actions that may differ from those anticipated by the scenario or Evaluation Team. The key to managing the exercise is to allow such actions to occur, but preclude actions by responders that would do the following:

- Jeopardize personal safety
- Jeopardize site/facility safety
- Compromise security
- Exceed established exercise scope or limitations
- Preclude exercise objectives from being demonstrated

Prompting: Explicit instructions should be provided to responders and exercise C/Es reinforcing that prompting is not allowed. Prompting occurs when responders are provided advance scenario-related information or guidance regarding anticipated or appropriate response actions. Prompting can occur from either unintentional or intentional action by Controllers, Evaluators, or Observers.

There are two occasions where prompting may be required. The first occasion is where the actions by the responder(s) would significantly impact the timeline of the exercise. The second is where the actions of the responder(s) would cause significant negative learning.

The Controller is responsible for:

- Asking the responder(s) if the actions are in accordance with current plans and procedures, if prompting is needed.
- Providing the responder(s) with the correct action to take and confirm that the direction is completed, if this prompting does not change the responder's course of action.
- Documenting that the information was provided and describe the associated actions by the responder(s).
- Explaining to the responder(s), during the exercise hotwash, why the contingency cue card was injected.
- Reporting prompting to the Chief Controller.

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Drillsmanship: Drillsmanship is acting as if the situation (scenario) is a real event by taking the proper actions or verbalizing what actions the exercise participants would take if not readily apparent to an assigned C/E (e.g., making notifications via telephone). Drillsmanship is the first step in successfully demonstrating the exercise objectives and making a positive impression on the Evaluation Team.

8.9 Principles of Good Drillsmanship

The Exercise Participants are responsible for:

- Understanding the scope of the exercise.
- Asking a Controller, if unsure about a certain organization or agency's participation in the exercise.
- Recognizing that the exercise has objectives that must be satisfied and may require doing things that may not seem realistic.
- Orally describing actions taken.
- Recognizing that a C/E cannot give credit for an unspoken "thought process."
- Talking and acting out actions as much as possible.
- Acting on all Controller instructions.
- Completing the actions as directed and making a note to discuss the disagreement after the exercise during the hotwash, if in disagreement with Controller instructions.
- Not engaging in casual conversations with the Controllers.
- Giving a concise answer, if asked a question by the Controller
- Indicating, if busy and unable to immediately respond, but report back with an answer at the earliest possible time.
- Not engaging in conversation with Observers.
- Asking a Controller for assistance, if an Observer persists in talking.

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Many times the log will be the only documentation of activities that may have been missed by a C/E.

- Maintaining a log of activities.

Communications: All exercise written and verbal communications among participants should be clearly identified as exercise information, and all message transmissions should begin and end with the statement, "This is an exercise." Because offsite parties monitor radio and cellular telephone transmissions, personal information such as the names of individuals should not be transmitted, except through approved protocols (e.g., via MED11-A). All communications must comply with established security protocols.

9.0 EXERCISE PARTICIPATION

9.1 Responders

- Comprise the majority of participants and may include the following:
 - Consequence Assessment Team
 - EOC – WIPP
 - Joint Information Center
 - News media
 - DOE/CBFO Office of public Affairs
 - WIPP Fire/EMS
 - WIPP CMR
 - Radiological Control (RADCON)
 - Offsite agencies (federal, state, local, etc.)
 - Offsite organizations (hospitals, etc.)

9.2 C/E Organization Participation

The Exercise Director is responsible for:

- Taking responsibility for overall exercise conduct, evaluation, coordination, safety, and continuity.
- Starting and terminating the exercise.

Unless an unsafe act is about to or has already occurred, the Exercise Director is the only person authorized to stop or hold an exercise.

An NWP employee (typically the Lead Exercise Planner) serves as the Exercise Director for each exercise.

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For an FPE, the DOE/CBFO EM Program Manager reserves the option to serve as the Exercise Director and an NWP employee acts the Deputy Exercise Director (typically the Lead Exercise Planner).

Deputy Exercise Director, possesses the same level of responsibility and authority as the Exercise Director, but must include the Exercise Director in the decision-making process.

The Chief Controller is responsible for:

- Performing oversight of all Controllers assigned to an exercise.
- Reporting directly to the Exercise Director.
- Participating at the event scene or in the Control Cell.
- Stopping or holding the exercise, if an unsafe act is about to or has already occurred.

The Lead Controller is responsible for:

- Coordinating the activities of those venues that require more than one Controller.
- Resolving any problems and/or concerns and reporting those problems or concerns to the Chief Controller as soon as reasonably possible.
- Stopping or holding the exercise, if an unsafe act is about to or has already occurred.
- Conducting a post-exercise hotwash to discuss strengths, weaknesses, and improvement items with an emphasis on procedures/checklists, equipment, and facility support systems. Documenting applicable comments for inclusion in the AAR.
- Facilitating the hotwash and reinforcing the importance of being self-critical.

The Controllers are responsible for:

- Facilitating the conduct of the exercise by providing simulated emergency data, as determined by the scenario.
- Monitoring the sequence of events, control the flow of messages, and being responsible for the overall conduct of assigned part of the exercise.

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- Controlling the sequence of events to maintain the scenario timeline, injecting cue card or contingency cue card messages, and directing participant actions, as necessary, to preserve the continuity of the exercise.

Controllers are not to prompt the decisions or actions of the Responders and only provide earned information and data (See “Prompting”).

- Ensuring that Responders do not respond in a manner that might jeopardize health and safety of workers or the public or step outside the focus of the exercise objectives.
- Displaying a visual marking of Controller status (e.g., vest, hat, badge marked “Controller”).
- Stopping or holding the exercise, if an unsafe act is about to or has already occurred.

Limited resources often require an individual to serve as both Controller and Evaluator during an exercise. When serving as both Controller and Evaluator, the controller responsibilities should take priority over the evaluation. Exercise continuity is critical to successfully conducting the exercise.

Typically, each exercise venue is assigned a Lead Evaluator.

The Lead Evaluator is responsible for:

- Coordinating activities of several Evaluators for larger or more complicated exercises that involve numerous response venues and emergency functions.
- Observing and documenting the responders' performance.
- Consolidating all Evaluator reports and other data (documents, charts, etc.) that originated from the exercise.
- Providing the evaluation reports and data collected to the Lead Exercise Planner (or person tasked to complete the AAR) to assist with the development of the AAR.
- Ensuring sensitive or classified exercise information is protected at the appropriate level.
- Stopping or holding the exercise, if an unsafe act is about to or has already occurred.

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The Evaluators are responsible for:

- Reviewing the extent of play prior to evaluating the exercise, as applicable.
- Reviewing appropriate emergency response plans, procedures, and checklists prior to the exercise.
- Reviewing plans developed for the exercise (e.g., safety, security, communications, and logistical).
- Attending pre-exercise and post-exercise briefings and meetings.
- Observing and documenting the responders' performance using Evaluator modules or checklists and based on evaluation criteria.
- Observing the control organization's performance controlling and directing the exercise.
- Refraining from interfacing with responders to prevent interruption or prompting.
- Directing responders to address all questions and/or comments to the controller assigned to the venue.
- Stopping or holding the exercise, if an unsafe act is about to or has already occurred.
- Performing a formal evaluation after exercise termination.
- Evaluating responder performance and the adequacy of procedures, facilities, and equipment in accordance with exercise-specific evaluation criteria.
- Documenting errors and problem areas with the scenario or conduct of the exercise.
- Presenting evaluation of the exercise in a formal setting such as the C/E hotwash.

The Exercise Logistics Officer is responsible for:

- Holding responsibility for the overall planning and coordination of logistical needs and scene setup for the conduct of the exercise.
- Reporting directly to the Exercise Director.

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Observers are individuals involved in an exercise solely to observe the activities for official and/or educational reasons.

The Observers are responsible for:

- Not interfering with or becoming involved in any activities.
- Not contributing information or opinions to responders in any fashion.
- Not contributing or participating in the evaluation process.
- Stopping or holding the exercise, if an unsafe act is about to or has already occurred.

Role-players/actors in a Control Cell or at the scene are subject to evaluation of their performance under exercise planning and conduct EEGs.

The Role Players are responsible for:

- Simulating members of non-participating agencies, organizations, or key individuals, including the following:
 - Injured personnel
 - News media (local and national)
 - Emergency Contacts
 - Hospitals
 - Government agencies
 - Non-governmental organizations
- Interacting with participants face-to-face (e.g., at an incident scene) to enable realistic interactions between the ERO responders and those with whom they would expect to interact during the course of an actual emergency response.

The Video/Photography Teams are responsible for:

- Acquiring permission from the WIPP Security Manager or designee on equipment and video photography access requirements.
- Documenting exercise activities using applicable equipment.
- Filming, recording, and photographing exercise response activities, but not interfering with exercise play.

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- Following the same participation rules as Observers (e.g., talk only to Controllers).

9.2.1 Non-participants

Personnel outside the scope of play that continue to perform their normal routine duties as though the exercise is not in progress are designated as “non-participants.” Such routines include activities necessary for continued safe and secure operation of the facility (shadow forces). Efforts should be made to minimize the impact of the exercise on non-participants and to avoid the interface between responders and those individuals.

9.3 Suspension of an Exercise

The Exercise Director is responsible for:

- Being solely responsible for exercise suspension and termination.
- Temporarily suspending an exercise to address safety concerns, security concerns, or environmental conditions.
- Restarting the exercise to allow exercise objectives to be demonstrated when warranted upon addressing the issues, concerns or conditions.
- Terminating the exercise without demonstrating all of the objectives when the issues, concerns, or conditions cannot be addressed or may not be addressed for a long period of time.
- Maintaining the sole responsibility for the decision to go from suspension to termination and execute as warranted.

9.4 Termination of an Exercise

An exercise is terminated when opportunities to meet all exercise objectives have been presented or when an actual event or situation arises that makes it unwise to continue to pursue the exercise objectives. Only the Exercise Director may terminate the exercise. The termination process is as follows:

The Exercise Director is responsible for:

- Making the final decision to terminate in consultation with key NWP and DOE/CBFO personnel, if an actual event, safety and/or security situation identified by Controllers requires the termination of the exercise.

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- Consulting with the Chief Controller, to determine if the objectives have been met or whether it is expected that objectives will not be met.
- Making the decision to terminate the exercise in consultation with the control organization; however, maintaining final termination authority.

The C/Es are responsible for:

- Announcing termination.
- Gathering Response Personnel for the post-exercise hotwash, if participating in the exercise and not involved in the actual event response.

9.5 Post-Exercise Hotwash

9.5.1 C/Es, Following termination of the exercise, conduct a hotwash at each venue (Incident Command Post, EOC, Joint Information Center, etc.).

The Lead Controller is responsible for:

- Leading the hotwash as a forum for participants to provide comments on all aspects of the exercise and suggestions on improving the processes.
- Reinforcing the importance of being self-critical during the hotwash.
- Discussing strengths, weaknesses, and improvement items with an emphasis on procedures/checklists, equipment, and facility support systems.
- Documenting applicable comments for inclusion in the AAR.
- Leading Exercise Planner, conduct a post-exercise formal Evaluation Team Meeting for C/Es to discuss findings and recommendations for improvement.

9.5.2 C/Es, attend the post-exercise formal Evaluation Team Meeting unless excused by the Lead Exercise Planner.

10.0 EVALUATION

Exercises are evaluated based upon the observations of an integrated response to a simulated emergency situation, where multiple agencies, organizations, or activities must function together to mitigate the emergency conditions according to established emergency plans and procedures.

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10.1 Evaluation Process

The Evaluator is responsible for:

- Selecting an accessible location to observe the ERO performance during the exercise.
- Documenting the responders' actions.
- Attending the hotwash where the responders are provided an opportunity to critique the scenario and their performance after the exercise.
- Documenting the findings identified during these hotwash activities.

The Lead Exercise Planner is responsible for:

- Conducting a formal post-exercise Evaluation Team Meeting following each exercise.
- Providing a forum for discussion and correlation of individual observations, identification of major issues, determination of objectives demonstrated, and determination of overall exercise performance.
- Discussing and identifying recommendations for corrective and improvement actions.
- Using the information generated by this meeting as the framework for the exercise AAR.
- Rating the ERO's performance of the objectives as either "Met" or "Not Met."
- Using the following sources of information to evaluate and assist with the development of the AAR:
 - Hotwash comments
 - Evaluation Reports
 - Observations provided by external sources (DOE, DOE/CBFO, Offsite ERO, etc.)

10.2 Evaluation Arbitration

The Lead Exercise Planner/Lead Evaluator is responsible for:

- Arranging an arbitration meeting between the evaluators in dispute, if the Evaluation Team cannot effectively resolve differing opinions.

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The EM&S Manager or Designee is responsible for:

- Serving as Lead Arbitrator for the discussion.
- Briefing the Lead Arbitrator on a summary background of the dispute, including:
 - Exercise Objective(s) in question
 - Response Step(s) in question
 - Standing procedural guidance referenced or expected
 - Facilitate the arbitration meeting
- Providing a decision/ruling based on available evidence and discussion.
- Notifying and providing the issue Responsible Manager with a summary of the arbitration meeting, if the decision/ruling results in a WIPP Form entry.

10.3 Evaluation Ratings

Performance ratings are categorized as either “Met” or “Not Met.” These categories can further be broken down into “Superior Performance,” “Improvement Item,” “Weakness,” and “Deficiency,” as outlined in the table below.

10.4 Exercise Evaluation Ratings

10.4.1 “Met” Performance

A Superior Performance rating **MUST** be documented in detail and verified in the evaluation process to ensure the performance is not inflated. The Exercise Director has final authority.

Superior Performance: A summary of areas identified as performance or documented practices that demonstrate excellence in a specific aspect of an EM activity.

An Improvement Item rating **MUST** be documented in detail to ensure a clear understanding of contributing circumstances is included in the AAR. The Exercise Director has final authority.

Improvement Item: Documentation of deviations concerns, and opportunities for improvement that if implemented would enhance the response, and areas outside of the evaluation criteria.

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10.4.2 “Not Met” Performance

A Weakness rating **MUST** be documented in detail to ensure a corrective action can be developed. The Exercise Director has final authority.

Weakness: An actual or projected failure to meet an evaluation criterion, thereby contributing to a direct impact or creating an indirect impact to the associated basic EM activity, such as planning preparedness, readiness assurance, or response.

A Deficiency rating **MUST** be documented in detail to ensure a corrective action can be developed. The Exercise Director has final authority.

Deficiency: An actual or projected failure to meet an evaluation criterion, thereby creating a direct impact to the associated basic EM activity, such as planning preparedness, readiness assurance, or response.

10.5 After Action Report

An AAR that provides an account of exercise control, ERO performance, and self-assessment evaluation findings is produced following an exercise. When repeat findings are identified, a causal analysis is performed that focuses specifically on why previously identified corrective actions were not performed or were ineffective. The repeat finding review results are incorporated into the AAR which contains the following:

- A narrative summary with introductory and general statements noting exercise scope, purpose, participants, scenario summary, and overall evaluation results.
- Previous exercise issue validation results.
- Summary matrix of objective performance by response organization/facility.

The Lead Exercise Planner is responsible for:

- Conducting a post-exercise Evaluation Team Meeting, typically the day after the exercise.

The Evaluators are responsible for:

- Attending the post-exercise Evaluation Team Meeting.

Typically, this submittal is expected to be completed the same day as the post-exercise Evaluation Team Meeting.

- Completing and submitting exercise evaluation reports to the respective Lead Evaluators for approval within one week of the exercise conduct.

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The Lead Evaluators are responsible for:

- Consolidating the evaluation reports for your respective venues and submitting the consolidated reports to the Lead Exercise Planner (or person assigned to complete the AAR).

The Lead Exercise Planner may have Evaluators consolidate their reports as a functional group and then begin development of the major sections of the AAR the day after the exercise.

The Lead Exercise Planner or Designee is responsible for:

- Reviewing the results and consolidating the reports into a draft AAR.
- Submitting the draft AAR for technical edit (allow 1 week).
- Transmitting the draft AAR to the Evaluation Team and exercising participants for a factual accuracy review upon completion of the technical edit.
- Reconciling comments and finalizing the AAR.
- Submitting the final AAR to DOE/CBFO EM Program Manager for submission to DOE/NNSA HQ within 30 working days from the date of the exercise.
- Printing a hard copy of AAR for record retention and consolidating with exercise participant documentation and EXPLAN after the exercise is conducted.
- Filing AAR and EXPLAN in the Drill and Exercise Library folders on the “Network Hondo” share drive.
- Submitting the AAR to the Readiness Assurance Coordinator for entry into WIPP Form.

11.0 ISSUES MANAGEMENT

The readiness assurance process for exercise findings is performed in accordance with WP 15-GM1002, *Issues Management Processing of WIPP Forms*.

12.0 EXERCISE ISSUE VALIDATION PROCESS

12.1 Overview

Exercise issues must be validated through the exercise evaluation process to ensure the corrective action was effective in resolving the original issue (Previous Exercise Issue Tracking System). Previous exercise issues are tracked by the EM Issues

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Management Coordinator, incorporated into the exercise evaluation process, and formally evaluated during future exercises. The results of the previous exercise issues validation process are formally tracked and documented in the AAR and a tracking system managed by the DEP Manager or designee. Previous exercise issues are reviewed for applicability prior to planning an exercise. Previous exercise issues are limited to findings documented in an exercise AAR.

12.2 Pre-Exercise Planning Activities for Exercise Issue Validation

The Lead Exercise Planner is responsible for:

- Reviewing the Previous Exercise Issue Tracking System for previous exercise issues and identifying applicability to the planned exercise facility/activity.
- Verifying that the previous exercise issue has been completed and closed.
- Notifying the responsible manager of intention to validate the finding during the upcoming exercise.
- Incorporating the applicable previous exercise issues into the exercise evaluation criteria and documenting them in the EXPLAN.
- Providing a detailed briefing on previous exercise issues during the Pre-Exercise C/E Briefing.
- Ensuring the Evaluators assigned to the venue responsible for the issue fully understanding the issue and the action taken to resolve the original issue.

12.3 Exercise Issue Validation During Exercise Conduct

The Lead Exercise Planner is responsible for:

- Incorporating the results in the Previous Exercise Issue Validation Summary in the AAR.

The Lead Exercise Planner or Readiness Assurance Coordinator is responsible for:

- Updating the Previous Exercise Issue Tracking System based on completion of the CAP and submission to WIPP Form.

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13.0 CANCELLATION OF DRILLS OR EXERCISES

13.1 Cancellation of Drills

The Lead Drill Planner is responsible for:

- Notifying all drill participants with email that identifies the drill cancellation and/or re-scheduled drill date and time if applicable.

13.2 Cancelation of Exercises

The Lead Exercise Planner is responsible for:

- Notifying all exercise participants with email that identifies the exercise cancellation and/or re-scheduled exercise date and time if applicable.

14.0 EXERCISES PLANNED BY OTHERS

Occasionally, a non-NWP agency or organization may contact an NWP employee during the planning of an exercise on the WIPP or at SWB that evaluates an element of the DOE/CBFO ERO.

14.1 Trusted Agent

If notified that an exercise not planned by NWP is scheduled and may evaluate a segment of the DOE/CBFO ERO, then inform the DEP Manager of the exercise.

If possible, provide the following information:

The Lead Planner is responsible for:

- Name, agency or organization, and contact information.
- Date of exercise.
- ERO section being evaluated.

The DEP Manger is responsible for:

- Requesting, prior to the execution of the exercise that management of the evaluated ERO section be offered the opportunity to observe the exercise, when possible.
- Resolving conflict in schedules between the exercise and the evaluated ERO element.

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REFERENCES			
DOCUMENT NUMBER AND TITLE	BASELINE DOCUMENT	REFERENCED DOCUMENT	KEY STEP
Title 10 Code of Federal Regulations Part 830, <i>Nuclear Safety Management</i>		✓	
29 CFR §1910.38, <i>Emergency Action Plans</i>		✓	
30 CFR §57.4361, <i>Underground Evacuation Drills</i>	✓		
DOE Order 150.1, <i>Continuity Programs</i>		✓	
DOE O 151.1C, <i>Comprehensive Emergency Management System</i>	✓	✓	1
DOE Guide 151.1-1 Volume VII, <i>Exercises</i>	✓		
DOE G 151.1-3, <i>Programmatic Elements</i>		✓	
DOE O 425.1D, <i>Verification of Readiness to Start Up or Restart Nuclear Facilities</i>		✓	
DOE O 426.2, <i>Personnel Selection, Training, Qualification, and Certification Requirements for DOE Nuclear Facilities</i>		✓	
DOE-HDBK-1099-96, <i>Establishing Nuclear Facility Drill Programs</i>		✓	
WP 12-9, <i>WIPP Emergency Management Plan</i>	✓	✓	
WP 12-ER.08, <i>WIPP Confined Space Rescue Guide</i>		✓	
WP 12-ER.12, <i>WIPP Abnormal Condition Drill Program</i>		✓	
WP 12-ER3006, <i>Abnormal Condition Drills</i>		✓	
WP 14-TR.01, <i>WIPP Training Program</i>		✓	
WP 15-GM1002, <i>Issues Management Processing of WIPP Forms</i>		✓	
WP 15-PA2000, <i>Lessons Learned Bulletin Development</i>		✓	
EA12ER3006-1-0, <i>Abnormal Condition Drill Plan</i>		✓	
EA12ER30062-2-0, <i>Abnormal Condition Drill After Action Report</i>		✓	

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Attachment 1 – Definitions

Abnormal Condition Drill: Drills that simulate the circumstances of actual abnormal facility conditions. Examples of such may include simulated gauge readings, valve malfunction, alarms, announcements, a fire, leaking water, breaker positions, strobe lights, etc. Simulations may be in the forms of placards, made-up gauge faces, verbal commands, cue cards, etc. ACDs are required for maintenance of personnel qualification/certification.

Abnormal Condition Drill Evaluation: A documented evaluation of an individual's knowledge and skills. The operational evaluation is a facility walkthrough that may include system and/or component operation, or simulation of operations, during which the candidate is observed and questioned regarding procedures, safety implications, and approved documents.

Cues and Props: Information and items used to control the progress of the drill.

Drill: Drills provide emergency response training and a mechanism to informally evaluate emergency response capabilities of the ERO. Drills provide hands-on training experience for emergency responders. Drills vary in complexity and are designed, developed, documented, and conducted differently from an exercise. Drills play an important role in developing and maintaining emergency response capabilities. There are several different types of drills that are scheduled, planned, and conducted at NWP-managed facilities.

Discussion-Based Drill: Drills used primarily as a starting point in the building block approach to a drill program. They focus on strategic, policy-oriented issues and are ideal for familiarizing responders with current capabilities at both the site and facility levels. In addition, they usually highlight existing plans, policies, mutual-aid agreements, and procedures. Discussion-based drills include seminars, workshops, tabletops, and games. Drills are not formally evaluated and focus primarily on training. Discussion-based drills can be documented by a Drill Plan (recommended) and further complemented by a PowerPoint presentation, handouts, or other available media.

Evaluation Criteria: Evaluation criteria provide the standards and activity- or function-specific criteria used to evaluate an exercise. The evaluation criteria are based upon the objectives identified in the EXPLAN.

Exercises: Exercises provide a mechanism to evaluate emergency response capabilities of the ERO. Exercises are a tool to measure response capabilities through a formal evaluation process. Exercises vary in complexity and are designed, developed, documented, and conducted differently from a drill. Exercises play an important role in developing, maintaining, and measuring emergency response capabilities.

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Exercise Evaluation Guides (EEGs): Guides developed to assist in exercise evaluation. EEGs incorporate the critical tasks that should be completed in an exercise. EEGs are intended for use by both experienced Evaluators and SMEs who may have little or no exercise evaluation experience. EEGs provide Evaluators with information on what they should expect to see at the specific location or in the specific condition. Although a valuable and recommended tool, EEGs are not required during the evaluation of an exercise.

Exercise Plan (EXPLAN): An EXPLAN is developed and approved for each EM exercise prior to the conduct of the exercise. EXPLANS document facility- and site-level exercises.

Facility/Activity-Level Exercises: Exercises designed to test facility-level responders, limited first-responders, and support facilities and primarily focus on facility/activity-level objectives. Facility/activity-level exercises performed at DOE/CBFO are FEs. A facility-level exercise can be conducted in lieu of a facility-level quarterly drill. At a minimum, the NRNF is required to conduct an evaluated facility-level exercise annually.

Full Participation Exercises (FPEs): Exercises similar to an FSE except that offsite elements are required to be invited to participate. Participation can include local and state agencies, DOE/NNSA HQ, local hospitals, and other designated mutual-aid partners. An FPE is required every 3 years. The general WIPP population (those not directly affected by the scenario or exercise play) might not participate to limit the impact on day-to-day WIPP operations. The FPE is designed to test the interface with offsite mutual-aid partners and other organizations that supplement or support response efforts.

Full Scale Exercises (FSEs): Complex exercises that test many aspects of an integrated emergency response. They focus on implementing, analyzing, and evaluating plans, policies, and procedures and are conducted in a real-time, stressful environment that closely mirrors a real event. First responders and resources are mobilized and deployed to the scene where they conduct their actions, as nearly as possible, as if a real incident had occurred. Offsite elements can be invited to participate, but are not required.

Functional Exercises (FEs): Exercises designed to test and evaluate individual capabilities, multiple functions, or activities within a function, or independent groups of functions. Movement of personnel and equipment is simulated or very limited.

Games: Games are a simulation of operations that often involve two or more teams, usually in a competitive environment, using rules, data, and procedures designed to depict an actual or assumed real-life situation. Responders are presented with scenarios and must perform tasks associated with a scenario episode. The goal is to explore decision-making processes and the consequences of those decisions.

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General Facility: A facility that has a minimal hazard risk (i.e., facility hazards do not require an EPHA) and require a minimal preparedness level. A general facility is any facility that is nonnuclear and not highly technical where risk of hazardous materials exposure is low (i.e., administrative facilities).

Category II/Non-Reactor Nuclear Facility: A Non-Reactor Nuclear Facility (CAT II/NRNF) where an activity is conducted for, or on behalf of, DOE and includes any related area, structure, facility, or activity to the extent necessary to ensure proper implementation of the requirements established by 10 CFR 830, "Nuclear Safety Management," or successor document.

Hotwash: A critique conducted immediately following a drill or exercise to provide an opportunity for players/responders to discuss their own perspectives on the activities and events. These critiques are typically conducted "in place" (e.g., incident command post, field teams, EOC) by the lead responder or controller. Participants are expected to be self-critical in an effort to achieve continuous improvements.

No-Notice Exercise (NNX): (Although most frequently performed as site-level exercises, NNXs may also be performed at the facility level). Exercises that objectively test the ability of emergency response elements to respond without prior notice to a simulated Operational Emergency. The DOE/HQ Office of Emergency Management schedules (with facility/site or activity concurrence), conducts, and documents the NNX and its evaluation. This includes developing and coordinating the exercise design and plan, providing an exercise director and C/Es, conducting participant and formal C/E critiques, and producing an AAR.

Operational Evaluation: A documented evaluation of an individual's knowledge and skills. The operational evaluation is a facility walkthrough that may include system and/or component operation, or simulation of operations, during which the candidate is observed and questioned regarding procedures, safety implications, and Technical Safety Requirements.

Operations-Based Drills: Drills characterized by an actual response, mobilization of apparatus and resources, and commitment of personnel over an extended period of time. Operations-based drills must be fully documented in a Drill Plan. Operations-based drills are a coordinated, supervised activity usually employed to test a single specific operation or function. Operations-based drills provide the opportunity to train personnel, test new policies and procedures, and practice new skills.

Operations-Based Exercises: Exercises characterized by an actual response, mobilization of apparatus and resources, and commitment of personnel over an extended period of time. Operations-based exercises must be fully documented in an EXPLAN. Operations-based NRNF exercises fall into two categories: facility-level exercise and site-level exercise. Exercise types are further defined as FE, FSE, FPE, and NNX.

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Attachment 1 – Definitions

Project Lead: Cognizant person responsible for ensuring that project goals and task(s) are met at NRNF. The Project Lead, or equivalent position, has the technical expertise and provides guidance to the ACDC during the drill scenario development process.

Seminar: Seminars are used to orient participants to, or provide overview of, authorities, strategies, plans, policies, procedures, protocols, response resources, and new concepts/ideas. Seminars can be a starting point when developing or making major changes to plans and procedures.

Site-Level Exercises: Site-level exercises are complex exercises that test many aspects of an integrated emergency response. Site-level exercises focus on implementing, analyzing, and evaluating plans, policies, and procedures. The exercise is conducted in a real-time, stressful environment that closely mirrors a real event. First responders and resources are mobilized and deployed to the scene where they conduct their response actions, as nearly as possible, as if a real incident had occurred. Offsite elements can be invited to participate; however, invitations for offsite participation are only required every 3 years. Site-level exercises performed at DOE/CBFO can be FSE, FPE, and NNX. The WIPP must conduct a site operations-based exercise every 3 years that includes an external DOE evaluation.

Tabletop Drill: Tabletop drills are low-stress events that stimulate discussion of simulated events or conditions. Participants discuss issues in depth and make decisions using slow-paced, problem-solving methods in contrast to the fast-paced, spontaneous decisions needed during actual or simulated emergency conditions. Tabletop drills are designed as an early step along the way to prepare for FEs and FSEs. Constructive problem solving is the goal of the drill.

Training:

- **Controller/Evaluator** – EOC-103, Controller-Evaluator Training, or equivalent external training as approved by the Lead Exercise Planner.
- **Abnormal Conditions Drill Coordinator** – ACDC should be familiar with facility, systems, or equipment specified in the drill scenario, and may be a member of the operating staff.

Workshops: Workshop are similar to seminars, but player interaction is increased and the focus is on achieving or building a product (plan or procedure) by collecting and sharing information, obtaining different perspectives, training groups in coordinated activities, and team building.

Template for Programs and Plans
WP 12-ER.13, Rev. 0

Attachment 2 – Appendix A - Drill Cues and Props Example

Attachment 2 – Appendix A - Example Drill Cues

Drill Cues and Props

The following examples of drill cues and props are a combination of several groupings being used by DOE facilities. This list is not a requirement, nor is it meant to be all inclusive or used as the only grouping of drill cues and props. This is only an example, and your cues and props should conform to any facility requirements and support the drill scenario.

CONDITION	CUES AND PROP USED TO SIMULATE CONDITION
FIRE	Waving a red cloth, flag, plastic bag, or red flashing light
LIGHT SMOKE	Waving a grey cloth, flag, plastic bag, or a smoke generator
HEAVY SMOKE	Waving a black cloth, flag, plastic bag, or a smoke generator
WATER (H2O)	Covering surface with blue cloth, sheet, or tarp
FIRE OUT, SMOKE CLEAR	Waving a white cloth, flag, or plastic bag
CAUSTIC SPILL	Orange cloth, flag, or bag on floor
ACID SPILL	Purple cloth, flag, or bag on floor
OIL SPILL	Brown cloth, flag, or bag on floor/ground
CONTAMINATED SPILL	Actual water on the floor or blue cloth, flag, or bag on floor
BREAKER-CLOSED/ OPEN/TRIPPED	Laminated sign indicating breaker status Letters should be large enough to read at 4-6 feet
VALVE - OPEN/ CLOSED/THROTTLED	Laminated sign indicating valve position Letters should be large enough to read at 4-6 feet
RUPTURED PIPE	Crumpled aluminum foil wrapped or taped to a pipe
ALARM	Electronic buzzer
ALARM LIGHT	"Yellow sticky" (or something similar) or laminated sign on alarm light
INJURED/CONTAMINATED PERSON	Either a "dummy" or live "actor" simulates injury using moulage and makeup or taped-on signs
ANALOG INDICATION	Clear plastic stick-on gauge faces with needle indicators (allows actual indications to still be monitored) Small signs with needle pointing to a number hanging on or near meter face
EXPLOSION	"Boom" sign or confetti
DARK, DUE TO SMOKE OR LIGHTS OUT	Darkened face mask or glasses, or the main lights are out with only emergency lighting on Use caution as personnel injury could occur Use extra safety monitors to ensure that facility operating personnel do not injure themselves

Template for Programs and Plans
WP 12-ER.13, Rev. 0

Attachment 3 – Appendix B - Full Participation Exercise Documentation Submission Schedule

Full Scale Exercise Documentation Submission Schedule

Full Scale Exercise Planning Recommendations	
Days Prior to Exercise	Full Scale Exercise Planning Activity
35	NWP provides Exercise Plan to the DOE/CBFO Assistant Manager for Operations (for approval).
30	CBFO provides Exercise Plan to DOE/NA-40 and DOE/EM-44.

Full Participation Exercise Documentation Submission Schedule

The table below specifies additional planning recommendation during Full Participation Exercises.

Full Participation Exercise Planning Recommendations			
Element Activities	90 Days	60 Days	30 Days
Purpose	complete draft	final	final
Scope	complete draft	final	final
Focus Area	complete draft	final	final
Objectives	complete draft	final	final
Design and Development Guidelines	complete draft	final	final
Exercise Organization	--	draft	complete draft
Scenario Narrative	draft	complete draft	final
Rules of Conduct	--	draft	final
Safety Issues	--	draft	final
Security and Access Planning	--	complete draft	final
Public Information Education Planning	--	draft	final
Timeline of Key Scenario	--	complete draft	final
Message Injects	--	complete draft	final
Exercise Control	--	--	final
MSEL	draft	complete draft	final
Exercise Evaluation	--	draft	final
Logistics	--	draft	final
Schedule of Events	--	complete draft	final
Communications Plan	--	draft	complete draft
Glossary of Acronyms	--	complete draft	final

Full Participation Exercise Submission Recommendation for Reviewing Organizations
90-Day Submission Summary
<ul style="list-style-type: none"> Electronic copy or hard copy to the EM & Security Department Manager NWP submits electronic copy or hard copy to DOE/CBFO Assistant Manager for Operations DOE/CBFO submits electronic copy to DOE/NA-40 and DOE/EM-44 for review, comment and further dissemination to other DOE/NNSA HQ elements (as required)

Template for Programs and Plans
WP 12-ER.13, Rev. 0

Attachment 3 – Appendix B - Full Participation Exercise Documentation Submission Schedule

60-Day Submission Summary
<ul style="list-style-type: none"> • Electronic copy or hard copy to the DOE/CBFO EM Program Manager (for approval) • Electronic copy or hard copy to the EM & Security Department Manager (for approval)
Full Scale/Participation Exercise Submission Recommendation for Reviewing Organizations
35-Day Submission Summary
<ul style="list-style-type: none"> • Electronic copy or hard copy to the EM & Security Department Manager (for approval) • NWP submits electronic copy or hard copy to the DOE/CBFO Assistant Manager for Operations (for approval) • DOE/CBFO submits electronic copy to DOE/NA-40 and DOE/EM-44 for further dissemination to other DOE/NNSA HQ elements (as required)

ATTACHMENT 30
WP 12-ER3006 ABNORMAL CONDITION DRILLS
29 PAGES

WP 12-ER3006

Revision 0

Abnormal Condition Drills

Management Control Procedure

EFFECTIVE DATE: 10/08/14

David Stuhan
APPROVED FOR USE

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CHANGE HISTORY SUMMARY

REVISION NUMBER	DATE ISSUED	DESCRIPTION OF CHANGES
0	10/08/14	• New document.

INTRODUCTION ^{1,2}

This procedure provides instruction for planning, conducting, and evaluating Abnormal Condition Drills at the Waste Isolation Pilot Plant (WIPP) in accordance with WP 12-ER.12.

Performance of this procedure generates the following record(s), as applicable. Any records generated are handled in accordance with departmental Records Inventory and Disposition Schedules.

- EA12ER3006-1-0, *Abnormal Condition Drill Plan*
- EA12ER3006-2-0, *Abnormal Condition Drill After Action Report*
- EA12ER3006-3-0, *Abnormal Condition Drill Evaluation Criteria*
- EA12ER3006-4-0, *Administrative Drill Evaluation Criteria*

REFERENCES			
DOCUMENT NUMBER AND TITLE	BASELINE DOCUMENT	REFERENCED DOCUMENT	KEY STEP
DOE-HDBK-1099-96, <i>Establishing Nuclear Facility Drill Programs</i>	✓		1
DOE O 426.2, <i>Personnel Selection, Training, Qualification, and Certification Requirements For DOE Nuclear Facilities</i>	✓		2
WP 12-9, <i>Waste Isolation Pilot Plant Emergency Management Program</i>	✓		
WP 12-ER.12, <i>Abnormal Condition Drill Program</i>	✓	✓	
WP 12-ER3004, <i>WIPP Drills and Exercises</i>	✓		
WP 15-GM1002, <i>Issues Management Processing of WIPP Forms</i>		✓	
EA12ER3006-1-0, <i>Abnormal Condition Drill Plan</i>		✓	
EA12ER3006-2-0, <i>Abnormal Condition Drill After Action Report</i>		✓	
EA12ER3006-3-0, <i>Abnormal Condition Drill Evaluation Criteria</i>		✓	
EA12ER3006-4-0, <i>Administrative Drill Evaluation Criteria</i>		✓	

PRECAUTIONS AND LIMITATIONS

- Drill plan shall include criteria for terminating a drill and shall be identified and documented in the drill plan.
- **IF** during the conduct of a drill, an actual abnormal or emergency condition occurs that would be affected by the drill or involve the participants, **THEN** the individual observing the abnormal condition or having been made aware of the problem must immediately notify the Abnormal Condition Drill Coordinator or Controller. The drill shall be suspended or terminated and resources directed toward mitigating the actual abnormal or emergency condition.
- Participants are expected to comply with WIPP safety and security rules and practices. The drill plan shall include reminders concerning general and participant-specific safety requirements and hazard mitigation.
- Explicit instructions shall be given to drill team members to avoid prompting in drills. However, if the drill is conducted as a training evolution, then prompting is appropriate to make the drill a learning experience.

PREREQUISITE ACTIONS

- 1.0 Abnormal Condition Drill Coordinator, complete EA12ER3006-1-0 using the instructions provided in attachment 1 and guidance in WP 12-ER.12.
- 2.0 Abnormal Condition Drill Coordinator and Functional Manager, perform the following:
 - 2.1 Review the operational response procedure to ensure that it adequately mitigates the hazards that may be introduced by the simulation method and facility conditions at the time the drill is run.
 - 2.2 If the hazards are not adequately mitigated by the operational response procedure or if the operational activity response is not covered by an approved procedure, a hazard analysis must be completed. Any required mitigation actions must be addressed in the drill plan.
- 3.0 Abnormal Condition Drill Coordinator, ensure sufficient precautions, limitations, and hazard mitigation are established and adhered to for the safe conduct of the drill.
- 4.0 Abnormal Condition Drill Coordinator, assign drill safety officers if required by the drill plan.

PERFORMANCE

1.0 PRE-DRILL BRIEFINGS

NOTE

Briefings ensure that Controllers and Evaluators have a general understanding of the objectives, scenario, security concerns, safety issues, and an in-depth understanding of respective areas of responsibility. Briefings shall emphasize participants' need to maintain formality and professional demeanor throughout the drill.

NOTE

To test actual player responses to abnormal situations, the players may not receive a full pre-drill briefing unless there is a specific need to establish initial conditions or key safety points.

To assist in achieving objectives and to ensure compliance with safety and security precautions, as well as other rules of conduct, observers shall be briefed before the drill.

- 1.1 Abnormal Condition Drill Coordinator, prior to the start of the drill, instruct the drill team on roles and responsibilities.
- 1.2 Abnormal Condition Drill Coordinator, brief the drill team with emphasis on the following areas:
 - Identification of initial conditions, including props or staging
 - Placement and responsibilities of each controller, safety monitor, and evaluator
 - Methods for communication among controllers
 - Handling of messages and information flow
 - Approved simulations
 - Potential problem areas/interaction points
 - Handling of actual abnormal conditions
 - Expected actions
 - Predetermined drill termination criteria

1.3 Controller/Evaluator, brief the drill team with emphasis on the following areas:

- A summary of the entire scenario and anticipated player response actions
- Location and assignments for each controller/evaluator
- Administrative and logistics details
- An in-depth discussion of safety or security issues
- An in-depth discussion of each controller/evaluator's specific assignments
- A discussion of the details for controlling complex or sensitive parts of the drill
- If needed, a tour of the location(s) involved in the drill and familiarization with drill tools and equipment

2.0 DRILL CONDUCT

NOTE

Abnormal Condition Drill Coordinator, at any time, may terminate the drill for any of the following conditions:

- If personnel/participants make mistakes in magnitude and/or frequency that, in the opinion of the Drill Evaluation Team, would negatively impact a technical safety requirement or facility authorization basis.
 - If personnel/participants deviate from the scenario to the extent that the objectives cannot be adequately demonstrated.
 - If an actual event occurs such that continuation of the drill is not practical or safe.
 - Participants successfully reach the appropriate termination point, consistent with the purpose, scope, and objectives of the drill.
-

2.1 Controllers, evaluators, observers, and safety officers, don vests, hats, armbands or other identifying clothing, to indicate respective positions.

NOTE

Communication to initiate the drill shall clearly indicate that the event is a drill. Specifically, communications shall start and end with the words "THIS IS A DRILL, THIS IS A DRILL." This requirement does not apply to face-to-face communications.

- 2.2 Central Monitoring Room Operator (CMRO), Facility Shift Manager (FSM), or designee, announce on the voice paging system that the drill window is open, as well as the specific facility where the drill is taking place, if appropriate.
-

NOTE

Wherever possible, use of moulage and makeup on players (who are supposedly injured) is recommended to add realism. To further enhance realism, drill team members should limit the amount of verbal communication between themselves and the players. To that end, props are an effective means of communicating necessary drill stimuli.

- 2.3 Controller(s), present scenario information, data, and evidence to the players as it would be found, measured, or indicated, with a maximum of realism, but with the caveat that a drill is in effect. For authenticity, and wherever possible, provide radiation information, data sheets, recorder charts, and instrument output information. Use liquids, solids, and other "stage" props to provide visual evidence, as appropriate. If possible, the event shall appear to the players as if it is actually occurring.
- 2.4 Controller(s), if procedures call for the use of protective equipment or clothing, ensure the actual protective equipment is used during the drill.
- 2.5 Controller(s), to control the progress of a drill, present messages to players verbally or through the use of cue cards/paper injects to ensure that information is correctly understood.
- 2.6 Players, acknowledge that you have received and understand messages by repeating the information back to the controller providing the input.

NOTE

Free play is an extension of realism, and players should be permitted to make decisions and take actions they consider appropriate to the scenario as much as possible. Actual equipment and procedure problems identified during the conduct of abnormal condition drills interject a form of free play. Solutions to actual equipment or procedure problems (on a real-time basis, during the drill) afford a valuable evaluation of the conduct of operations training and the safety culture of the players.

2.7 Controller(s), allow the players to proceed with their actions and notify the Abnormal Condition Drill Coordinator or Lead Controller if a deviation is occurring. If free play is NOT allowed due to potential adverse effects on systems or operations, then the drill plan should indicate that no free play is allowed.

2.8 Controllers, preclude actions by players that would

- Jeopardize personnel safety
- Jeopardize plant/facility safety
- Violate radiological controls
- Violate security requirements
- Exceed established drill scope or limitations

2.9 Controllers, note any intended action of a player that compromises safety or security, but preclude that intended action from actually occurring.

3.0 DRILL CLOSURE AND RESTORATION REQUIREMENTS

3.1 Drill team, coordinate restoration activities necessary to return facility operations to normal, such as returning safety equipment to its proper location and restocking used items (or ensuring used items will be restocked).

3.2 Abnormal Condition Drill Coordinator, announce to the players and drill team that the drill is terminated.

3.3 Abnormal Condition Drill Coordinator, ensure that the CRMO, FSM, or designee, announces on the public address system that the drill window is closed.

3.4 Abnormal Condition Drill Coordinator, inform the Functional Manager that the drill is terminated.

3.5 Abnormal Condition Drill Coordinator, confirm actions necessary to reset the alarms if adjusted to force an alarm.

3.6 Functional Manager or designee, restart system(s), if required, per applicable procedure(s).

3.7 Abnormal Condition Drill Coordinator ensure props are properly removed and/or disposed.

4.0 EVALUATION, AFTER ACTION REPORT, AND CORRECTIVE ACTIONS

4.1 Abnormal Condition Drill Coordinator, perform the following actions:

- Schedule and conduct a drill critique immediately following the drill. Meet with the drill team members to go over their evaluation notes and discuss drill performance prior to meeting with the participants.
- Open the critique with a statement of the goals/objectives, and summary of the scenario. Emphasize that the critique is not intended as a forum to assign blame or rate individual performance.
- Collect all chronology logs, checklists and other documents from the drill team members.
- Consolidate all notes, observations, weaknesses, improvement items, and identified deficiencies.
- Determine pass/fail for the drill based on the information from the drill team.
- Record attendance of drill participation using the current approved Training Roster from the Training Department.

4.2 Players, meet (in a separate room if possible) to discuss the perception of the drills' effectiveness, discuss how the drill went, and complete the player feedback form.

4.3 Abnormal Condition Drill Coordinator, prepare a written summary subsequent to each drill to document the event and the specific recommended corrective/improvement actions to be taken.

4.4 Abnormal Condition Drill Coordinator, complete an After Action Report (EA12ER3006-2-0) using the instructions provided in attachment 2.

4.5 Abnormal Condition Drill Coordinator, complete the Abnormal Conditions Drill Evaluation Criteria worksheet (EA12ER3006-3-0).

4.6 Abnormal Condition Drill Coordinator, if applicable, complete the Administrative Drill Evaluation Criteria worksheet (EA12ER3006-4-0).

- 4.7 Abnormal Condition Drill Coordinator, notify the Functional Manager if a drill is evaluated as substandard (either marginally satisfactory or a failure), determine if any compensatory measures are necessary. In all cases of substandard performance, identify the issue on a WIPP Form in accordance with WP 15-GM1002.
- 4.8 Abnormal Condition Drill Coordinator, notify the Functional Manager if a drill's evaluation proves satisfactory (pass), but an individual (player) fails, brief the individual on why his or her actions were substandard to correct the problem(s), and if needed, develop an individual action plan.
- 4.9 Responsible Functional Manager(s), prepare a corrective action plan to correct deficiencies identified during the drill(s). The plan will be developed (subsequent to the completion of the drills) by reviewing the recommended corrective and improvement items resulting from the drill evaluations and critiques. Successful performance of an additional drill(s) shall be required if a drill is failed.

Attachment 1 – Abnormal Condition Drill Plan Instructions

ABNORMAL CONDITION DRILL PLAN INSTRUCTIONS

Use these instructions to complete the Abnormal Condition Drill Plan Template. When preparing a scenario, remember that a simple drill may often accomplish training objectives more effectively than a complicated one. However, the more detailed the scenario is in terms of cues, props, and specific duties of evaluators and safety representatives, the less chances there are for a problem to occur during the abnormal condition drill. In any case, drills developed for the facility should not lead to or have the potential to create safety concerns.

Cover Sheet Components

Drill Title: A brief name for the abnormal condition drill to be conducted (e.g., radioactive material contamination).

Drill Number: Acquire a unique Abnormal Condition Drill number from the Emergency Management.

Drill Date: List the month, day, and year the abnormal condition drill will be conducted.

Drill Approval Form Components

Abnormal Condition Drill Approval: Obtain approval from the facility/project to conduct a facility/activity/project-level abnormal condition drill. The Abnormal Condition Drill Plan requires concurrence from the Project Lead and a subject matter expert, as well as approval of the Functional Manager

Drill Plan Components

- 1.0 Participants/Pre-Drill Brief:** List the names of the individual(s)/group/team/section, etc. involved in the abnormal condition drill.
- 2.0 Purpose:** Describe the primary reason or programmatic driver for conducting the abnormal condition drill (e.g., to verify operators can startup the machinery which failed).
- 3.0 Scope: Procedure Title, Number, and Revision:** List the activity/process technical basis document from which the drill criteria and objectives are derived. Define the boundaries of the Abnormal Condition Drill in a short statement describing who, what, where, when, and how. Define the depth of the Drill and associated level of participation. Describe the physical location of the play area where the Drill is being conducted to decrease operational impacts.

Attachment 1 – Abnormal Condition Drill Plan Instructions

- 4.0 Expected Response Actions:** A summary of expected response actions based on approved procedures, checklists, etc. based on the event conditions present.
- 5.0 Objectives/Evaluation Criteria:** Select measurable objectives from the facility/project compliance documents. Create evaluation criteria based upon the actions/steps from the compliance document(s) for the conduct and evaluation of the abnormal condition drill. Objectives become the evaluation criteria against which personnel actions are measured. Describe the response expected from all personnel. Give details for any special actions or activities if required. Describe the general sequence of events for the facility and the final conditions. Typically, the expected response is already identified in the facility's compliance documents (procedures). It is generally insufficient to just list the procedure so include any details in this section that allows actions to be properly evaluated. Details will also ensure that the safety representative has a better chance of acting on a problem before damage occurs.
- 6.0 Initial Conditions:** Identify the initial conditions for the drill, e.g., the facility configuration needed to meet the objective. List all organizations that could be affected by the conduct of the drill and notify them prior to drill initiation (e.g., fire department, safeguards and security, facility emergency response organizations). List any special safety or hazard considerations here as well as Technical Safety Requirements (TSR) for the affected systems or components. Hazards are generally identified in facility procedures, Safety Analysis Reports, special test operational requirements, etc. Briefly describe facility status and system/equipment setup that is needed for the Abnormal Condition Drill. Describe any other parameters such as meteorological conditions needed to support the scenario.
- 7.0 Precautions and Limitations:** List any special safety or hazard considerations as well as TSR for the affected systems or components (identify hazards from facility procedures, Safety Analysis Reports, special test operational requirements, project specific procedures, etc.). Briefly describe the method used to initiate the drill. If an announcement is to be made indicating drills are to commence, write out the announcement. The announcement should include the phrase, "This is a drill."

Attachment 1 – Abnormal Condition Drill Plan Instructions

- 8.0 Initiating Events:** Describe how to initiate the drill (e.g., the event being performed to cause the facility operating personnel to suspect a problem). The drill initiation event should be very specific. Briefly describe facility status and system/equipment setup that is needed for the abnormal condition drill. Describe any other parameters such as meteorological conditions needed to support the scenario. If an announcement is to be made indicating drills are to commence, write out the announcement. The announcement should include the phrase, "This is a drill."
- 9.0 Abnormal Condition Drill Termination:** The Controller/Evaluator should describe the indications that the abnormal condition drill has reached completion. This may be the completion of a specific step in a procedure, the completion of a specific action such as replacing a fuse, or some other indication. Discuss with participants the necessary actions required to restore the facility/process to a desired condition for continued facility operation. Abnormal condition drill Controller(s)/Evaluator(s) should describe the indications that the abnormal condition drill has reached completion.
- A.** State the event(s) that indicate when the drill should be concluded. The facility condition(s) that ensures all required and expected actions have been completed and the facility can continue to operate or be shut down safely should be identified.
 - B.** State the event(s) that would cause an immediate termination of the drill due to a safety problem, procedural deviation, TSR violation, or other problem, and would require immediate actions to place the facility in a safe condition.
- 10.0 Hotwash:** Immediately following the Abnormal Condition Drill, the Abnormal Condition Drill Coordinator should hold a critique to formally conclude the drill. A drill critique is not necessarily a chronology of the events of a drill. It is an analysis of what went right and any shortcomings with facility operating personnel actions, the drill scenario, facility equipment, cues and props, drill evaluators, safety monitors, etc.

Attachment 2 – Abnormal Condition Drill After Action Report Instructions

ABNORMAL CONDITION DRILL AFTER ACTION REPORT INSTRUCTIONS**Cover Sheet Components**

Enter the applicable information on the cover sheet.

Drill Title: A brief name for the Abnormal Condition Drill that was conducted (e.g., radioactive material contamination).

Drill Number: Enter the unique Abnormal Condition Drill number acquired from Emergency Management for development of the Abnormal Condition Drill Plan.

Drill Date: List the month, day, and year the Abnormal Condition Drill was conducted.

Signature Page Components

Abnormal Condition Drill After Action Report Concurrence: Obtain concurrence from the Functional Manager.

Abnormal Condition Drill After Action Report Components

- 1.0 Purpose:** Describe the primary reason or programmatic driver for conducting the abnormal condition drill (e.g., to verify operators can startup the machinery which failed).
- 2.0 Scope: Procedure Title, Number, and Revision:** List the activity/process technical basis document from which the drill criteria and objectives are derived. Define the boundaries of the Abnormal Condition Drill in a short statement describing who, what, where, when, and how. Define the depth of the Drill and associated level of participation. Describe the physical location of the play area where the Drill is being conducted to decrease operational impacts.
- 3.0 Objectives:** Select measurable performance indicators from the facility/project operating procedures. Describe the response expected from all personnel. Give details for any special actions or activities if required. Describe the general sequence of events for the facility and the final conditions. If a specific order of response is required, ensure that the order of response is stated. If the abnormal condition drill scenario is to test reasoning or deductive powers, then give guidelines for the events that should occur (e.g., in checklist form) so that evaluators can accurately assess the abilities of the facility operating personnel. Derive objectives from requirements stated in organizational and/or project specific procedures.

Attachment 2 – Abnormal Condition Drill After Action Report Instructions

- 4.0 Noteworthy Practices:** When an evaluated organization has demonstrated a superior and unique approach, technique, product, tool, etc., document this as a Noteworthy Practice. Noteworthy Practices are actions worthy of being emulated by other DOE/NNSA facilities/sites or activities. Describe the practice in sufficient detail so that interested parties and subsequent reviewers can understand the justification for the designation and can modify the practice to suit their particular condition.
- 5.0 Improvement Items:** During an evaluation, an evaluator may note conditions where, while specific criteria are being met and the performance objective for a particular program element is being achieved, the performance of the evaluated activity/process could be improved or made more efficient. While the evaluator will have discussed the specifics with representatives from the evaluated organization, include these recommendations in the After Action Report in sufficient detail to allow interested parties and subsequent evaluators to understand the condition and justification.
- 6.0 Findings:** If any, describe failed objectives of an Abnormal Condition Drill as determined by those responsible for evaluating the exercise. Failed action/items are reevaluated during a subsequent abnormal condition drill or through a selected functional test within a fixed time period following the exercise. Deficiencies require corrective actions to be implemented.
- 7.0 Corrective Actions:** Evaluations and the resulting findings would be of no benefit to an emergency management program if identified problems were not addressed through corrective actions. The corrective action responding to each finding is developed by the evaluated organization. To ensure that the problems identified will be corrected in an effective and timely manner, the evaluated organization should produce the following:
- Clear statement of the finding
 - Statement of the cause of the identified problem area
 - Details of the actions needed to eliminate the cause
 - Responsibility for corrective action
 - Schedule for completion of corrective action
 - Continuous improvement in the emergency management program results from implementation of corrective actions

Attachment 2 – Abnormal Condition Drill After Action Report Instructions

Lessons Learned: If Lessons Learned are generated, select “yes” and enter the number. A lesson learned may be a “good practice” or innovative approach that is captured and shared to promote repeat application. A lesson learned may also be an adverse practice or experience that is captured and shared to avoid recurrence. The Lessons Learned process is a principal component of emergency management organizations whose culture is committed to continuous improvement. Lessons Learned should be validated through the abnormal condition drill evaluation process to ensure the corrective action was effective in resolving the original issue. Conversely, “good practices” should also be tracked to ensure implementation, as appropriate. Previous lessons learned are reviewed for applicability prior to planning an abnormal condition drill.

ABNORMAL CONDITION DRILL PLAN

Drill Title: _____

Drill Number: _____

Date: _____

Waste Isolation Pilot Plant
Prepared by Nuclear Waste Partnership LLC
Revision Number _____

ABNORMAL CONDITION DRILL PLAN APPROVAL:

Prepared by:

Print Name	Sign	Date
Abnormal Condition Drill Coordinator Nuclear Waste Partnership LLC		

Concurred by:

Print Name	Sign	Date
Project Lead Nuclear Waste Partnership LLC		

Print Name	Sign	Date
Subject Matter Expert, _____ Nuclear Waste Partnership LLC		

Approved by:

Print Name	Sign	Date
Functional Manager Nuclear Waste Partnership LLC		

Drill Title: _____		Drill Number: _____		Date: _____	
1.0 Participant Pre-Drill Brief					
Individual / Group / Team / Section / Function / Designation: (By Name)					
Print Name/Signature				Badge No.	
2.0 Purpose					
3.0 Scope					
This Abnormal Condition Drill Plan is based on the following procedure:					
Procedure Title:					
Procedure Number:				Procedure Rev.:	
4.0 Expected Response Actions (REFER TO APPLICABLE PROCEDURE)					
5.0 Objectives/Evaluation criteria					

Drill Title: _____		Drill Number: _____		Date: _____	
6.0 Initial Conditions					
7.0 Precautions and Limitations					
8.0 Initiating Events					
9.0 Abnormal Condition Drill Termination					
10.0 Hotwash					
<p>A hotwash/critique will be conducted immediately following the drill to provide an opportunity for players/responders to discuss their own perspectives on the activities and events. Participants are expected to be self-critical in an effort to achieve continuous improvements.</p>					

ABNORMAL CONDITION DRILL AFTER ACTION REPORT

Drill Location: _____

Drill Number: _____

Date: _____

Waste Isolation Pilot Plant
Prepared by Nuclear Waste Partnership LLC
Revision Number _____

ABNORMAL CONDITION AFTER ACTION REPORT:

Prepared by:

Print Name	Sign	Date
Abnormal Condition Drill Coordinator Nuclear Waste Partnership LLC		

Print Name	Sign	Date
Functional Manager Nuclear Waste Partnership LLC		

Drill Title: _____ Drill Number: _____ Date: _____	
1.0 PURPOSE	
2.0 SCOPE	
This Abnormal Condition Drill After Action Report is based on the following procedure:	
Procedure Title:	
Procedure Number:	Procedure Rev.:
3.0 OBJECTIVES	
4.0 NOTEWORTHY PRACTICES	
5.0 IMPROVEMENT ITEMS	

Drill Title: _____	Drill Number: _____	Date: _____
6.0 FINDINGS		
<input type="checkbox"/> None	<input type="checkbox"/> Training	<input type="checkbox"/> Procedures
<input type="checkbox"/> Equipment		
<input type="checkbox"/> Other:		
7.0 CORRECTIVE ACTIONS		
Lessons Learned Generated: <input type="checkbox"/> Yes <input type="checkbox"/> No		
If "Yes," Lessons Learned Number:		

ABNORMAL CONDITON DRILL EVALUATION CRITERIA

Facility Name: _____

Drill Number: _____ **Drill Date:** _____

Evaluator(s)	Badge No.	Name / Signature	Organization
Participants	Badge No.	Name / Signature	Organization

Note: Evaluation criteria are based on the objectives described in the applicable Drill Plan.

Objective No.	Met	Not Met	Performance Evaluation	Evaluator Notes
•	<input type="checkbox"/>	<input type="checkbox"/>		
•	<input type="checkbox"/>	<input type="checkbox"/>		
•	<input type="checkbox"/>	<input type="checkbox"/>		
•	<input type="checkbox"/>	<input type="checkbox"/>		
•	<input type="checkbox"/>	<input type="checkbox"/>		

Working Copy

Facility

Name: _____

Drill Number: _____

Drill Date: _____

Objective No.	Met	Not Met	Performance Evaluation	Evaluator Notes
•	<input type="checkbox"/>	<input type="checkbox"/>		
•	<input type="checkbox"/>	<input type="checkbox"/>		
•	<input type="checkbox"/>	<input type="checkbox"/>		
•	<input type="checkbox"/>	<input type="checkbox"/>		
•	<input type="checkbox"/>	<input type="checkbox"/>		

Abnormal Drill Results

☐ Passed

☐ Failed

☐ Remediation

Additional Comments:

ABNORMAL CONDITION DRILL PROGRAM

ADMINISTRATIVE DRILL EVALUATION

Drill Number:		Drill Date:	
Name (Performer):		Name (Evaluator):	
Complete:	<input type="checkbox"/> Immediate	<input type="checkbox"/> During Shift	<input type="checkbox"/> Other:
Functional Area(s):			
Objective(s):			
Scenario and Conditions			
Add Summary (narrative) <ul style="list-style-type: none"> Support Bullets Support Bullets 			
Immediate Actions			
Applicable Procedure(s):			
Applicable Procedure(s):			
1.			
2.			
3.			
4.			
5.			
6.			
Subsequent Actions			
1.			
2.			
3.			
4.			
5.			
6.			

SIGNATURE (Performer)		
Performed By:	Signature:	Date

Please return completed and signed form to the Abnormal Condition Drill Coordinator or designee upon completion.

The below section is completed by the assigned/designated Evaluator

Performance Evaluation		
<input type="checkbox"/> Finding/Issue	<input type="checkbox"/> Improvement Item	<input type="checkbox"/> Noteworthy Practice
Description:		
Recommended Corrective Actions:		

Performance Evaluation		
<input type="checkbox"/> Finding/Issue	<input type="checkbox"/> Improvement Item	<input type="checkbox"/> Noteworthy Practice
Description:		
Recommended Corrective Actions:		

SIGNATURE (Evaluator)		
Evaluated By:	Signature:	Date

ATTACHMENT 31
WP 12-ER4922 INCIDENT COMMAND SYSTEM
15 PAGES

WP 12-ER4922

Revision 2

Incident Command System

Management Control Procedure

EFFECTIVE DATE: 01/11/16

David Stuhan
APPROVED FOR USE

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CHANGE HISTORY SUMMARY

REVISION NUMBER	DATE ISSUED	DESCRIPTION OF CHANGES
0	11/06/14	<ul style="list-style-type: none">• New document.
1	09/15/15	<ul style="list-style-type: none">• Updated position terminology.• Added position checklists.• Cleaned up precautions and limitations.• Removed notification sections already covered in 12-ER3907.
2	01/11/16	<ul style="list-style-type: none">• Added step in section 2.0 for authorizing reentry for over 25 rem exposure.• Added section 6.0 for Emergency Public Information including Public Information Officer.

INTRODUCTION

This procedure provides tactical guidelines for the Waste Isolation Pilot Plant (WIPP) Fire Department (FD) and Protective Force personnel who implement the Incident Command System (ICS). This procedure also defines roles and responsibilities for the management and direction of emergency incident operations, providing for the safety and health of personnel and other persons involved in those activities.

The WIPP FD Firefighters fulfill the role of the Fire Brigade, the First Line Initial Response Team, and the Emergency Services Technician/Fire Protection Technician as described in the New Mexico Environment Department NM4890139088-TSDF, *WIPP Hazardous Waste Facility Permit (HWFP)*. The Emergency Response Team (ERT) continues to fulfill the responsibilities designated for the ERT in the HWFP.

Guidelines in this procedure should be used for determining an ICS on the scene, which is designed to offer a practical framework for field operations, effectively integrating the efforts of all members, officers, companies, and other assisting groups, to mitigate emergencies at the WIPP and surrounding areas that fall under the mutual aid agreements.

The positions discussed in this procedure will be established based upon the needs of the incident or event. Generally, small events require small incident management systems; large or complex events require a more robust incident management system. The user should be the system necessary to protect life, stabilize the incident or event, and protect property.

The following groups/positions are part of the ICS structure and are responsible for activities identified in this procedure:

- First-Arriving FD Officer or Security Police Officer
- Incident Commander (IC)
- Safety Officer
- Liaison Officer
- Planning Section Chief
- Logistics Section Chief
- Finance/Administration Section Chief
- Operations Section Chief
- Staging Area Manager
- Rehabilitation Manager
- Branch Director
- Division Supervisor
- Group Supervisor
- FD Personnel
- Protective Force Personnel

Performance of this procedure generates the following record(s), as applicable. Any records generated are handled in accordance with departmental Records Inventory and Disposition Schedules.

- EA12ER4922-1-0, *Incident Commander Checklist*
- EA12ER4922-2-0, *Liaison Officer Checklist*
- EA12ER4922-3-0, *Operations Section Chief Checklist*
- EA12ER4922-4-0, *Rehabilitation Manager Checklist*
- EA12ER4922-5-0, *Rehabilitation Tracking Form*
- EA12ER4922-6-0, *Safety Officer Checklist*
- EA12ER4922-7-0, *Staging Area Manager Checklist*
- EA12ER4922-8-0, *Incident Command System Forms*

REFERENCES		
DOCUMENT NUMBER AND TITLE	BASELINE DOCUMENT	REFERENCED DOCUMENT
DOE Order 151.1C, <i>Comprehensive Emergency Management System</i>	✓	
Homeland Security Presidential Directive 5	✓	
National Incident Management System (NIMS): Five Year Training Plan		✓
NFPA 1561, <i>Standard on Emergency Services Incident Management System and Command Safety</i>	✓	
NFPA 1500, <i>Standard on Fire Department Occupational Safety and Health Program</i>	✓	
Hazardous Waste Facility Permit, EPA Identification Number NM4890139088-TSDF	✓	✓
WP 12-9, <i>WIPP Emergency Management Plan</i>	✓	
EA12ER4922-1-0, <i>Incident Commander Checklist</i>		✓
EA12ER4922-2-0, <i>Liaison Officer Checklist</i>		✓
EA12ER4922-3-0, <i>Operations Section Chief Checklist</i>		✓
EA12ER4922-4-0, <i>Rehabilitation Manager Checklist</i>		✓
EA12ER4922-5-0, <i>Rehabilitation Tracking Form</i>		✓
EA12ER4922-6-0, <i>Safety Officer Checklist</i>		✓
EA12ER4922-7-0, <i>Staging Area Manager Checklist</i>		✓
EA12ER4922-8-0, <i>Incident Command System Forms</i>		✓

PERFORMANCE**1.0 ESTABLISHING COMMAND**

NOTE

During a security emergency, the position of Security Incident Commander (IC) is normally filled by the Nuclear Waste Partnership (NWP) Protective Force Lieutenant, who will designate a location of the Incident Command Post (ICP) and directs response activities at the incident scene.

- 1.1 First Arriving FD or Security Police Officer, perform the following actions:
 - 1.1.1 Establish command of the incident.
 - 1.1.2 Serve as the IC.
 - 1.1.3 Remain in command until transferred or relieved.
- 1.2 IC, perform the following actions:
 - 1.2.1 Name and announce establishment of command.
 - 1.2.2 Establish an effective operating position (establish an uphill, upwind, command post).
 - 1.2.3 Conduct size up (evaluate the situation).
 - 1.2.4 Notify the Facility Shift Manager (FSM) of changing incident conditions.
 - 1.2.5 Identify the overall strategy, select tactics, develop an Incident Action Plan (IAP), and assign resources consistent with the IAP.
 - 1.2.6 Consider documenting the IAP on status boards, Incident Command System forms, etc.
 - 1.2.7 Develop an effective incident management organization according to requirements of the incident.
 - 1.2.8 Maintain an orderly transfer of command to subsequent arriving officers.

2.0 COMMAND ROLE

2.1 IC, perform the following actions:

- 2.1.1 Ensure a strong, direct, and visible command is established from the onset by the first on-scene unit.
- 2.1.2 Establish an effective management organization among individuals operating within the ICS.
- 2.1.3 Ensure a system is in place to process information, support incident management, planning, and decision making.
- 2.1.4 Serve as the focal point for all on-scene determinations at a strategic level.
- 2.1.5 Determine if the event requires additional resources and/or mutual aid agencies.
- 2.1.6 Establish priorities and assign resources to meet the demands of the incident by:
 - Determining strategy
 - Establishing objectives
 - Setting priorities
 - Developing an IAP
 - Supervising personnel and maintaining span of control
 - Obtaining and/or assigning resources
 - Predicting the outcome and planning for future events\
 - Assigning objectives to tactical level units
- 2.1.7 Determine if operations will be offensive or defensive:
 - [A] Develop an IAP using the strategic priorities of life safety, incident stabilization, and property conservation for incident management.
 - [B] Accordingly, direct scene mitigation efforts.
- 2.1.8 As they are established, communicate with on scene responders, managers, or sections.
- 2.1.9 Establish an incident command post.

2.1.10 If urgent lifesaving reentry is required, AND responders/emergency workers may receive dose limits greater than 25 rem to the whole body, then the IC approves the reentry after consultation from Radiological Control or the Emergency Operations Center (EOC) Safety-Health Physics (radiological/criticality incidents) if the EOC is operational and with concurrence from the EOC Crisis Manager, if available.

[A] For lifesaving reentry, the EOC will be briefed before or after entry/reentry is made, based on time urgency for life safety.

[B] For non-life-saving reentry, the EOC Crisis Manager will be briefed on the reentry plan prior to entering the hazard area.

2.1.11 As the incident is controlled, release units, downgrade operations, and/or terminate the incident.

2.2 IC, make use of the following items to improve or facilitate the IC function:

- Green strobe light on command vehicle
- Command vests
- Incident Command System forms and checklists to record and track on-scene resources

2.3 IC, if Incident Command System forms and/or checklists are used, attach the forms/checklists to the incident report for record keeping purposes.

2.4 IC, identify incident site or the primary structure at structural fire incidents by geographic locations to easily identify the following specific areas:

- Side A: the common entrance of the structure. If no common (main) entrance is obvious, designate Side A as the side of the building facing the main street.
- Side B: the exterior part of the structure directly to the LEFT of Side A and OPPOSITE Side D.
- Side C: the exterior part of the structure directly to the LEFT of Side B and OPPOSITE of Side A.
- Side D: the exterior part of the structure directly to the LEFT of Side C and OPPOSITE of Side B.

3.0 TRANSFER AND TERMINATION OF COMMAND

NOTE

Transfer of command includes:

- Situation status
 - Resources committed and/or responding to the incident
 - Explanation of current ICS structure and assignments
 - Assessment of the current effect of tactical operations
 - Review of the IAP, including strategic and tactical goals and objectives
 - Notification to responders and Central Monitoring Room (CMR)/Facility Shift Manager (FSM) regarding change in command
-

3.1 IC, perform the following actions:

3.1.1 Transfer command (passed or assumed) to a later arriving officer.

- Transfer of command should occur face-to-face, if possible, to ensure effective communication and feedback.
- Transfer of command may occur by radio, if a face-to-face encounter is not possible.

3.1.2 Terminate command when the incident is controlled and no further action is being taken.

3.1.3 For Operational Emergencies, recommend terminating command to the CMR/FSM or the Emergency Operations Center Crisis Manager.

3.1.4 For Non-Operational Emergencies, terminate command by notifying the CMR/FSM "command is terminated" and advise all crews of command termination.

4.0 COMMAND SECTION, FUNCTIONS, AND ROLES

NOTE

Complex emergency situations may exceed the capability of one officer to effectively manage the entire operation. In these cases, it may be necessary to divide the responsibilities of an incident among additional operational or functional areas. Delegating these responsibilities through the use of branches, divisions, and groups reduces the span of control of the IC into more manageable units, allowing the IC to communicate with assigned principal individuals rather than individual crews.

NOTE

The following are guidelines for common terminology and functions of the National Incident Management System (NIMS). Each incident is different and may require the use of a small part of a NIMS or the entire concept. This procedure provides an array of major functions that may be selectively implemented according to the needs of the situation.

4.1 IC, perform the following actions:

4.1.1 Build a command structure matching the organizational needs of the incident, achieving the strategic goals and tactical objectives.

4.1.2 Assess incident priorities in the following order:

- Life safety issues for firefighters, other emergency workers, occupants, and bystanders.
- Incident stabilization strategy minimizing impact to WIPP and the surrounding area.
- Property conservation to achieve the above stated goals and objectives at an incident while minimizing property damage or loss.

4.2 Safety Officer, perform the following actions:

4.2.1 Report to all incidents involving a high risk to personnel.

- 4.2.2 Be established at all incidents involving high risk to personnel such as:
- Working structure fires
 - Hazardous materials operations
 - Technical rescue, including confined spaces
 - Extrication events (vehicle and/or machinery)
 - Live fire training evolutions
- 4.2.3 Report to the IC.
- 4.2.4 Use the Safety Officer Checklist for guidance to address safety hazards at the incident. At the end of the event, provide the completed checklist to the IC.
- 4.2.5 Monitor and assess hazardous and/or unsafe situations or practices and develop responder safety measures.
- 4.2.6 Exercise emergency authority to stop or prevent unsafe operations when immediate action is necessary.
- 4.2.7 Notify the IC when emergency authority is used to stop or prevent unsafe operations.
- 4.2.8 Ensure adequate rehabilitation provisions are available and the Rehabilitation Manager provides appropriate medical screenings before returning personnel to incident operations.
- 4.2.9 Responsible for functions related to personnel and on-scene safety.
- 4.3 Liaison Officer, act as a point of contact for representatives from other assisting and cooperating departments and agencies (Facility Operations, off-site mutual aid, etc.).
- 4.3.1 Use the Liaison Officer Checklist to identify liaison actions for the incident. At the end of the event, provide the completed checklist to the IC.
- 4.4 Planning Section Chief, collect, evaluate, and disseminate incident information and status of resources.
- 4.5 Logistics Section Chief, provide facilities, services, and materials to support units assigned to the incident.

- 4.6 Finance/Administration Section Chief, perform the following actions:
 - 4.6.1 Take responsibility for the financial elements of the incident.
 - 4.6.2 Track response financial aspects of the incident.
 - 4.6.3 Provide the IC with financial information (e.g., cost analysis of the operation), as requested.
- 4.7 Operations Section Chief, perform the following actions:
 - 4.7.1 Direct the preparation of the operations plan and suggest changes to the overall incident command.
 - 4.7.2 Use the Operations Section Chief Checklist to identify operations-related actions for the incident. At the end of the incident, provide completed checklist to the IC.
 - 4.7.3 Supervise tactical operations applicable to the IAP.
 - 4.7.4 Supervise and assign organizational elements according to the IAP and direct and execute those elements.
 - 4.7.5 Direct tactical operations, request/release resources, and suggest changes to the incident strategy.
 - 4.7.6 Assign resources to tactical level areas based on tactical objectives and priorities.
 - 4.7.7 Determine needs and request additional resources.
 - 4.7.8 Request activation of additional Branches/Divisions/Groups, as necessary.
 - 4.7.9 Provide tactical objectives for Branches/Divisions/Groups.
 - 4.7.10 Establish and control staging and air operations (landing zones, etc.) when necessary.
- 4.8 Staging Area Manager, perform the following actions:
 - 4.8.1 Report to the Operations Section Chief or Incident Commander.
 - 4.8.2 Use the Staging Area Manager Checklist to assist with identifying and managing the Staging Area. At the end of the incident, provide completed checklist to the IC.

- 4.9 Rehabilitation Manager, perform the following actions:
 - 4.9.1 Report to the IC or designee (IC or Operations Section Chief)
 - 4.9.2 Use the Rehabilitation Manager Checklist to identify needs, concerns, and sign in/out requirements. At the end of the incident, return completed checklist to the IC.
 - 4.9.3 Manage all activities with the rehabilitation area.
 - 4.9.4 Track activities and status on the Rehabilitation Tracking Form.
 - 4.9.5 Provide appropriate medical screenings before returning personnel to incident operations.
- 4.10 Branch Director, perform the following actions:
 - 4.10.1 Report to the Operations Section Chief.
 - 4.10.2 Assign resources within the Branch and report on conditions.
 - 4.10.3 Implement assigned portion of the IAP.
 - 4.10.4 Maintain accountability for all assigned personnel.
 - 4.10.5 Report progress and status of resources to Operations Section Chief.
- 4.11 Division/Group Supervisor, perform the following actions:
 - 4.11.1 Report to the Operations Section Chief or Branch Director.
 - 4.11.2 Implement assigned portions of the IAP.
 - 4.11.3 Assign resources within the division.
 - 4.11.4 Report progress and status of resources to Operations Section Chief or Branch Manager.

5.0 BRANCH, DIVISION, AND GROUP RESPONSIBILITIES

NOTE

Branch Director/Division or Group Supervisor instructions provide an array of major functions, which may be selectively implemented according to the needs of a particular situation. This places responsibility for the details and execution of each particular function on a Branch Director/Division or Group Supervisor. The primary function of the officer working as a manager is to direct the operations of the companies assigned in their entity. Officers will advise their Branch Director/Division or Group Supervisor of their progress and requests. Requests will then be given to the IC by the Branch Director/Division or Group Supervisor. Examples of geographical assignments are: Branches; Divisions; Sides A, B, C, and D; Roof; Interior; Exposure; and Floor; etc. Examples of functional groups are: Branches, Extrication, Ventilation, Fire Attack, and EMS.

5.1 IC, when establishing a Branch/Division/Group, assign each manager, supervisor, or leader the following:

- Tactical objectives
- Radio channel (if necessary)
- Identity of assigned resources

5.2 Branch/Division/Group perform the following:

5.2.1 Maintain contact with the IC or designee.

5.2.2 Work within the strategic and tactical goals in the IAP.

5.2.3 Terminate freelancing activities.

5.2.4 Maintain accountability for all assigned personnel.

5.2.5 Ensure operations are safely conducted.

5.2.6 Control and direct work processes.

5.2.7 Request additional resources through the chain of command.

5.2.8 Re-allocate resources within the Division/Group.

5.2.9 Request rotation of personnel and crews, when indicated, by the physical condition of personnel in the Division/Group.

5.2.10 Immediately advise the IC of significant changes, particularly those involving the ability or inability to complete an objective, hazardous condition, accident, structural collapse, etc.

5.3 FD and Protective Force Personnel, perform the following actions:

- 5.3.1 Communicate changing conditions or hazardous situations through the chain of command to the IC.
- 5.3.2 Maintain communication discipline at an incident to achieve a safe and effective operation by honoring the chain of command and minimizing non-essential communication.
- 5.3.3 Adhere to all applicable organization instructions to ensure standardized operations.
- 5.3.4 Report all deviations to the IC, using the chain of command, along with the reason for the deviation.
- 5.3.5 Assume responsibility for the safety of themselves and the work group.

6.0 EMERGENCY PUBLIC INFORMATION RESPONSIBILITIES

- 6.1 Public Affairs activities including Emergency Public Information are performed by the Communications Organization, unless the Emergency Operations Center (EOC) has been activated, in which the activities would be handled by the EOC Public Affairs Officer.
- 6.2 If a Public Information Officer is assigned to the ICP by an external agency, then the Public Information Officer will collaborate with the Communications Organization or the EOC Public Affairs Officer, as applicable.
- 6.3 If the news media or public make inquiries regarding the incident, request support from the Communications Organization or the EOC Public Affairs Officer, as applicable.

ATTACHMENT 32
WP 12-ER4923 EMERGENCY OPERATIONS CENTER PERSONNEL
SELECTION AND QUALIFICATION

11 PAGES

WP 12-ER4923

Revision 0

Emergency Operations Center Personnel Selection and Qualification

Management Control Procedure

EFFECTIVE DATE: 11/12/14

David Stuhan
APPROVED FOR USE

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CHANGE HISTORY SUMMARY

REVISION NUMBER	DATE ISSUED	DESCRIPTION OF CHANGES
0	11/12/14	<ul style="list-style-type: none">• New document.

INTRODUCTION ^{1, 2, 3}

The selection and appointment of personnel as Emergency Operations Center (EOC) Staff members is covered in this procedure, along with EOC position training and authorization programs, maintaining proficiency of EOC personnel, and adding and removing EOC Staff to and from the EOC Watchbill. This procedure also covers the designation of Emergency Management (EM) Evaluators.

This procedure applies to the establishment of EOC Staff and candidates for the EOC. It also applies to the Emergency Response Organization (ERO) Training Officer, EM Evaluator, and the EOC Watchbill Coordinator.

The following job positions are responsible for activities identified in this procedure:

- EOC Candidates
- EOC Staff
- EM Manager
- ERO Training Officer
- EOC Watchbill Coordinator

This procedure follows the requirements identified in U.S. Department of Energy (DOE) Order DOE O151.1C, *Comprehensive Emergency Management System*, WP 12-9, *WIPP Emergency Plan*, and WP 14-TR.01, *WIPP Training Program*.

Performance of this procedure generates the following record(s), as applicable. Any records generated are handled in accordance with departmental Records Inventory and Disposition Schedules (RIDS).

- Completed EA12ER4923-1-0, *EOC Staff Contact Information Form*
- Authorization cards
- Authorized EOC Staff List

REFERENCES			
DOCUMENT NUMBER AND TITLE	BASELINE DOCUMENT	REFERENCED DOCUMENT	KEY STEP
DOE O 151.1C, <i>Comprehensive Emergency Management System</i>	✓	✓	1
WP 12-9, <i>WIPP Emergency Plan</i>	✓	✓	2
WP 14-TR.01, <i>WIPP Training Program</i>	✓	✓	3
EA12ER4923-1-0, <i>Emergency Operations Center Staff Contact Information Form</i>		✓	

PERFORMANCE**1.0 DESIGNATION OF EOC STAFF MEMBERS**

NOTE

Each EOC position will normally be filled with a minimum of two and a maximum of four staff members. Exceptions must be approved by the EM Manager.

NOTE

Personnel designated for the Crisis Manager and Deputy Crisis Manager positions are qualified to the same level and may be assigned to the EOC watchbill interchangeably. For this position there should be between four and eight staff members.

- 1.1 Immediate Supervisor, identify personnel as candidates for EOC positions and provide resumes and/or related experience via email to the Department Manager, with a copy to the EM Manager.
 - 1.1.1 Department Manager, approve candidates to hold EOC positions via email to the EM Manager.
- 1.2 EM Manager, compare the experience and capabilities of each candidate to the requirements and responsibilities of the position.
 - 1.2.1 Interview candidates, review resumes, examine current or past job experience and past and present Emergency Management experience to evaluate potential candidate's probability of success in the training program and the EOC position.
 - 1.2.2 Notify the ERO Training Officer of candidates selected for the EOC positions that will need to complete the required EOC training and provide resumes and/or related experience.
- 1.3 ERO Training Officer, assign the appropriate authorization card to each individual.
 - 1.3.1 Route the authorization card for signature to the Department Manager as documentation of the approval of the candidates' selection for the EOC position.
- 1.4 Department Manager, sign the authorization card designating the employee to complete the required training for the EOC position and to begin fulfilling the duties of the EOC position upon successfully completing the program.
- 1.5 EM Manager, sign the authorization card to indicate agreement with the selection of the candidate for the designated EOC position.

- 1.6 ERO Training Officer, sign the authorization card to acknowledge the candidate has been accepted into the program.

- 1.6.1 Retain the resume/related experience in the candidate's ERO training folder.

2.0 INITIAL TRAINING, VALIDATION, AND AUTHORIZATION

- 2.1 ERO Training Officer, provide each candidate with a position specific program guide which will provide the training and evaluation requirements for the related EOC position and EA12ER4923-1-0, *Emergency Operations Center Staff Contact Information Form*.

- 2.1.1 EOC Candidate, complete EA12ER4923-1-0 Section A and return to the ERO Training Officer via e-mail.

- 2.2 EOC Candidate, complete the required reading and online National Incident Management System (NIMS) courses listed in the program guide.

- 2.2.1 EOC Candidate, print out completion certificates from NIMS/ICS (Incident Command System) courses and provide them to the ERO Training Officer,

- 2.2.2 ERO Training Officer, forward completion certificates to the Training Department for inclusion in the individual training records.

NOTE

EOC Candidates will receive WIPP ERO and EOC information during the ERO Overview class and will participate in hands-on position specific training during the EOC Workshop.

- 2.3 EOC Candidate, sign up or arrange to attend an available EM-100, *ERO Overview*, training course and associated EOC Workshop by contacting the ERO Training Officer.

NOTE

Only designated EM evaluators can sign for satisfactory completion of knowledge and performance items on the EOC position specific authorization signature cards.

- 2.4 EM Manager, designate EM Evaluators in writing.

- 2.5 EM Evaluator, sign for completion of an item when the candidate demonstrates they have the required knowledge or can independently perform the required performance items.
 - 2.5.1 ERO Training Officer, validate that all training and evaluation requirements on the authorization card are complete.
 - 2.5.2 EM Manager, sign to authorize the candidate to fill the associated EOC position.
- 2.6 ERO Training Officer, perform the following:
 - 2.6.1 Verify the information in EA12ER4923-1-0 Section A is complete.
 - 2.6.2 Complete EA12ER4923-1-0 Section B.
 - 2.6.3 Provide the completed EA12ER4923-1-0 to the EOC Watchbill Coordinator.
 - 2.6.4 Request access for EOC Candidate to [\\hondo\EOC](#) from Tech Support.

NOTE

The list of Authorized EOC Staff provides documentation that only trained and qualified personnel are assigned to the EOC watchbill. The list should be controlled, and a revision change should be made when changes are made to the list. Old revisions should be retained.

- 2.6.5 ERO Training Officer, upon completion of the applicable Authorization Signature Card, add the individual to the Authorized EOC Staff list for the applicable position and generate a revised Authorized EOC Staff list.
- 2.6.6 ERO Training Officer, sign and date each revision of the Authorized EOC Staff list.
- 2.6.7 ERO Training Officer, forward the updated Authorized EOC Staff list to the EOC Watchbill Coordinator.
- 2.6.8 ERO Training Officer, forward completed authorization cards to the Training Department for entry into training records.

3.0 WATCHBILL ADMINISTRATION

NOTE

EOC Staff are required to serve on a watchbill. This ensures that personnel are available at all times (24 hours a day, 7 days a week) to assume the EOC positions, as needed. EOC Watchbill position assignments will be for one week at a time.

- 3.1 EOC Watchbill Coordinator, create each weekly EOC Watchbill using people listed on the latest revision of the list of Authorized EOC Staff and a standard rotation with each person assigned approximately once every four weeks, depending on the number of EOC Staff authorized to fill each position.
 - 3.1.1 EOC Watchbill Coordinator, e-mail the weekly watchbill to the on-call EOC Staff and Facility Operations personnel by 0700 on each Monday morning.
 - 3.1.2 EOC Watchbill Coordinator, provide the watchbill showing the expected assignments for the entire month to Authorized EOC Staff approximately one month in advance.
-

NOTE

The EOC Watchbill weekly assignments run from 0700 hours Monday to 0700 hours the following Monday. If a holiday falls on a Monday, then the watchbill assignments are extended an extra day and the next person assumes the responsibilities at 0700 hours on Tuesday.

- 3.2 EOC Staff, **IF** unable to serve on the week designated on the watchbill, **THEN** arrange for another EOC Staff member in the same EOC position from the list of Authorized EOC Staff to cover the watchbill that week.
 - 3.2.1 EOC Staff, notify the EOC Watchbill Coordinator, Central Monitoring Room Operator (CMRO), and Facility Shift Manager with the name of the replacement EOC member and the duration of coverage.
 - 3.2.2 **IF** the change occurs outside normal business hours, **THEN** notify the CMRO and follow up with an email to the EOC Watchbill Coordinator as soon as possible.
- 3.3 EOC Staff, immediately notify the EOC Watchbill Coordinator of any changes to contact information so the notification system can be updated.
 - 3.3.1 Submit an updated EOC Staff Contact Information Form to the ERO Training Officer when time permits.

4.0 MAINTAINING EOC POSITION PROFICIENCY

- 4.1 EOC Staff, participate in at least one drill, exercise, or actual event in the EOC position annually.
- 4.2 EOC Staff, complete all designated required reading or refresher training as required during a two-year period.
- 4.3 ERO Training Officer, track completion of continuing training using position specific Continuing Training Completion Records and
 - 4.3.1 ERO Training Officer, notify EOC Staff of drill or other training requirements.
- 4.4 EM Manager, **IF** an EOC Staff member fails to maintain training or meet proficiency requirements,
THEN revoke the authorization of an EOC Staff member and ensure their removal from the list of Authorized EOC Staff.
 - 4.4.1 ERO Training Officer, **IF** notified by the EM Manager to remove an EOC Staff member from the list,
THEN revise the list of Authorized EOC Staff with the required changes.
 - 4.4.2 ERO Training Officer, change the revision number and date for the list of Authorized EOC staff and sign the revision indicating it is complete.

NOTE

The revised Authorized EOC Staff list will be effective immediately.

- 4.4.3 ERO Training Officer, send the revised Authorized EOC Staff list to the EOC Watchbill Coordinator as soon as possible.
- 4.4.4 ERO Training Officer, retain copies of the Authorized EOC Staff lists.

NOTE

The availability of EOC Staff members should be considered when revising watchbill rotations.

- 4.4.5 EOC Watchbill Coordinator, review and revise all current and planned revisions of the EOC Watchbill to ensure only authorized personnel are listed.
- 4.4.6 EOC Watchbill Coordinator, send revised watchbill showing to the Authorized EOC Staff and Facility Operations.

- 4.5 EOC Staff, **IF** removed from the Authorized EOC Staff list,
THEN complete the missing requirements.
 - 4.5.1 EOC Staff, inform the ERO Training Officer when the requirements have been completed.
 - 4.5.2 ERO Training Officer, verify completion of requirements.
 - 4.5.3 ERO Training Officer, request authorization from the EM Manager to reinstate the EOC Staff member.
- 4.6 ERO Training Officer, **IF** notified by the EM Manager to reinstate an EOC Staff member,
THEN revise the list of Authorized EOC Staff with the required changes.
 - 4.6.1 ERO Training Officer, change the revision number and date for the list of Authorized EOC staff and sign the revision indicating it is complete.
 - 4.6.2 ERO Training Officer, send the revised Authorized EOC Staff list to the EOC Watchbill Coordinator as soon as possible.
 - 4.6.3 ERO Training Officer, retain copies of the Authorized EOC Staff lists.
 - 4.6.4 EOC Watchbill Coordinator, review and revise all current and planned revisions of the EOC Watchbill to ensure all authorized personnel are listed.

Emergency Operations Center Staff Contact Information Form

This form is to be used to add or remove personnel from the Emergency Operations Center (EOC) Watchbill.

EOC Staff Member: Complete the contact information in Part A and submit the form to the Emergency Response Organization (ERO) Training Officer.

ERO Training Officer	Fax	Mail Stop	E-mail
Art Chavez	575-234-8649	452-07	Art.Chavez@wipp.ws

A. Contact Information: Include AREA CODE for all numbers.

Today's Date:	Requested Activation Date:
Name:	Company:
Organization:	E-mail Address:
Work Phone:	Pager:
Home Phone:	Cellular:
Additional Contact Numbers:	

EOC Training Officer: Complete the information below, sign, obtain Emergency Management Manager signature, and submit the completed form to the EOC Watchbill Coordinator.

EOC Watchbill Coordinator	Mail Stop	E-mail
Gay Pomroy	953-01	Gay.Pomroy@wipp.ws

B. EOC Watchbill Notifications:

EOC Authorized Staff List <input type="checkbox"/> Add <input type="checkbox"/> Remove	Access to \\hondo\EOC <input type="checkbox"/> Add <input type="checkbox"/> Remove
EOC Staff Position: _____	
Qualification Status Verified by: _____	Date: _____
ERO Training Officer	
Comments: _____ _____	
Approved by: _____	Date: _____
Emergency Management Manager	
Comments: _____ _____	

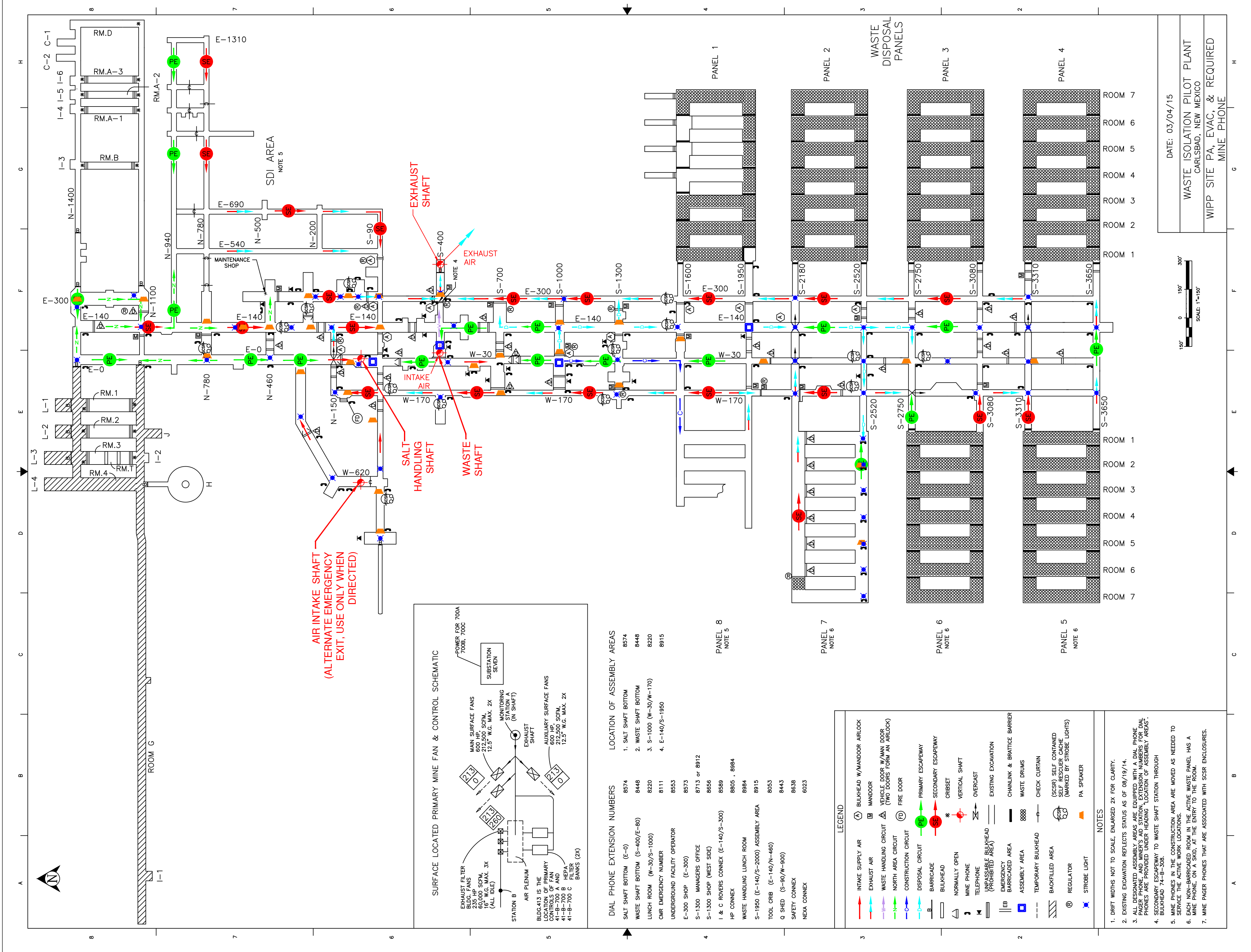
EOC Watchbill Coordinator: Add or remove the EOC Staff member to or from the EOC Watchbill.

C. EOC Watchbill Coordinator:

Action completed by: _____	Date: _____
EOC Watchbill Coordinator	

ATTACHMENT 33
MARCH 4, 2015 MAP OF THE LOCATION OF PERMIT REQUIRED
EQUIPMENT

1 PAGE



ATTACHMENT 34
AUXILIARY WAREHOUSE FAP BROKEN PULL STATION HAND
SWITCH AR CLOSURE DOCUMENTATION

2 PAGES

CHAMPS Minor Maintenance Cover Sheet

24 5/8

Work Order: 1313156

Method: Minor Maintenance

State: 10 - Created

Description: 481HSE3002 REPAIR/ REPLACE HANDSWITCH

Equipment I.D.: 481-HS-E3-002

Room: WAREHOUSE ANNEX

Equipment Name: HAND SWITCH

Function Class: BoP

System: FP03

Management Level: ML-3

Location: 481

Dept: FACOP

Priority: 3B


Planner: GRIFFIN, JIMMY

Assign to: GRIFFIN, JIMMY

Labor Account: W126030301

Parent: 481-FP-E3-001

Planner/Date: [REDACTED] 12-3-13	
COM Release/Date: [REDACTED] 050714	WGM Release/Date: [REDACTED] 051414
Work Authorized By: [REDACTED]	
Signature/Date: [REDACTED] 050714	
Work Area Inspection Completed/Date: [REDACTED] 5/14/14	Task Completed By: [REDACTED]
Worker Date: [REDACTED] 5/14/14	Worker/Date: [REDACTED] 5.16.14
FWM Work Completed/Date: [REDACTED] 052014	
COM Work Completed/Date: [REDACTED] 5/28/14	
Replaced handswitch Retest sat	
The activities in this WCD will not adversely affect the FFB Ventilation	
COM, If canceled, Sign/Date: N/A	Work Control/Date: [REDACTED] 5/23/14 System. [REDACTED] 5/2/14



*Work Order Step
Review*

CriteriaResults - htmlResults - Grid

Work Order Step Review

Total Number of Records Found: 1

Reset Grid Width

Drag a column header and drop it here to group by that column

WO Id	WOS Asset Id	WO Name	WOS Completed Date	Asset Description	WOS Description	Completion Remarks
1313156	481-HS-E3-002	481HSE3002 REPAIR/ REPLACE HANDSWITCH	05/16/2014	HAND SWITCH	481HSE3002 REPAIR/ REPLACE HANDSWITCH	Replaced handswitch/Retest SAT

ATTACHMENT 35
33 EMERGENCY LIGHTS AR CLOSURE DOCUMENTATION
2 PAGES

01/26/2015

CHAMPS Type 2 Cover Sheet

1313990

Work Order: 1313990

WO Class: CM - Corrective
Maintenance

Priority: 3B

Description: ED16 REPAIR/REPLACE EMERGENCY LIGHTING - REPETITIVE WCD VALID UNTIL 6/30/2015 GE:

Criticality:

Equipment I.D.: ED16

Equipment Name: SYSTEM WALKDOWN OF EMERGENCY
LIGHTING

Function Class: BoP

Location: 240

Dept: FACOP

Planner: FLORA, JIM

Labor Account: 126030301W

System: ED16

Room:


PM ID:

Management Level: ML-4

Parent:

COPY

INCIDENT ENERGY <i>N/A</i>	
COM Lockout/Tagout Y N No. _____ (if required) [] PLD LO/TO [X] <i>N/A</i>	
COM Release/Date: <i>[Redacted] 1/26/15</i>	Suspended? Yes / No If yes, see Suspension Sheet
WGM Release/Date: <i>[Redacted] 1-26-15</i>	Work Area Inspection Completed/Date: <i>[Redacted] 1-31-15</i>
Task Completed/Worker/Date	COM Retest Completed/Date:
FWS Work Completed/Date	COM Work Acceptance/Date:
Comments/Overview of Work Performed:	
Work Control/Date:	



*Work Order Step
Review*

CriteriaResults - htmlResults - Grid

Work Order Step Review

Total Number of Records Found: 1

Reset Grid Width

Drag a column header and drop it here to group by that column

WO Id	WOS Asset Id	WO Name	WOS Completed Date	Asset Description	WOS Description	Completion Remarks
1313990	ED16	ED16 REPAIR/REPLACE EMERGENCY LIGHTING - REPETITIVE WCD VALID UNTIL 6/30/2015 Suspended-Need futher engineering evaluation.		SYSTEM WALKDOWN OF EMERGENCY LIGHTING	ED16 REPAIR/REPLACE EMERGENCY LIGHTING Suspended-Need futher engineering evaluation.	Suspended for further Engineering Evaluation on the Type of lights being used, due to repetitive failure of the test switch. And to resolve the issue with two different Type of lights being stocked in the Warehouse that are identical in appearance, but have different test procedures, which is leading to lights being failed during the testing process. JAD 4/30/15

ATTACHMENT 36a
CLASS 1 PMN INCORPORATING INTERIM VENTILATION SYSTEM
CHANGES INTO THE PERMIT

24 PAGES



Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221
FEB 17 2016

Mr. John E. Kieling, Bureau Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

Subject: Class 1 Permit Modification Notifications to the Waste Isolation Pilot Plant
Hazardous Waste Facility Permit Number: NM4890139088-TSDF

Dear Mr. Kieling:

Enclosed is a Notification of Class 1 Permit Modifications for the following items:

- Technical Training Organizational Change
- Descriptive Changes Regarding Ventilation Configurations
- Update Resource Conservation and Recovery Act Emergency Coordinator List
- Update Chronology in Attachment A
- Revise a Procedure Number in Attachment E, Table E-1a
- Update the Underground Ventilation System Description

We certify under penalty of law that this document and all attachments were prepared under our direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on our inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of our knowledge and belief, true, accurate, and complete. We are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please contact Mr. George T. Basabilvazo at 575-234-7488.

Sincerely,

Original Signatures on File

Todd Shrader, Manager
Carlsbad Field Office

Philip J. Breidenbach, Project Manager
Nuclear Waste Partnership LLC

Enclosure

cc: w/enclosure
K. Roberts, NMED *ED
R. Maestas, NMED ED
C. Smith, NMED ED
CBFO M&RC
*ED denotes electronic distribution

Class 1 Permit Modification Notifications

Technical Training Organizational Change

Descriptive Changes Regarding Ventilation Configurations

Update Resource Conservation and Recovery Act Emergency Coordinator List

Update Chronology in Attachment A

Revise a Procedure Number in Attachment E, Table E-1a

Update the Underground Ventilation System Description

**Waste Isolation Pilot Plant
Carlsbad, New Mexico**

WIPP Permit Number - NM4890139088-TSDF

February 2016

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Transmittal Letter

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Overview of the Permit Modification Notifications

This document contains six Class 1 Permit Modification Notifications (**PMNs**) for the Waste Isolation Pilot Plant (**WIPP**) Hazardous Waste Facility Permit (**Permit**) Number NM4890139088-TSDF.

These PMNs are being submitted by the U.S. Department of Energy (**DOE**) and Nuclear Waste Partnership LLC, collectively referred to as the Permittees, in accordance with Permit Part 1, Section 1.3.1. (20.4.1.900 New Mexico Administrative Code (**NMAC**) incorporating Title 40 of the Code of Federal Regulations (**CFR**) §270.42[a]). The PMNs in this document are necessary to notify the New Mexico Environment Department (**NMED**) of changes which impact the Permit. These changes do not reduce the ability of the Permittees to provide continued protection to human health and the environment.

The requested modifications to the Permit and any related supporting documents are provided in these PMNs. The proposed modifications to the text of the Permit have been identified using red text and double underline and a ~~strikeout~~ font for deleted information. Direct quotations are indicated by italicized text.

Attachment A
Description of the Class 1 Permit Modification Notifications

Table 1. Class 1 Hazardous Waste Facility Permit Modification Notifications

Item No.	Affected Permit Section	Change Description	Category
1.	Attachment F, Section F-1, and Figure F-1	<p>This modification revises Permit Attachment F, Section F-1, <i>Outline of the Training Program</i>, to change “General Manager” to “Project Manager,” and to replace “Human Resources” with “Technical Training” in regards to the implementation of technical training. This modification also revises Permit Attachment F, Sections F-1, <i>Outline of the Training Program</i> and F-2 <i>Implementation of Training Program</i> to change “Technical Training Group” to “Technical Training.”</p> <p>This modification revises Attachment F, Figure F-1, <i>Organizational Location of Training, Waste Handling, and Emergency Response Functions</i>, to change “General Manager” to “Project Manager” and to indicate that Technical Training is now reporting to the Deputy Project Manager. Attachment F, Figure F-1 is being revised to change “Emergency Management” to “Emergency Management and Security” and to indicate that this organization is now reporting to the Project Manager in lieu of Environment, Safety, and Health.</p> <p>This modification also defines the acronym for “MOC” to be “Management and Operating Contractor.”</p>	A.1
2.	Attachment A2, Sections A2-2a(3) and A2-2b Attachment D, Section D-4d(8)	<p>This modification adds descriptive language regarding ventilation configurations to the following Permit Sections:</p> <ul style="list-style-type: none"> Attachment A2, Sections A2-2a(3) <i>Subsurface Structures</i> and A2-2b <i>Geologic Repository Process Description</i> Attachment D, Section D-4d(8) <i>Roof Fall</i> <p>The changes include adding the option to move the ventilation control point from the exhaust side of the active room to the air intake side and adding the term ventilation control device to describe equipment and materials typically used in the WIPP underground to control airflow.</p> <p>This modification also changes the acronym “SCFM” to “scfm” (uppercase to lowercase).</p>	A.1
3.	Attachment D, Table D-2	This modification updates the list of RCRA Emergency Coordinators in Permit Attachment D, Table D-2, <i>Resource Conservation and Recovery Act Emergency Coordinators</i> .	B.6.d
4.	Attachment A, Section A-6	This modification updates Attachment A, Section A-6 <i>Chronology of Events Relevant to Changes in Ownership or Operational Control</i> to include the merger between AECOM and URS, effective on January 5, 2015. The WIPP Management and Operating Contractor (MOC), Nuclear Waste Partnership LLC, is comprised of URS Energy and Construction, Inc (an organization within AECOM) and Babcock and Wilcox Technical Services Group, Inc. This modification also changes URS Federal Services to URS Energy and Construction, Inc. in the July 1, 2015 chronology in Attachment A, Section A-6.	A.1
5.	Attachment E, Table E-1a	This modification changes the Instrument Calibration Procedure number in Permit Attachment E, Table E-1a, from	A.1

Item No.	Affected Permit Section	Change Description	Category
		"IC240007" to "IC534000" for the Radiation Monitoring Equipment row.	
6.	Attachment A2, Section A2-2a(3) Attachment A2, Figure A2-9 Attachment A4, Figure A4-2 Attachment D, Figure D-1 Attachment D, Figure D-1a Attachment D, Figure D-6 Attachment D, Figure D-8 Attachment O, Table O-1	<p>This modification updates descriptive language in the Permit sections, figures and tables listed below regarding the underground ventilation system to include the WIPP facility Interim Ventilation System (IVS):</p> <ul style="list-style-type: none"> • Attachment A2, Section A2-2a(3), <i>Subsurface Structures</i> • Attachment A2, Figure A2-9, <i>Underground Ventilation System Airflow</i> • Attachment A4, Figure A4-2, <i>WIPP Traffic Flow Diagram</i> • Attachment D, Figure D-1, <i>WIPP Surface Structures</i> • Attachment D, Figure D-1a, <i>Legend to Figure D-1</i> • Attachment D, Figure D-6, <i>Fire-Water Distribution System</i> • Attachment D, Figure D-8, <i>WIPP On-Site Assembly Areas and WIPP Staging Areas</i> • Attachment O, Table O-1, <i>Ventilation Operating Modes and Associated Flow Rates</i> <p>Editorial changes are also being made to the Permit text to correct some typographical errors and to clarify existing text. For example, a parenthetical is being added; "e.g." is replacing "i.e." in reference to availability of the main exhaust fans; "contaminants in the reduced exhaust flow" is being changed to "particulates" in reference to high efficiency particulate air (HEPA) filtration; and the figures A2-9, A4-2, D-1, D-1a, D-6 and D-8 are being revised to include the new 900 series trailers, the north maintenance shop, and other additions and/or deletions of surface facilities. These changes to the figures are identified with "clouds" which indicate the additions and/or deletions of the surface facilities.</p>	A.1

Item 6

Description

This modification updates descriptive language in the Permit sections, figures and tables listed below regarding the underground ventilation system to include the WIPP facility Interim Ventilation System (IVS):

- Attachment A2, Section A2-2a(3), *Subsurface Structures*
- Attachment A2, Figure A2-9, *Underground Ventilation System Airflow*
- Attachment A4, Figure A4-2, *WIPP Traffic Flow Diagram*
- Attachment D, Figure D-1, *WIPP Surface Structures*
- Attachment D, Figure D-1a, *Legend to Figure D-1*
- Attachment D, Figure D-6, *Fire-Water Distribution System*
- Attachment D, Figure D-8, *WIPP On-Site Assembly Areas and WIPP Staging Areas*
- Attachment O, Table O-1, *Ventilation Operating Modes and Associated Flow Rates*

Editorial changes are also being made to the Permit text to correct some typographical errors and to clarify existing text. For example, a parenthetical is being added; “e.g.” is replacing “i.e.” in reference to availability of the main exhaust fans; “contaminants in the reduced exhaust flow” is being changed to “particulates” in reference to high efficiency particulate air (HEPA) filtration; and the Figures A2-9, A4-2, D-1, D-1a, D-6 and D-8 are being revised to include the new 900 series trailers, the north maintenance shop, and other additions and/or deletions of surface facilities. These changes to the figures are identified with “clouds” which indicate the additions and/or deletions of the surface facilities.

Basis

The change is classified as “Administrative and informational changes” and is, therefore, a Class 1 modification notification pursuant to 20.4.1.900 NMAC (incorporating 40 CFR §270.42, Appendix I, A.1).

This modification provides the necessary update to the underground ventilation system description to include the IVS for operation in HEPA filtration mode. This modification adds descriptive text relative to the IVS, and it does not eliminate any ventilation system modes of operation nor does it propose changes to the minimum ventilation flow rate requirements in Permit Part 4; therefore, this is an administrative and informational change.

Discussion

The *Waste Isolation Pilot Plant Nitrate Salt Bearing Waste Container Isolation Plan* commits to continued operation in filtration mode for the foreseeable future¹. Permit Part 4, Section 4.5.3.2 specifies a minimum ventilation flow rate of 35,000 standard ft³ per minute (**scfm**) minimum ventilation flow rate in the active disposal room when waste handling is underway. Permit Attachment A2 contains descriptive text regarding ventilation equipment and modes of operation. One portion of this description regards the design of the HEPA filtration system as a method of protecting human health and the environment in the event of a radiological release in

¹ *Waste Isolation Pilot Plant Nitrate Salt Bearing Waste Container Isolation Plan*, Revision 2.

the underground. By design, the filtration system is limited to a net flow rate of 60,000 scfm of ventilation air. Because this flow rate is insufficient to support underground activities such as waste disposal and because the Permit requires a minimum of 35,000 scfm in the active disposal room when waste handling is underway, the IVS provides additional filtered ventilation air necessary to allow TRU mixed waste handling operations to resume. This upgrade has resulted in a revision to the configuration of the ventilation system by providing additional ventilation equipment and operating modes, and as a result, the descriptions in Permit Attachment A2, Section A2-2a(3), Attachment O, Table O-1 require revision. In addition, various figures are being revised to depict the IVS.

The changes to the Permit text include updates to text and figures that describe the WIPP facility underground ventilation system, including a description of the IVS. The Permittees submitted a notification of planned alteration to the permitted facility to the NMED on August 26, 2014, describing this system. Consistent with this notification the NMED will be provided with the New Mexico Professional Engineer's certification of the installation and be afforded an opportunity to inspect.

The changes to descriptive text are needed to update the Permit. The editorial changes are needed to correct and clarify existing text.

Proposed Revised Permit Text and Figures:

A2-2a(3) Subsurface Structures

Underground Ventilation System Description

The underground ventilation system consists of ~~six~~ centrifugal exhaust fans, two identical High Efficiency Particulate Air (HEPA)-filter assemblies arranged in parallel, isolation dampers, a filter bypass arrangement, two skid-mounted HEPA-filter assemblies arranged in parallel, and associated ductwork. The ~~six~~ fans, connected by the ductwork to the underground exhaust shaft so that they can independently draw air through the Exhaust Shaft, are divided into ~~two~~ three groups. One group consists of three main exhaust fans, two of which are utilized to provide the nominal air flow of 425,000 standard ft³ per minute (~~scfm~~ scfm) throughout the WIPP facility underground during normal (unfiltered) operation. One main fan may be operated in the alternate mode to provide 260,000 scfm underground ventilation flow. These fans are located near the Exhaust Shaft. The second group consists of ~~the remaining~~ three filtration fans, and each can provide 60,000 scfm of air flow. These fans, located at the Exhaust Filter Building, can be operated in the filtration mode, where exhaust is diverted through HEPA filters, or in the reduced or minimum ventilation mode, where air is not drawn through the HEPA filters. The third group consists of two skid-mounted filtration fans and HEPA-filter assemblies, each of which can provide approximately 23,000 scfm of air flow. The skid-mounted filtration fan and HEPA-filter assemblies, referred to as the Interim Ventilation System (IVS) located south of the Exhaust Filter Building, are only operated in filtration mode, where exhaust is diverted through HEPA filters.

Underground Ventilation Modes of Operation

The underground ventilation system is designed to perform under two types of operation: normal (the HEPA exhaust filtration system is bypassed), and filtered (the exhaust is filtered through the HEPA filtration system), if radioactive contaminants are detected or suspected.

~~Overall, there are six~~ The possible modes of exhaust fan operation are as follows:

- 2 main fans in operation
- 1 main fan in operation
- 1 filtration fan in filtered operation
- 2 fans in filtered operation (one filtration fan and one IVS fan or two IVS fans)
- 3 fans in filtered operation (one filtration fan and two IVS fans)
- 1 filtration fan in unfiltered operation
- 2 filtration fans in unfiltered operation
- 1 main and 1 filtration fan (~~unfiltered~~) in unfiltered operation

Under some circumstances (such as power outages and maintenance activities, etc.), all mine ventilation may be discontinued for short periods of time.

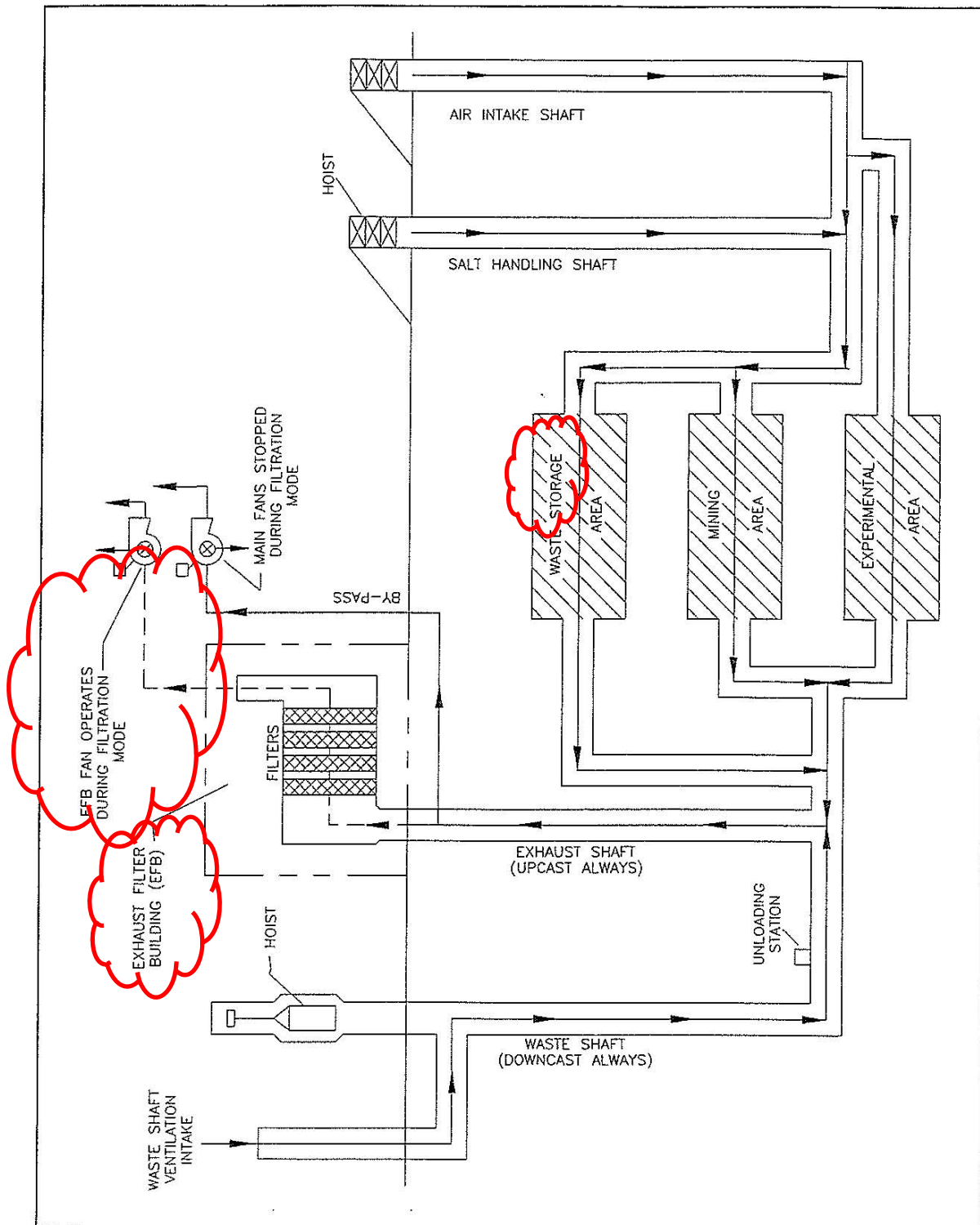
In the normal mode, two main surface exhaust fans, located near the Exhaust Shaft, will provide continuous ventilation of the underground areas. All underground flows join at the bottom of the Exhaust Shaft before discharge to the atmosphere.

Outside air will be supplied to the mining areas and the waste disposal areas through the Air Intake Shaft, the Salt Handling Shaft, and access entries. A small quantity of outside air will flow down the Waste Shaft to ventilate the Waste Shaft station. The ventilation system is designed to operate with the Air Intake Shaft as the primary source of fresh air. Under these circumstances, sufficient air will be available to simultaneously conduct all underground operations (e.g., waste handling, mining, experimentation, and support). Ventilation may be supplied by operating fans in the configurations listed in the above description of the ventilation modes.

If the nominal flow of 425,000 scfm ($12,028 \text{ m}^3/\text{min}$) is not available (~~i.e., e.g.,~~ only one of the main ventilation fans is available) underground operations may proceed, but the number of activities that can be performed in parallel may be limited depending on the quantity of air available. Ventilation may be supplied by operating one or ~~two~~ more of the filtration exhaust fans. To accomplish this, the isolation dampers will be opened, which will permit air to flow from the main exhaust duct to the filter outlet plenum or to the IVS. The filtration fans may also be operated to bypass the HEPA plenum. The isolation dampers of the filtration exhaust fan(s) to be employed will be opened, and the selected fan(s) will be switched on. In this mode, underground operations will be limited, because filtration exhaust fans cannot provide sufficient airflow to support the use of diesel equipment.

If the nominal flow of 425,000 scfm ($12,028 \text{ m}^3/\text{min}$) is not available because ~~In the~~ facility is operating in filtration mode, the exhaust air will pass through ~~two identical~~ HEPA-filter assemblies, with ~~only one of the three Exhaust Filter Building~~ filtration fans operating (~~i.e.,~~ all other fans are stopped). This system provides a means for removing the airborne particulates that may contain radioactive and hazardous waste ~~contaminants in the reduced exhaust flow~~ particulates before they are discharged through the exhaust stack to the atmosphere. The filtration mode is activated manually or automatically if the radiation monitoring system detects abnormally high concentrations of airborne radioactive particulates (an alarm is received from the continuous air monitor in the exhaust drift of the active waste panel) or a waste handling incident with the potential for a waste container breach is observed. The filtration mode is not initiated by the release of gases such as VOCs.

If utility power fails, the exhaust filter system goes into the fail-safe position, and the system high-efficiency particulate-air filter dampers are placed into filtration position. When power is restored by the diesel generators, a decision is made whether to remain in filtration mode and energize a filtration fan or to realign the dampers into the minimum exhaust mode. Without any indication of a radiological release, the decision is usually the latter. TRU mixed waste handling and related operations cease upon loss of utility power and are not resumed until normal utility power is returned. As specified in Part 2, all waste handling equipment will "fail safe," meaning that it will retain its load during a power outage.



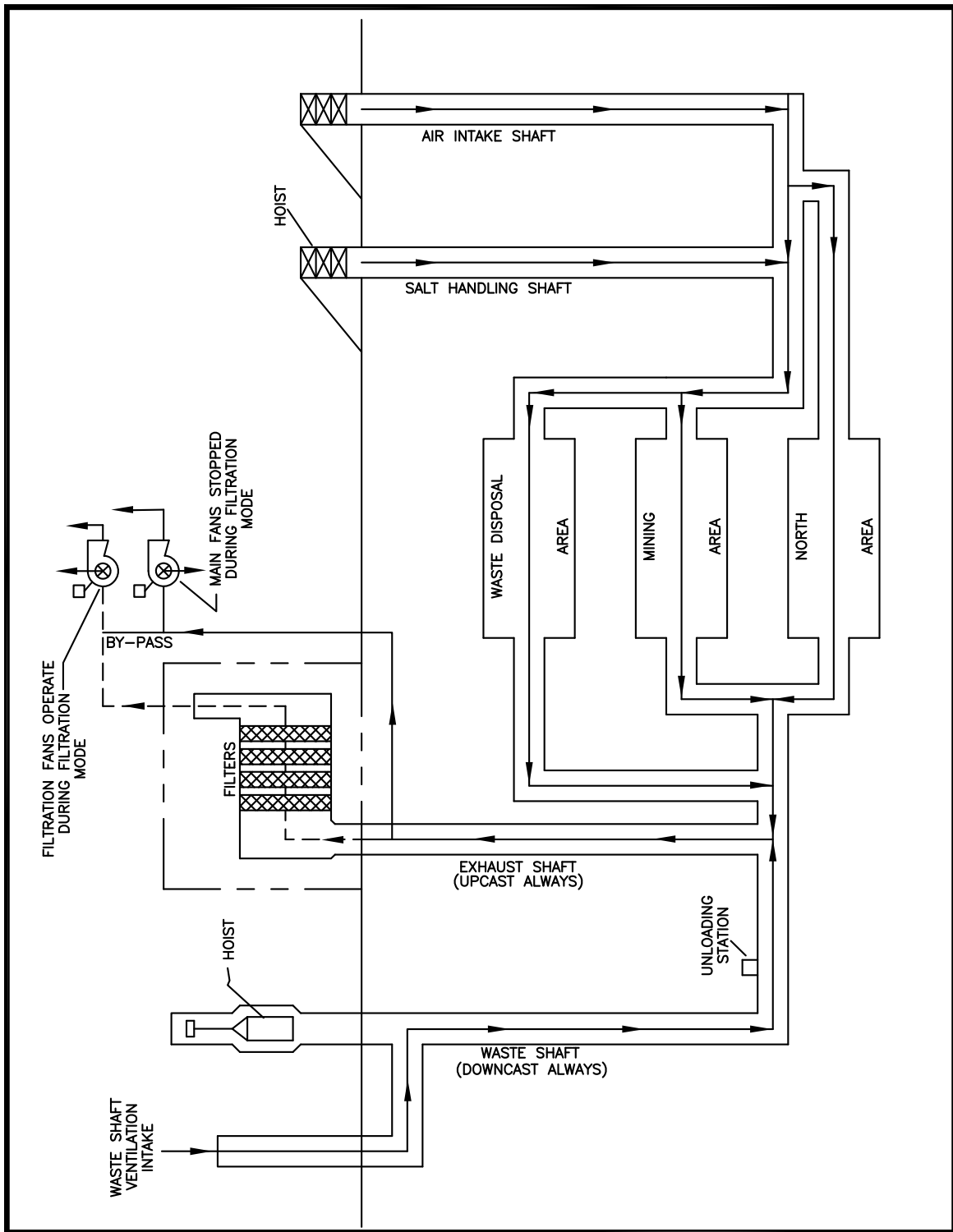
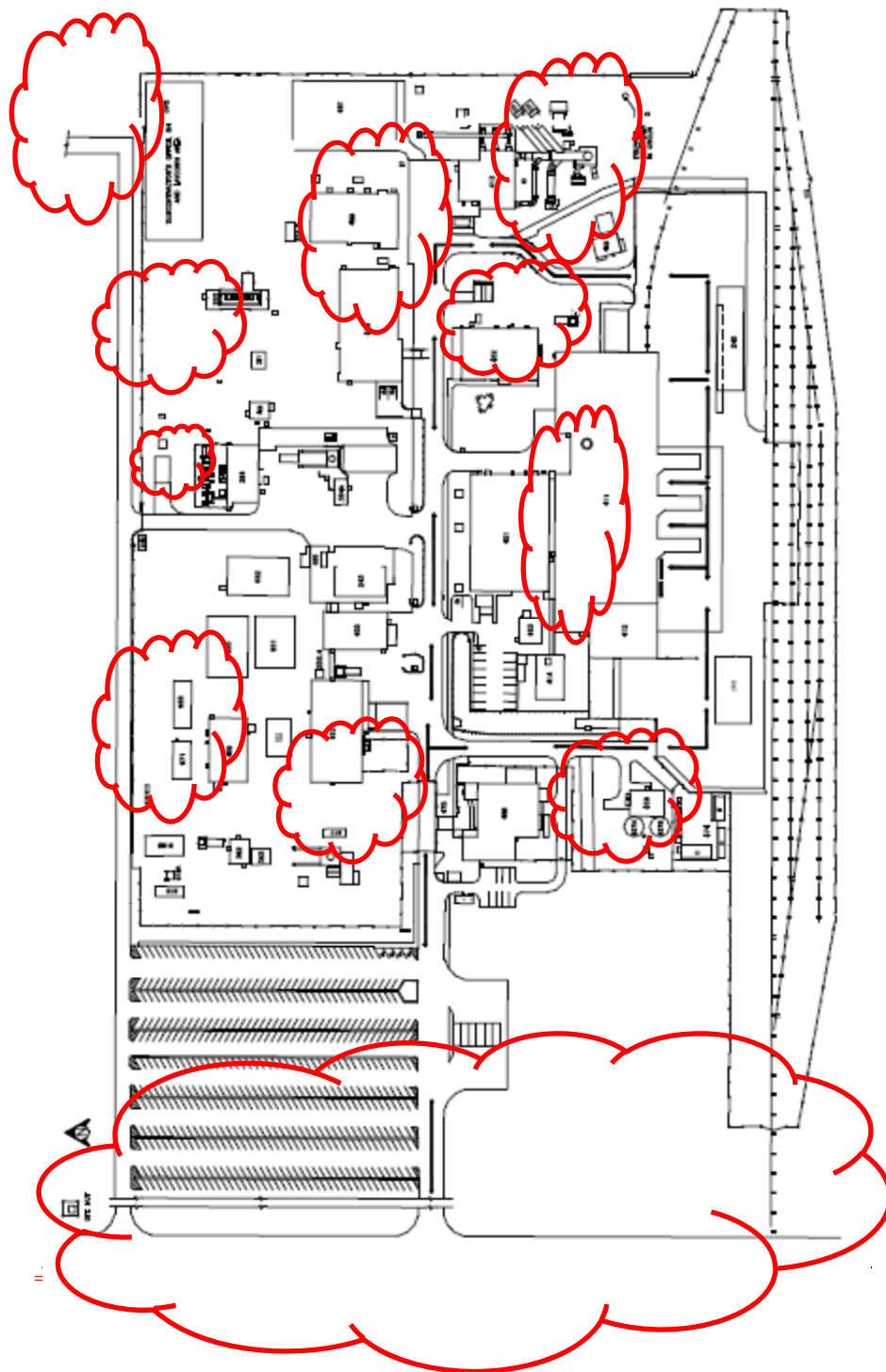


Figure A2-9
Underground Ventilation System Airflow



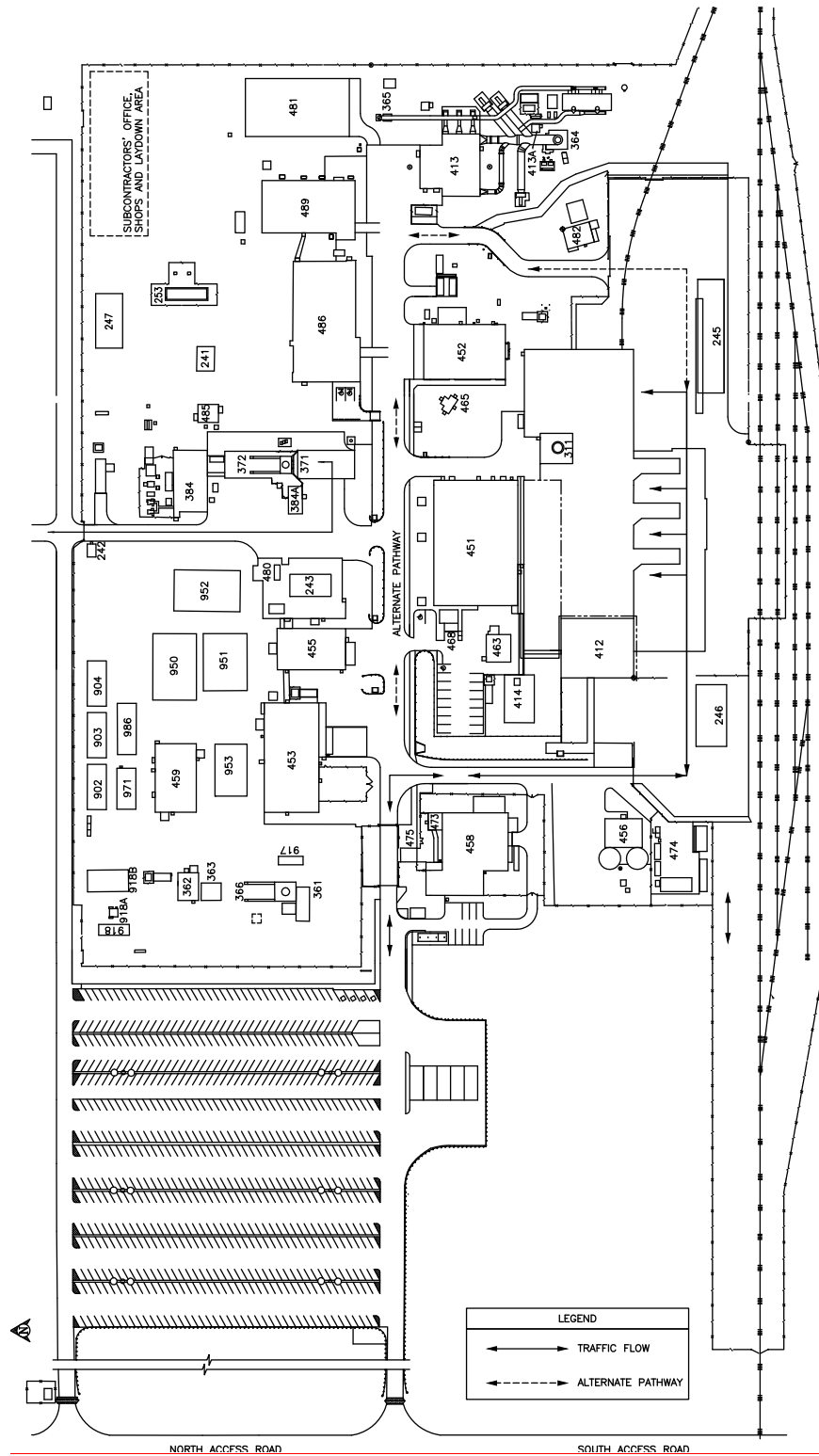
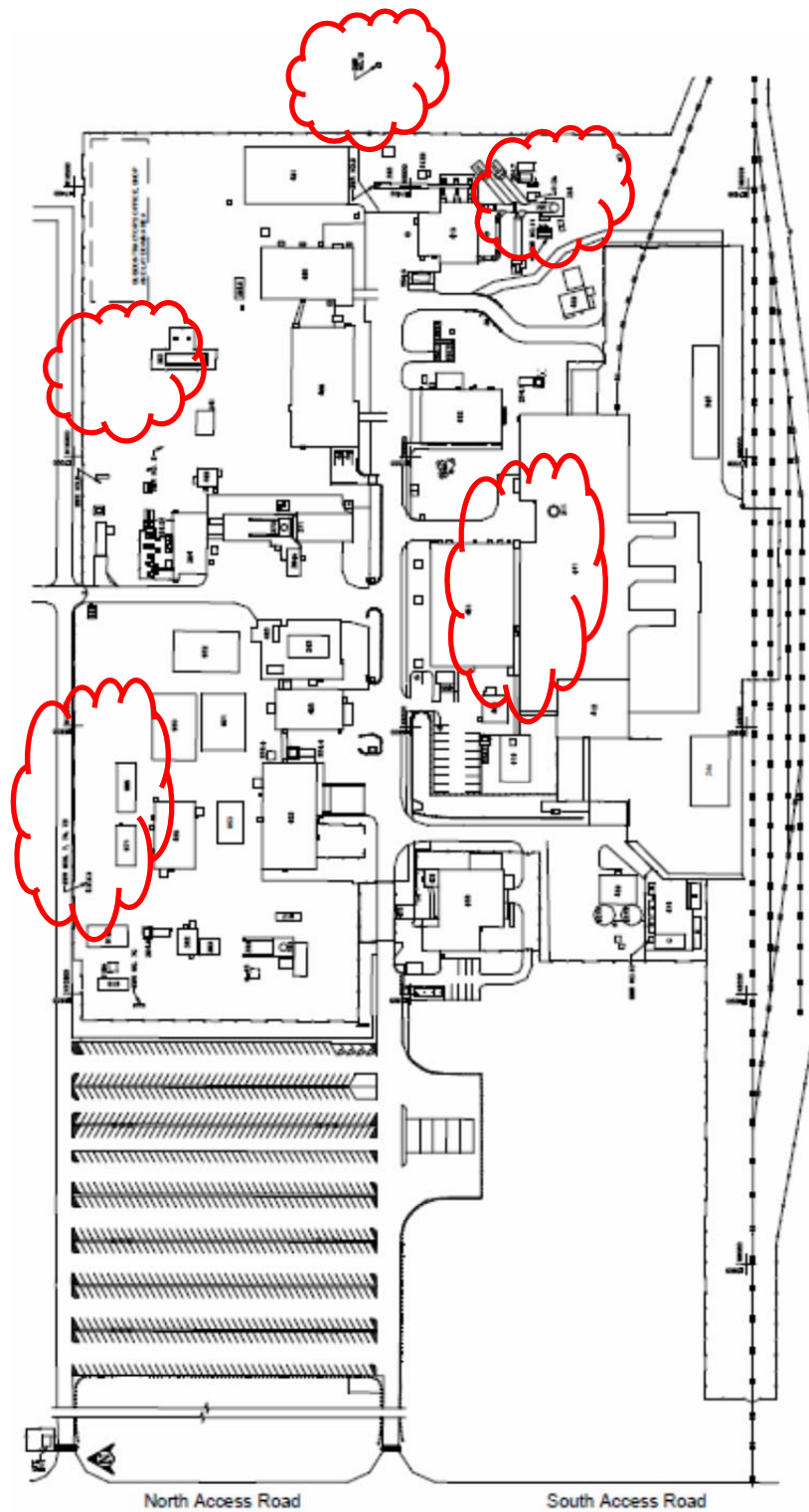


Figure A4-2
WIPP Traffic Flow Diagram



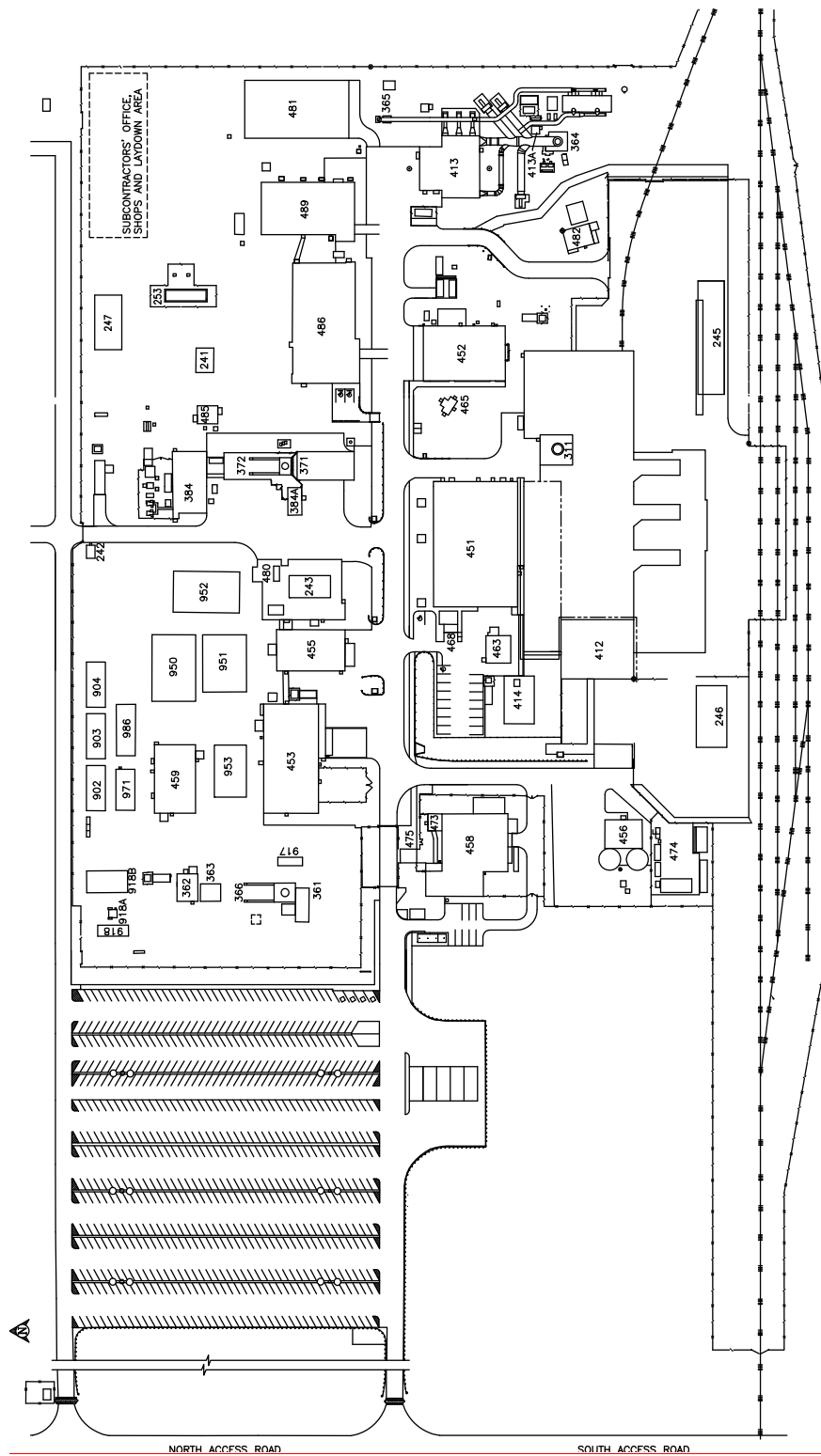
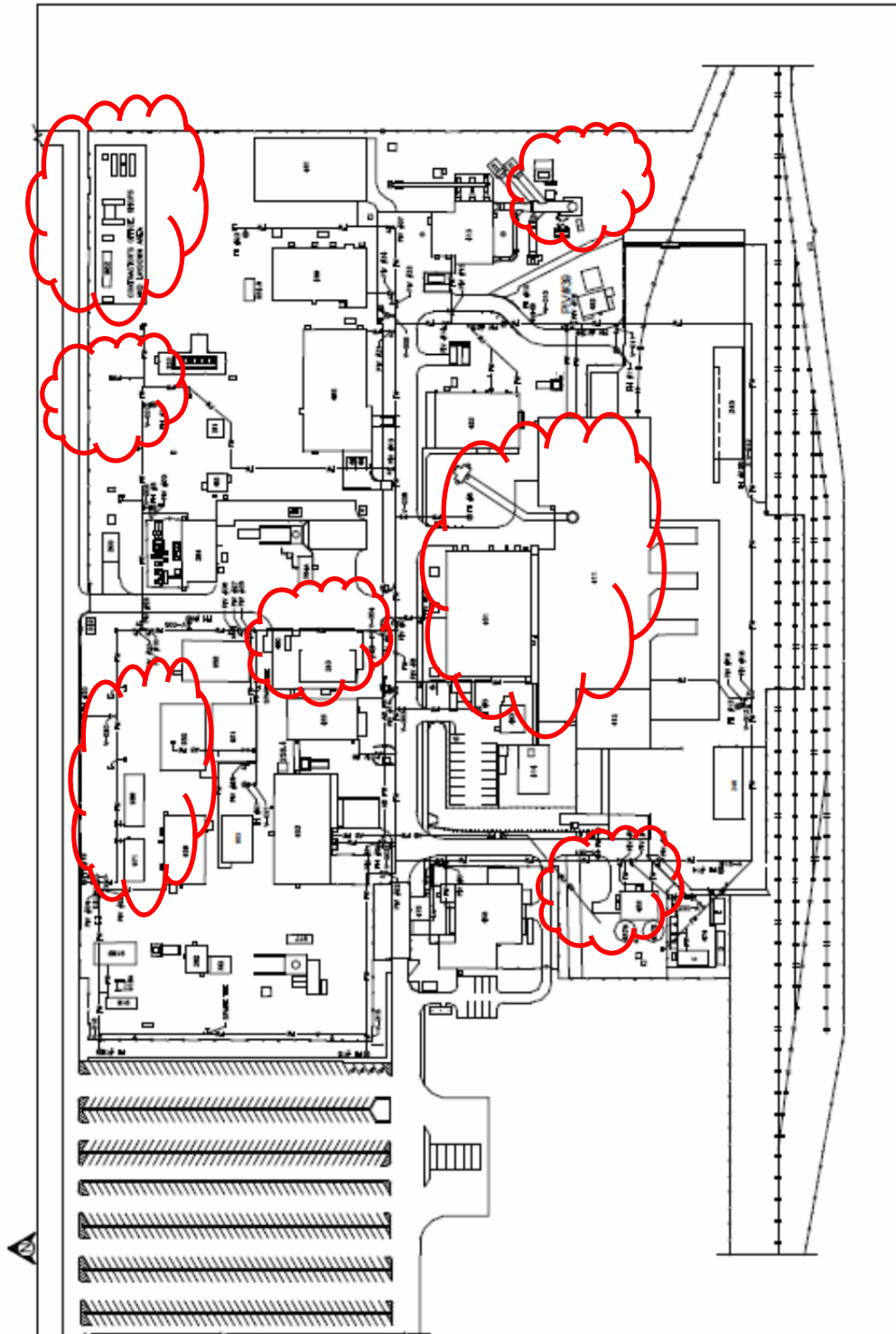


Figure D-1
WIPP Surface Structures

BLDG / FAC. #	DESCRIPTION	BLDG / FAC. #	DESCRIPTION	BLDG / FAC. #	DESCRIPTION
#241	EQUIPMENT SHED	#384	SALT HANDLING SHAFT HOISTHOUSE	#475	GATEHOUSE
#242	GUARDSHACK	#384A	MINING OPERATIONS	#480	VEHICLE FUEL STATION
#243	SALT HAULING TRUCKS SHELTER	#311	WASTE HANDLING BUILDING	#481	WAREHOUSE ANNEX
#245	TRUPACT TRAILER SHELTER	#412	TRUPACT MAINTENANCE BUILDING	#482	EXHAUST SHAFT HOIST EQUIP. WAREHOUSE
#246	MgO STORAGE SHELTER	#413	EXHAUST SHAFT FILTER BUILDING	#485	SULLAIR COMPRESSOR BUILDING
#253	13.8 KV SWITCHGEAR 25p-SWG15/1	#413A	MONITORING STATION A	#486	ENGINEERING BUILDING
#254.1	AREA SUBSTATION NO. 1 25P-SW15.1	#413B	MONITORING STATION B	#489	TRAINING BUILDING
#254.2	AREA SUBSTATION NO. 2 25P-SW15.2	#414	WATER CHILLER FACILITY & BLDG	#H-16	SANDIA TEST WELL
#254.3	AREA SUBSTATION NO. 3 25P-SW15.3	#451	SUPPORT BUILDING	#917	AIS MONITORING
#254.4	AREA SUBSTATION NO. 4 25P-SW15.4	#452	SAFETY & EMERGENCY SERVICES FACILITY	#918	VOC TRAILER
#254.5	AREA SUBSTATION NO. 5 25P-SW15.5	#453	WAREHOUSE/SHOPS BUILDING	#918A	VOC AIR MONITORING STATION
#254.6	AREA SUBSTATION NO. 6 25P-SW15.6	#455	AUXILIARY WAREHOUSE BUILDING	#918B	VOC LAB TRAILER
#254.7	AREA SUBSTATION NO. 7 25P-SW15.7	#456	WATER PUMPHOUSE	#950	WORK CONTROL TRAILER
#254.8	AREA SUBSTATION NO. 8 25P-SW15.8	#457N	WATER TANK 25-D-001B	#951	PROCUREMENT/PURCHASING
#254.9	480V SWITCHGEAR (25P-SWGO4/9)	#457S	WATER TANK 25-D-001A	#952	TRAILER
#255.1	BACK-UP DIESEL GENERATOR #1 25-PE 503	#458	GUARD AND SECURITY BUILDING	#953	MODULAR OFFICE COMPLEX
#255.2	BACK-UP DIESEL GENERATOR #2 25-PE 504	#459	CORE STORAGE BUILDING	#971	HUMAN RESOURCES TRAILER
#256.4	SWITCHBOARD #4 (25P-SBD04/4)	#463	COMPRESSOR BUILDING	#986	PUBLICATIONS & PROCEDURES TRAILER
#311	WASTE SHAFT	#465	AUXILIARY AIR INTAKE	SWR NO. 6	SWITCHRACK NO. 6
#351	EXHAUST SHAFT	#468	TELEPHONE HUT	SWR NO. 7	7A, 7B SWITCHRACK NO. 7, 7A, 7B
#361	AIR INTAKE SHAFT	#473	ARMORY BUILDING	SWR NO. 7C	SWITCHRACK NO. 7C
#362	AIR INTAKE SHAFT/HOIST HOUSE	#474	HAZARDOUS WASTE STORAGE FACILITY	SWR NO. 10	SWITCHRACK NO. 10
#363	AIR INTAKE SHAFT/WINCH HOUSE	#474A	HAZARDOUS WASTE STORAGE BUILDING	SWR NO. 11	SWITCHRACK NO. 11
#364	EFFLUENT MONITORING INSTRUMENT SHED A	#474B	HAZARDOUS WASTE STORAGE BUILDING	SWR NO. 12	SWITCHRACK NO. 12
#365	EFFLUENT MONITORING INSTRUMENT SHED B	#474C	OIL & GREASE STORAGE BUILDING	SWR NO. 15	SWITCHRACK NO. 15
#366	AIR INTAKE SHAFT HEADFRAME	#474D	GAS BOTTLE STORAGE BUILDING		
#371	SALT HANDLING SHAFT	#474E	HAZARD MATERIAL STORAGE BUILDING		
#372	SALT HANDLING SHAFT HEADFRAME	#474F	WASTE OIL RETAINER		

BLDG./ FAC. #	DESCRIPTION	BLDG./ FAC. #	DESCRIPTION	BLDG./ FAC. #	DESCRIPTION
#241	EQUIPMENT SHED	#384	SALT HANDLING SHAFT HOISTHOUSE	#480	VEHICLE FUEL STATION
#242	GUARDSHACK	#384A	MINING OPERATIONS	#481	WAREHOUSE ANNEX
#243	SALT HAULING TRUCKS SHELTER	#411	WASTE HANDLING BUILDING	#482	EXHAUST SHAFT HOIST EQUIP. WAREHOUSE
#245	TRUPACT TRAILER SHELTER	#412	TRUPACT MAINTENANCE BUILDING	#485	SULLAIR COMPRESSOR BUILDING
#246	MgO STORAGE SHELTER	#413	EXHAUST SHAFT FILTER BUILDING	#486	ENGINEERING BUILDING
#247	NORTH MAINTENANCE SHOP	#413A	MONITORING STATION A	#489	TRAINING BUILDING
#253	13.8 KV SWITCHGEAR 25P-SWG15/1	#413B	MONITORING STATION B	#H-16	SANDIA TEST WELL
#254.1	AREA SUBSTATION NO.1 25P-SW15.1	#414	WATER CHILLER FACILITY & BLDG	#902	TRAILER
#254.2	AREA SUBSTATION NO.2 25P-SW15.2	#451	SUPPORT BUILDING	#903	TRAILER
#254.3	AREA SUBSTATION NO.3 25P-SW15.3	#452	SAFETY & EMERGENCY SERVICES FACILITY	#904	TRAILER
#254.4	AREA SUBSTATION NO.4 25P-SW15.4	#453	WAREHOUSE/SHOPS BUILDING	#917	AIS MONITORING
#254.5	AREA SUBSTATION NO.5 25P-SW15.5	#455	AUXILLIARY WAREHOUSE BUILDING	#918	VOC TRAILER
#254.6	AREA SUBSTATION NO.6 25P-SW15.6	#456	WATER PUMPHOUSE	#918A	VOC AIR MONITORING STATION
#254.7	AREA SUBSTATION NO.7 25P-SW15.7	#457	WATER TANK 25-D-001A	#918B	VOC LAB TRAILER
#254.8	AREA SUBSTATION NO.8 25P-SW15.8	#457	WATER TANK 25-D-001B	#950	WORK CONTROL TRAILER
#254.9	480V SWITCHGEAR (25P-SWG04/9)	#458	GUARD AND SECURITY BUILDING	#951	PROCUREMENT/PURCHASING
#255.1	BACK-UP DIESEL GENERATOR #1 25-PE 503	#459	CORE STORAGE BUILDING	#952	TRAILER
#255.2	BACK-UP DIESEL GENERATOR #2 25-PE 504	#463	COMPRESSOR BUILDING	#953	OFFICE COMPLEX 953
#256.4	SWITCHBOARD #4 (25P-SBD04/4)	#465	AUXILIARY AIR INTAKE	#971	HUMAN RESOURCES TRAILER
#311	WASTE SHAFT	#468	TELEPHONE HUT	#986	PUBLICATIONS & PROCEDURES TRAILER
#351	EXHAUST SHAFT	#473	ARMORY BUILDING	SWR NO.6	SWITCHRACK NO. 6
#361	AIR INTAKE SHAFT	#474	HAZARDOUS WASTE STORAGE FACILITY	SWR NO.7,7A,7B	SWITCHRACK NO. 7, 7A, 7B
#362	AIR INTAKE SHAFT/HOIST HOUSE	#474A	HAZARDOUS WASTE STORAGE BUILDING	SWR NO.7C	SWITCHRACK NO. 7C
#363	AIR INTAKE SHAFT/WINCH HOUSE	#474B	HAZARDOUS WASTE STORAGE BUILDING	SWR NO.10	SWITCH RACK NO. 10
#364	EFFLUENT MONITORING INSTRUMENT SHED A	#474C	OIL & GREASE STORAGE BUILDING	SWR NO.11	SWITCH RACK NO. 11
#365	EFFLUENT MONITORING INSTRUMENT SHED B	#474D	GAS BODLE STORAGE BUILDING	SWR NO.12	SWITCH RACK NO. 12
#366	AIR INTAKE SHAFT HEADFRAME	#474E	HAZARD MATERIAL STORAGE BUILDING	SWR NO.16	SWITCH RACK NO. 16
#371	SALT HANDLING SHAFT	#474F	WASTE OIL RETAINER	COMPACTOR	25-H-010
#372	SALT HANDLING SHAFT HEADFRAME	#475	GATEHOUSE	BALER	25-H-011

Figure D-1a
Legend to Figure D-1



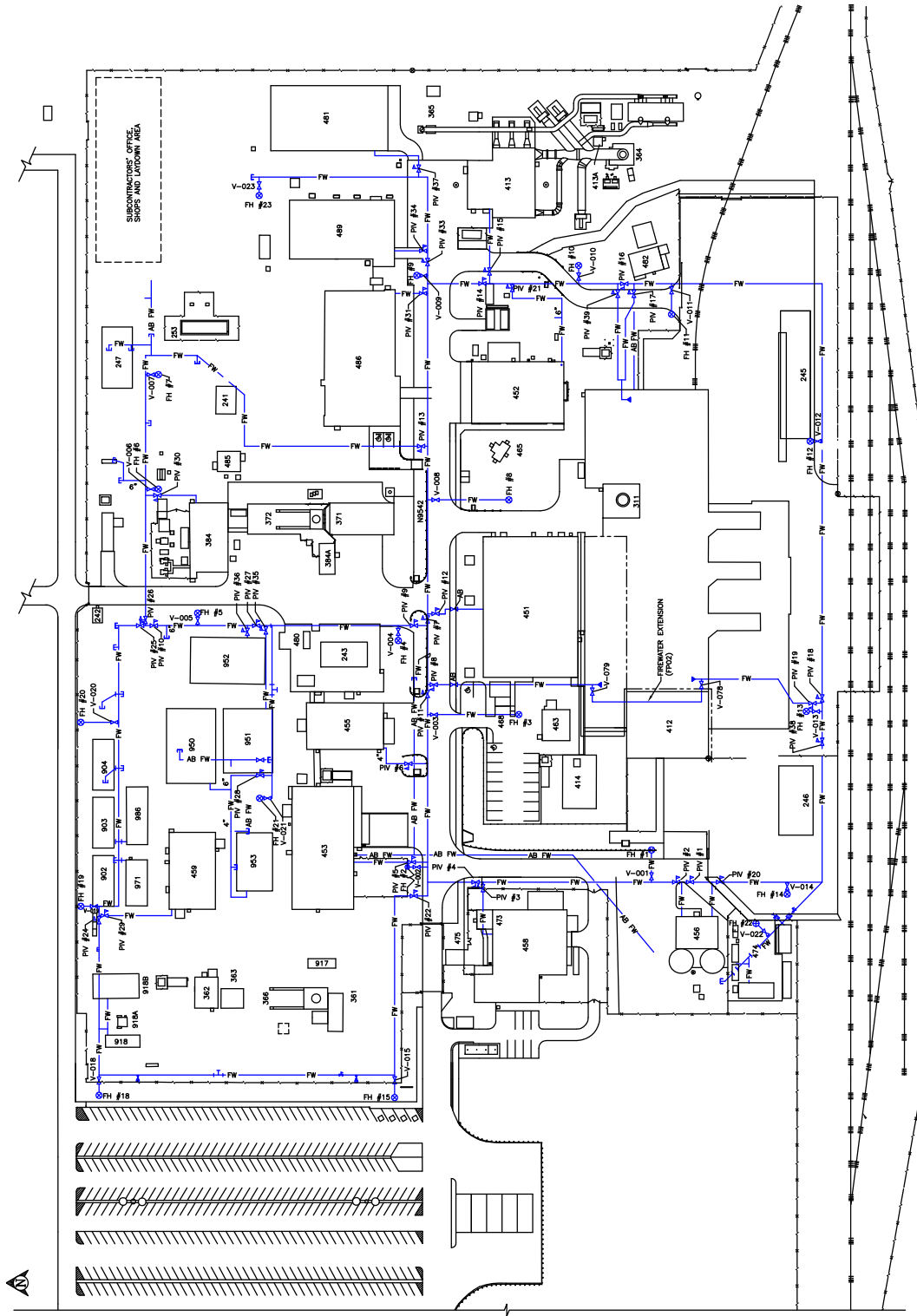
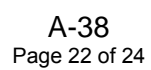


Figure D-6
Fire-Water Distribution System



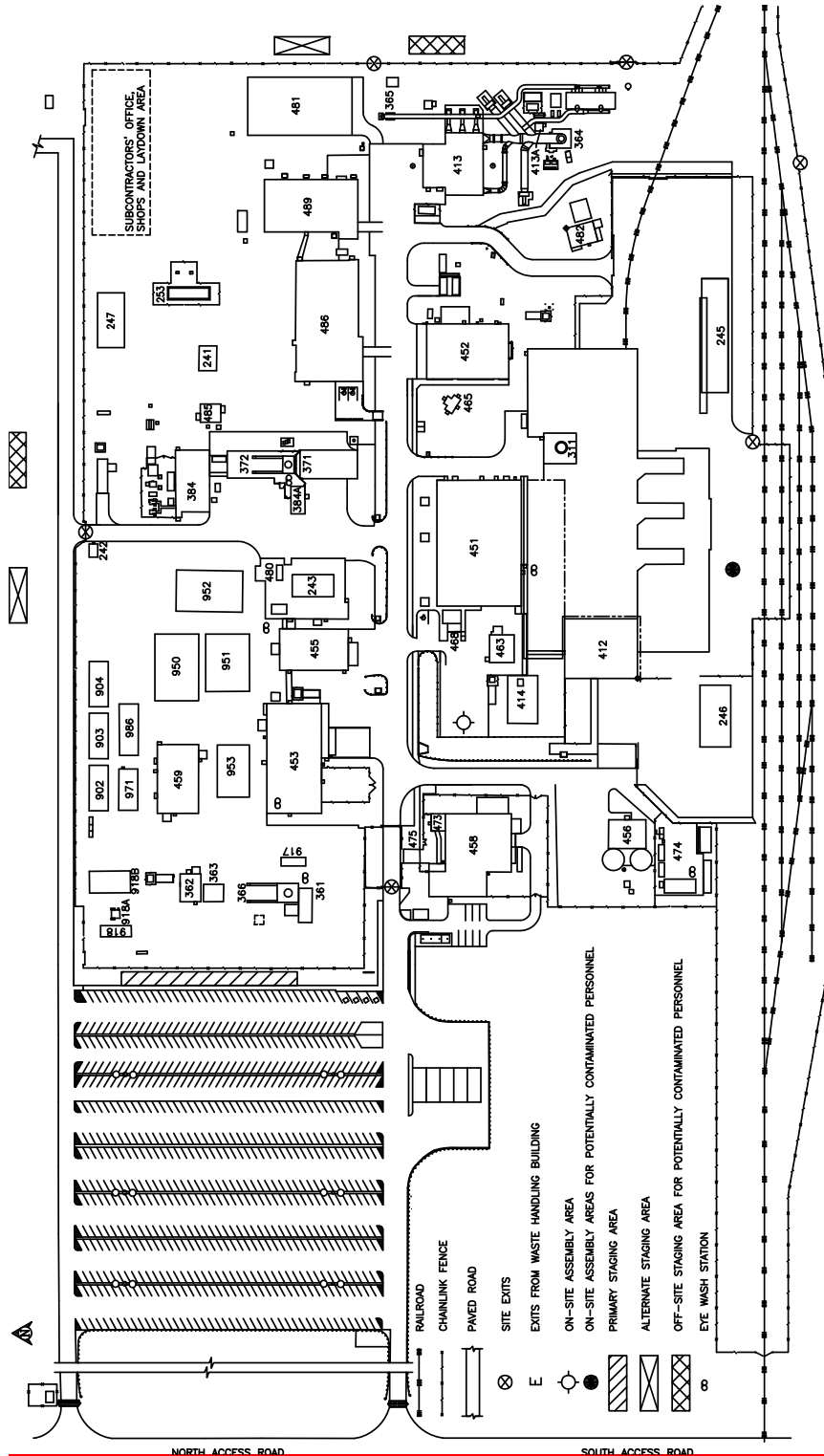


Figure D-8
WIPP On-Site Assembly Areas and WIPP Staging Areas

TABLE O-1
Ventilation Operating Modes and Associated Flow Rates

Mode of Operation	Flow Rate (scfm) Nominal Design Values
Normal (two main fans)	425,000
Alternate (one main fan)	260,000
Maintenance Bypass [parallel operation of main fan(s) and filtration fan(s)]	260,000 to 425,000
Reduced (two filtration fans)	120,000
Minimum (one filtration fan)	60,000
Filtration (one filtration fan <u>or one IVS fan</u>)	60,000 <u>or 23,000</u>
<u>Filtration (one filtration fan and one IVS fan or two IVS fans)</u>	<u>83,000 or 46,000</u>
<u>Filtration (one filtration fan and two IVS fans)</u>	<u>106,000</u>

ATTACHMENT 36b
WORK PLAN TO INCORPORATE SUPPLEMENTAL VENTILATION
SYSTEM INTO THE PERMIT

2 PAGES

WORK PLAN
(STIPULATED FINAL ORDER NO. HWB-14-21, PARAGRAPH 31, ATTACHMENT A
NARRATIVE, SECTION 7.2.2.2, ATTACHMENT 36b)

1.0 OVERVIEW

Pursuant to the New Mexico Environment Department (**NMED**) Stipulated Final Order No. HWB-14-21 (**Order**), the United States Department of Energy and Nuclear Waste Partnership LLC, hereinafter referred to as the Permittees, are submitting this document to comply with Paragraph 31 of the Order. Section 7.2.2.2 of the Attachment A narrative requires the Permittees to describe the proposed contents of two Class 1 Permit Modification Notifications (**PMNs**) to include, but not be limited to, updating the Waste Isolation Pilot Plant Hazardous Waste Facility Permit (**Permit**) language describing the underground ventilation system to incorporate the Interim Ventilation System (**IVS**) and the Supplemental Ventilation System (**SVS**).

Since the IVS PMN (**ATTACHMENT 36a**) was submitted to the NMED on February 17, 2016, this work plan only addresses the content of the SVS PMN and the process that the Permittees will follow to prepare and submit the PMN. At a minimum, the PMN will be submitted pursuant to Paragraph 31 of the Order and Permit Part 1, Section 1.3.1 and address the following requirements:

- It will specify the changes being made to the Permit.
- It will identify that it is Class 1 modification.
- It will explain why the modification is needed.
- It will contain a signed certification statement per 20.4.1.900 NMAC (incorporating 40 CFR 270.11(d)(1) and 40 CFR 270.30(k)).

2.0 PROPOSED PERMIT REVISIONS

The PMN will include, but will not necessarily be limited to, the modifications listed below.

- Update language describing the underground ventilation system
 - Update modes of ventilation.
 - Update training.
 - Update exhaust pathways for clean air.
 - Update figures.

3.0 SCHEDULE

The Permittees shall submit a Class 1 PMN no later than 7 calendar days after the SVS has been implemented.

**ATTACHMENT 36: UNDERGROUND VENITLATION SYSTEM PERMIT MODIFICATION
WORK PLAN**

SVS

Activity	Anticipated Date
Submit Work Plan	March 22, 2016
NMED Approves Work Plan	April 22, 2016
SVS Startup	June 12, 2017
Submit PMN to NMED	June 16, 2017

ATTACHMENT 37
MONTHLY REPORT SHOWING THE STATUS OF EXHAUST SHAFT
INSPECTIONS

39 PAGES



Department of Energy
Carlsbad Field Office
P.O. Box 3090
Carlsbad, New Mexico 88221

DEC 31 2015

Mr. John E. Kieling, Bureau Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87508-6303

Ms. Kathryn Roberts, Director
Resource Protection Division
New Mexico Environment Department
Harold Runnels Building
1190 Saint Francis Drive, Room 4050
Santa Fe, NM 87502-5469

Subject: Monthly Report for the Reporting Period ending November 30, 2015, as required by NMED Administrative Orders dated February 27, 2014, and May 12, 2014, as amended by NMED Directives dated August 29, 2014, December 9, 2014, and July 15, 2015

Dear Mr. Kieling and Ms. Roberts:

The purpose of this letter is to transmit the monthly report for the reporting period ending November 30, 2015, as required by the February 27, 2014, and May 12, 2014, Administrative Orders, issued under the authority of the New Mexico Hazardous Waste Act § 74-4-13 from Mr. Ryan Flynn to Messrs. Hellstrom, Franco, Cook, and McQuinn, and as amended by the August 29, 2014 and December 9, 2014, directives from Mr. Ryan Flynn to Messrs. Franco and McQuinn and the July 15, 2015, directive from Ms. Kathryn Roberts to Messrs. Bryson and Breidenbach. The paper copy of the report is enclosed along with a compact disc containing the electronic version of the report.

We certify under penalty of law that this document and all attachments were prepared under our direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on our inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of our knowledge and belief, true, accurate, and complete. We are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please contact Mr. George T. Basabivazo at (575) 234-7488.

Sincerely,

Original Signatures on File

Todd Shrader, Manager
Carlsbad Field Office

Philip J. Breidenbach, Project Manager
Nuclear Waste Partnership LLC

Enclosure

cc: w/enclosure
R. Maestas, NMED *ED
S. Holmes, NMED ED
C. Smith, NMED ED
J. Sales, EPA ED
CBFO M&RC
*ED denotes electronic distribution

Monthly Status Report for the New Mexico Environment Department Administrative Orders

Reporting Period November 1, 2015, through November 30, 2015

Introduction

The New Mexico Environment Department (NMED) issued two Administrative Orders (AOs) to provide requirements for monitoring and reporting to the NMED concerning the status of recovery from two events. On February 5, 2014, a vehicle fire occurred in the Waste Isolation Pilot Plant (WIPP) underground, resulting in temporary suspension of normal operations and waste shipments from generator sites. On February 14, 2014, while the fire investigation was still underway, a radiological event occurred in the WIPP underground facility.

The first administrative order (AO1) issued on February 27, 2014, addressed above-ground compliance, and required a weekly report to be submitted with regard to surface-related requirements of the Permit. On May 12, 2014, a second administrative order (AO2) was issued to address, in part, Permit-required activities that cannot currently be performed due to restriction on access to the underground. The second administrative order changed the reporting period from weekly to biweekly, with additional information required to supplement the information required by AO1. A directive from the Secretary of the NMED was issued on August 29, 2014, which amended the reporting frequency from biweekly to monthly for reporting required under AO1 and AO2 with the submittal being due to NMED no later than the 15th of the month for activities conducted during the previous month. A new directive from the Secretary of the NMED was issued on December 9, 2014, which amended the submittal frequency for this report. The new due date for the monthly submittal shall be the last day of the subsequent month for activities conducted during the previous month.

On May 20, 2014, NMED issued a third administrative order (AO3) requiring the submittal of a WIPP Nitrate Salt Bearing Waste Container Isolation Plan. The order prescribed that updates be provided on the plan's implementation via technical calls and written updates. On July 15, 2015, NMED issued a letter describing modification to the May 20, 2014, administrative order and amendment to the reporting requirements pertaining to all CY 2014 administrative orders. Initial closure of Panel 6 and closure of Panel 7, Room 7 were completed in accordance with the plan; therefore, the technical calls and written updates memorializing those calls have ceased pursuant to the July 15, 2015, letter from the NMED.

This report serves to fulfill the monitoring and reporting requirements set forth by AO1, AO2, and AO3 as amended by the NMED directives dated August 29, 2014, December 9, 2014, and July 15, 2015. In accordance with Paragraph 18(a) of AO2, subsequent reports will identify new information since the previous reporting period. The following sections combine the information required by the three orders and provide references to the respective paragraphs from AO1, AO2, and AO3.

1.0 Status of Permit-related surface and underground inspections for this reporting period, as requested per Paragraph 14(a) of AO1 and Paragraphs 18(c) and 18(e)(iii) of AO2, including the accessibility for personnel performing these Permit-required activities per Paragraph 18(e)(i) of AO2 and the status of recovery activities per Paragraph 18(e)(ii) of AO2:

Attachment 1, *Surface and Underground Inspections*, shows the current status of each Permit-required inspection, including accessibility of underground equipment for personnel performing the inspections. The Permit-related inspection list was taken from Permit Attachment E, Table E-1.

2.0 Status of Permit-related monitoring activities for this reporting period, as requested per Paragraph 14(a) of AO1 and Paragraph 18(c) of AO2, including the accessibility for personnel performing these Permit-required activities per Paragraph 18(e)(i) of AO2 and the status of recovery activities per Paragraph 18(e)(ii) of AO2:

In accordance with Paragraph 17(a) of AO2, and a subsequent letter from the NMED dated September 24, 2014, the Permittees submitted a revised draft of the underground compliance plan (UCP) on October 30, 2014, for NMED's review and comment. The UCP contains a compliance schedule including a proposed timeline, including dates, for achieving underground recovery and attaining compliance with these Permit-required activities. A status of these activities, as described in future updates to the UCP, will be reflected in the monthly reports, as required by Paragraph 18(c) of AO2.

Volatile Organic Compound (VOC) Monitoring

Repository VOC monitoring activities (required by Permit Part 4, Section 4.6.2, including Table 4.6.2.3, and associated requirements in Attachment N) including room-based VOC monitoring activities (required by Permit Part 4, Sections 4.4.3 and 4.6.3, Tables 4.4.1 and 4.6.3.2, and associated requirements in Attachment N) are not currently being performed due to radioactive contamination.

Surface VOC monitoring is being conducted in lieu of underground monitoring during recovery operations utilizing portable passive air sampling kits. Surface monitoring is being performed to assure that the Permit environmental performance standards (i.e., carcinogenic and non-carcinogenic risk due to VOC emissions from the disposed waste) for surface non-waste workers are satisfied. Samples are being collected twice each week at one location on-site and one location off-site. The two monitoring locations, which are 24-hour VOC samples, are collected on the surface near the Training Building and at an off-site location (WQSP-4) approximately a mile southeast of the Training Building. These samples are used to quantify VOC exposure to a receptor (surface worker) in the Training Building. The sample on-site and the sample at location WQSP-4 are used to quantify VOC concentrations in the ambient air. In accordance with Paragraph 19 of AO2, the Permittees began monitoring for trichloroethylene as a target analyte on May 12, 2014.

Disposal room VOC monitoring is not being conducted in the underground as stated above. This does not pose a threat to underground waste workers because waste handling is not underway in the underground. Disposal room monitoring will be restarted prior to resuming waste emplacement activities.

Geomechanical Monitoring

The purpose of geomechanical monitoring is to confirm the structural integrity of the underground repository. Geomechanical monitoring data are transmitted electronically via remote instruments located in Room 6 of Panel 7 in accordance with Permit Part 4, Section 4.6.1, associated requirements in Attachment A2-5b(2), and Attachment E, Table E-2. More than 4,500 bolts have been installed in the underground since bolting activities resumed in November 2014, and catchup bolting is approximately 85 percent complete.

Hydrogen and Methane Monitoring

Hydrogen and methane monitoring activities (required by Permit Part 4, Section 4.6.5 and associated requirements in Attachment N1) are not currently being performed due to radioactive contamination. This does not pose a threat to underground waste workers because underground activities are not underway in the vicinity of Panels 3 and 4. Hydrogen and methane monitoring is being addressed during recovery.

Mine Ventilation Rate Monitoring

Mine ventilation rate monitoring activities (required by Permit Part 4, Section 4.6.4 and associated requirements of Permit Attachment O) are currently being performed. However, due to reduced air flow in the underground because of operating in filtration mode, the minimum running annual average ventilation rate set forth by the Permit cannot be maintained. Pursuant to the Nitrate Salt Bearing Waste Container Isolation Plan, Revision 2, Section 3, high-efficiency particulate air (HEPA) filtration of underground exhaust air is continuing. The ventilation system has been operating in filtration mode since February 14, 2014, with a flow rate of approximately 60,000 standard cubic feet per minute (SCFM). The calculated running annual average ventilation flow rate as of November 30, 2015, was 59,868 SCFM. Surface VOC monitoring is being used to ensure the reduced flow rate does not pose a threat to the surface non-waste worker.

3.0 Summary of waste shipment information and any other relevant records that document the site of origin, volumes and receipt dates of TRU waste that is currently located at the facility WHB and parking area unit, as requested per Paragraph 14(c) of AO1, and information specifying the deadlines for each individual waste assembly as it relates to AO1, as requested per Paragraph 14(d) of AO1:

Waste is currently being stored in the Waste Handling Building (WHB). Since the submittal of the last monthly report, there has been no additional waste placed in storage in the WHB, and there were no changes to the storage deadlines during this reporting period. Therefore, Attachment 2, *TRU Mixed Waste Currently in Storage at the WIPP Facility*, is currently reserved. Attachment 2 was last updated June 30, 2015.

4.0 Location of any environmental monitoring equipment, including the identification of whether they are stationary, mobile, or permanent. This includes, but is not limited to, VOC monitoring stations, radiological monitoring stations, meteorological monitoring, surface water monitoring, vegetation sampling. The reports shall include dates of deployment and sampling, and all data that has been produced by these monitoring stations for this reporting period, as requested per Paragraph 14(f) of AO1:

See Attachment 3, *Environmental Monitoring*, which includes tables with the locations of environmental monitoring equipment (including identification whether they are stationary, mobile, or permanent) and new data for this reporting period. Aerial photos and diagrams displaying monitoring locations are included. The following briefly describes the monitoring information in Attachment 3, *Environmental Monitoring*.

- VOC monitoring stations – Portable surface monitoring equipment has been deployed since February 25, 2014. Samples are being collected twice each week at the locations indicated in Attachment 3.
 - No validated data were available during this reporting period. The latest update occurred October 31, 2015.
- Radiological monitoring – During this reporting period, monitoring results were below minimum detectable concentrations. The results are included in Attachment 3, *Environmental Monitoring*.
 - Biota/Fauna samples – Fauna samples were obtained on the dates shown in Attachment 3.

5.0 Updates on activities performed pursuant to the Underground Derived Waste Storage Plan, including a description of any surface and underground derived waste produced, whether the derived waste is mixed or non-mixed, the contents, container type, container location, total container count, and approximate volume of derived waste per container, as requested per Paragraph 14(i) of AO1 and Paragraph 18(d) of AO2:

In accordance with Paragraph 17(b) of AO2, the draft *Underground Derived Waste Storage Plan (UDWSP)* was submitted to the NMED by June 26, 2014 for review and comment. On December 2, 2014, NMED provided comments on the UDWSP and notified the Permittees that the draft UDWSP had been approved. The Permittees addressed the comments, incorporated changes and resubmitted the UDWSP to NMED on January 6, 2015. Since the submittal of the last monthly report, no additional derived waste was generated; therefore, Attachment 4, *Surface and Underground Derived Waste Currently in Storage at the WIPP Facility*, is currently reserved. Attachment 4 was last updated June 30, 2015.

6.0 The current status of activities required by the RCRA Contingency Plan, Permit Attachment D, including identification of applicable sections of the Contingency Plan, the schedule for actions required under the Contingency Plan, and any deviations from any Contingency Plan requirements, as requested per Paragraph 18(b) of AO2. Non-applicable sections shall also be identified and explanations shall be provided as to why such sections do not apply:

During this reporting period, the *Sixth Supplement to the Report of Implementation of the Waste Isolation Pilot Plan Facility Resource Conservation and Recovery Act Contingency Plan on April 11, 2014*, was submitted to the NMED on November 25, 2015, as a result of the provisional application of EPA Hazardous Waste Number (HWN) D001 to an additional sixty-six (66) waste containers that have been disposed at the WIPP facility, as described in Section 11.0 of this report.

Since the submittal of the last monthly report, there has been no changes to the RCRA Contingency Plan. Therefore, Attachment 5, *Status of RCRA Contingency Plan Required Activities*, is currently reserved. Attachment 5 was last updated September 30, 2015.

7.0 The monthly report shall include the submission of a list containing all additional requirements placed upon the WIPP by any state or federal agency relating to corrective actions or recovery and as a result of the incidents referenced in Paragraphs 8 and 9 of the May 12, 2014, Administrative Order, including requirements by other segments of DOE, as requested by Paragraph 18(f) of AO2:

During this reporting period, no additional requirements were placed upon the Permittees by any other state or federal agency relating to corrective actions or recovery and as a result of the incidents referenced in Paragraphs 8 and 9 of AO2, including requirements by other segments of the U.S. Department of Energy (DOE). Attachment 6, *Corrective Actions Required for Recovery*, is currently reserved and was last updated October 31, 2015.

8.0 The Permittees shall provide documentation of the “as found” condition of Panel 7, including relevant photographs of the waste, as requested per Paragraph 18(i) of AO2:

On May 20, 2015, isolation of nitrate salt bearing waste containers was completed with the closure of Panel 7, Room 7. This action item is complete; therefore, status updates are no longer required.

9.0 The Permittees shall provide documentation of the “as found” condition of Panel 6 partial closure system, including relevant photographs, as requested per Paragraph 18(j) of AO2:

WIPP personnel completed the initial closure of Panel 6 in May 2015. This action item is complete; therefore, status updates are no longer required.

10.0 The Permittees shall provide a status of recovery-related activities relative to the underground per Paragraph 18(ii) of AO2 and a summary of recovery-related work performed in Panel 7, including relevant photographs, as requested per Paragraph 18(k) of AO2:

During this reporting period, progress has continued on the Interim Ventilation System (IVS). Attachment 8, *Interim Ventilation System & Supplemental Ventilation System Equipment and Work Activities*, shows photographs of the IVS work progress.

During this reporting period, progress continued on contamination mitigation in Panel 7, Rooms 1-5, and the S-2520 drift. An updated radiological rollback map is shown in Attachment 7, *Panel 7 & Other Recovery-Related Work*.

The WIPP site has made significant safety improvements. Recently, eight underground safe havens (or refuge chambers) were delivered to the site and will be downloaded into the underground. The units will become operable after waste disposal operations resume. Each unit is equipped to house 20 people for at least 36 hours in the event of an emergency. These units are being installed at the WIPP facility as part of the overarching safety and emergency program enhancements associated with the WIPP recovery efforts. A photograph of a safe haven unit can be found in Attachment 7, *Panel 7 & Other Recovery-Related Work*.

As the Permittees continue to conduct recovery-related activities, additional descriptions will be provided in subsequent reports.

11.0 The Permittees shall submit a WIPP Nitrate Salt Bearing Waste Container Isolation Plan per Paragraph 22(a) of AO3. The plan shall contain a detailed proposal for the expedited closure of Panel 6 per Paragraph 22(a)(i) of AO3 and the expedited closure of Panel 7, Room 7 per Paragraph 22(a)(iii) of AO3:

On May 20, 2015, isolation of nitrate salt bearing waste containers was completed with the closure of Panel 7, Room 7. WIPP personnel also completed the initial closure of Panel 6 in May 2015. Initial closure of Panel 6, and closure of Panel 7, Room 7 were completed in accordance with the plan. Any written updates to information in the Plan will be provided with the existing monthly report in accordance with an NMED letter dated July 15, 2015.

During this reporting period, there has been a change to the status of TRU mixed waste currently disposed of at the WIPP facility. A letter dated November 25, 2015, was submitted to the NMED, which provisionally applied the D001 hazardous waste number to an additional sixty-six (66) containers disposed of at the WIPP facility. The hazardous waste number applies specifically to containers from the Los Alamos National Laboratory (LANL) homogeneous solids waste stream LA-CIN01.001. The sixty-six (66) containers are located in Panel 6. Attachment 9, *WIPP Nitrate Salt Bearing Waste Container Isolation Plan Information Required by Administrative Order 3*, contains a listing by container number, of the containers to which the additional hazardous waste number was provisionally applied including their disposal location and respective shipment numbers.

Attachment 1

Surface and Underground Inspections

System/Equipment Name	Responsible Organization	Inspection Frequency	Procedure Number and Inspection Criteria	Inspection Status (Current/ Not Current)	Date of Last Inspection	Proposed Start Date (if Not Current or Equipment Not in Use) ¹	Comments
Air Intake Shaft Hoist	Underground Operations	Preoperational	WP 04-HO1004 Inspecting for Deterioration, Safety Equipment, Communication Systems, and Mechanical Operability in accordance with Mine Safety and Health Administration (MSHA) requirements	Current	11/26/15	N/A	
Exhaust Shaft	Underground Operations	Quarterly	PM041099 Inspecting for Deterioration and Leaks/Spills	Current	9/14/15	N/A	
Salt Handling Shaft Hoist	Underground Operations	Preoperational	WP 04-HO1002 Inspecting for Deterioration, Safety Equipment, Communication Systems, and Mechanical Operability in accordance with MSHA requirements	Current	11/24/15	N/A	
Self-Rescuers	Underground Operations	Quarterly	WP 04-AU1026 Inspecting for Deterioration and Functionality in accordance with MSHA requirements	Current	9/30/15	N/A	
Underground Openings—Roof Bolts and Travelways	Underground Operations	Weekly	WP 04-AU1007 Inspecting for Deterioration	Current	11/26/15	N/A	
Waste Hoist	Underground Operations	Preoperational	WP 04-HO1003 Inspecting for Deterioration, Safety Equipment, Communication Systems, and Mechanical Operability, Leaks/Spills, in accordance with MSHA requirements	Current	11/30/15	N/A	

System/Equipment Name	Responsible Organization	Inspection Frequency	Procedure Number and Inspection Criteria	Inspection Status (Current/ Not Current)	Date of Last Inspection	Proposed Start Date (if Not Current or Equipment Not in Use) ¹	Comments
Explosion-Isolation Walls	Underground Operations	Quarterly	Integrity and Deterioration of Accessible Areas	Current	10/8/15	N/A	
Bulkhead in Filled Panels	Underground Operations	Monthly	Integrity and Deterioration of Accessible Areas	Current	11/25/15	N/A	
MSHA Air Quality Monitor	Maintenance/ Underground Operations	Daily	WP 12-IH1828 Inspecting for Air Quality Monitoring Equipment Functional Check	Current	11/30/15	N/A	
Ambulances (Surface) and related emergency supplies and equipment	Emergency Services	Weekly	12-FP0030 Inspecting for Mechanical Operability, Deterioration, and Required Equipment	Current	11/29/15	N/A	
Ambulances (Underground) and related emergency supplies and equipment	Emergency Services	Weekly	12-FP0030 Inspecting for Mechanical Operability, Deterioration, and Required Equipment	Current For in-service ambulance #2	11/28/15	12/31/15	The underground ambulance #2 is in service. Underground ambulance #3 arrived at the WIPP site on August 20, 2015. The new ambulance is awaiting procedural changes prior to starting inspections. It is expected to go into service in December 2015.
Fire Detection and Alarm System (Underground)	Emergency Services	Semiannually	12-FP0027 Inspecting for Deterioration, Operability of indicator lights and, underground fuel station dry chemical suppression system. Inspection is per NFPA 17	Current	7/1/15	N/A	

System/Equipment Name	Responsible Organization	Inspection Frequency	Procedure Number and Inspection Criteria	Inspection Status (Current/ Not Current)	Date of Last Inspection	Proposed Start Date (if Not Current or Equipment Not in Use) ¹	Comments
Fire Extinguishers (Surface)	Emergency Services	Monthly	12-FP0036 Inspecting for Deterioration, Leaks/Spills, Expiration, seals, fullness, and pressure	Current	11/30/15	N/A	
Fire Extinguishers (Underground)	Emergency Services	Monthly	12-FP0036 Inspecting for Deterioration, Leaks/Spills, Expiration, seals, fullness, and pressure	Current	11/30/15	N/A	
Fire Hoses	Emergency Services	Annually (minimum)	12-FP0031 Inspecting for Deterioration and Leaks/Spills	Current	2/28/15	N/A	
Fire Hydrants	Emergency Services	Semiannual/ annually	12-FP0034 Inspecting for Deterioration and Leaks/Spills	Current	3/28/15: (Semiannual) 8/1/15 – 8/6/15: (Annual)	N/A	
Fire Pumps	Emergency Services	Weekly/ annually	WP 12-FP0026 Inspecting for Deterioration, Leaks/Spills, valves, and panel lights	Current	11/23/15	N/A	
Fire Sprinkler Systems	Emergency Services	Monthly/ quarterly	WP 12-FP0025 Inspecting for Deterioration, Leaks/Spills, static pressures, and removable strainers	Current	11/23/15, 11/24/15, 11/25/15,	N/A	
Fire and Emergency Response Trucks (Surface Fire Trucks)	Emergency Services	Weekly	12-FP0033 Inspecting for Mechanical Operability, Deterioration, Leaks/Spills, and Required Equipment	Current	11/27/15, 11/28/15	N/A	

System/Equipment Name	Responsible Organization	Inspection Frequency	Procedure Number and Inspection Criteria	Inspection Status (Current/ Not Current)	Date of Last Inspection	Proposed Start Date (if Not Current or Equipment Not in Use) ¹	Comments
Fire and Emergency Response Trucks (Underground Fire Suppression Vehicles)	Emergency Services	Weekly	12-FP0033 Inspecting for Mechanical Operability, Deterioration, Leaks/Spills, and Required Equipment	Current for two vehicles on site.	11/29/15	12/31/15	There are 8 underground fire suppression vehicles on the equipment list. Weekly inspections have been performed on two vehicles, which are currently in-service. The other underground fire suppression vehicles are pending.
Automatic on-board fire suppression systems	Emergency Services	Semiannual	WP 12-FP0060 Inspecting for Mechanical Operability, Deterioration	Current	9/30/15	N/A	The manual fire suppression systems on certain vehicles, such as waste handling equipment in the underground and on the surface, have been replaced with automatic on-board fire suppression systems.
Hazardous Material Response Equipment	Emergency Services	Weekly	12-FP0033 Inspecting for Mechanical Operability, Deterioration, and Required Equipment	Current	11/24/15	N/A	
Miners First Aid Station	Emergency Services	Quarterly	12-FP0035 Inspecting for Required Equipment	Current	9/30/15	N/A	
Personal Protective Equipment (not otherwise contained in emergency vehicles or issued to individuals): —Self-Contained Breathing Apparatus	Emergency Services	Weekly	12-FP0029 Inspecting for Deterioration and Pressure	Current	11/30/15	N/A	Self-Contained Breathing Apparatuses are currently located on the emergency vehicles and weekly inspections are being performed as related emergency supplies and equipment are updated.

System/Equipment Name	Responsible Organization	Inspection Frequency	Procedure Number and Inspection Criteria	Inspection Status (Current/ Not Current)	Date of Last Inspection	Proposed Start Date (if Not Current or Equipment Not in Use)¹	Comments
Rescue Truck (Surface)	Emergency Services	Weekly	12-FP0030 and 12-FP0033 Inspecting for Mechanical Operability, Deterioration, Leaks/Spills, and Required Equipment	Current	11/26/15	N/A	
Rescue Trucks (Underground)	Emergency Services	Weekly	12-FP0030 and 12-FP0033 Inspecting for Mechanical Operability, Deterioration, Leaks/Spills, and Required Equipment	Not Current for truck on site.	2/8/14	12/31/15	There are two underground rescue trucks on the equipment list, but one is still awaiting arrival to the site. The arrival of the second rescue truck is pending. Because the on-site rescue truck is currently not operating, underground emergency response compensatory measures have been implemented including fire and medical.
Vehicle Siren (Surface Vehicles)	Emergency Services	Weekly	Functional Test included with inspection of the Ambulances, Fire Trucks, and Rescue Trucks	Current	11/26/15, 11/27/15, 11/28/15	N/A	
Vehicle Siren (Underground Vehicles)	Emergency Services	Weekly	Functional Test included with inspection of the Ambulances, Fire Trucks, and Rescue Trucks	Current	11/29/15	N/A	

System/Equipment Name	Responsible Organization	Inspection Frequency	Procedure Number and Inspection Criteria	Inspection Status (Current/ Not Current)	Date of Last Inspection	Proposed Start Date (if Not Current or Equipment Not in Use) ¹	Comments
Adjustable Center of Gravity Lift Fixture	Waste Handling	Preoperational	WP 05-WH1410 Inspecting for Mechanical Operability and Deterioration	Current	11/28/15 (41-T-037) 10/23/14 (41-T-038) 7/10/15 (41-T-032) 4/13/15 (41-T-036)	N/A	
Contact-Handled (CH) TRU Underground Transporter	Waste Handling	Preoperational	WP 05-WH1603 Inspecting for Leaks/Spills, Mechanical Operability, Deterioration, and area around transporter clear of obstacles	Current	7/23/15 (52-H-008A)	N/A	One of three transporters is now in service. This is a pre-operational check needed only prior to use. This transporter is in the uncontaminated area of the mine.
Conveyance Loading Car	Waste Handling	Preoperational	WP 05-1406 Inspecting for Mechanical Operability, Deterioration, path clear of obstacles and guards in the proper place	Current	7/13/15 (41-H-018)	N/A	This is a pre-operational inspection and is not needed for daily operations. Pre-operational inspection performed for training.
Facility Transfer Vehicle	Waste Handling	Preoperational	WP 05-WH1204 Inspecting for Mechanical Operability, Deterioration, path clear of obstacles, and guards in the proper place	Current	7/14/15 (41-H-020A) 7/10/15 (41-H-020B)	N/A	

System/Equipment Name	Responsible Organization	Inspection Frequency	Procedure Number and Inspection Criteria	Inspection Status (Current/ Not Current)	Date of Last Inspection	Proposed Start Date (if Not Current or Equipment Not in Use) ¹	Comments
Forklifts Used for Waste Handling (Electric and Diesel forklifts, Push-Pull Attachment) on Surface	Waste Handling	Preoperational	WP 05-WH1201, WP 05-WH1207, WP 05-WH1401, WP 05-WH1402, WP 05-WH1403, and WP 05-WH1412 Inspecting for Leaks/Spills, Mechanical Operability, Deterioration, and On board fire suppression system	Current	7/09/15 (41-H-009) 7/8/15 (41-H-013) 9/24/15 (41-H-051) 11/28/15 (41-H-012D) 11/24/15 (41-H-012E) 5/23/15 (74-H-010B)	N/A	
Forklifts Used for Waste Handling (Electric and Diesel forklifts, Push-Pull Attachment) in Underground	Waste Handling	Preoperational	WP 05-WH1201, WP 05-WH1207, WP 05-WH1401, WP 05-WH1402, WP 05-WH1403, and WP 05-WH1412 Inspecting for Leaks/Spills, Mechanical Operability, Deterioration, and On board fire suppression system	Current	5/20/15 (52-H-126)	N/A	One 6-ton forklift in the underground is now in service in Panel 7. The inspection was completed as shown as pre-operational. Other forklifts are not in use due to the fire and radiological event.
Surface TRU Mixed Waste Handling Area	Waste Handling	Preoperational or Weekly	WP 05-WH1101 Inspecting for Deterioration, Leaks/Spills, Required Aisle Space, Posted Warnings, Communication Systems, Container Condition, and Floor coating integrity	Current	11/25/15 (Weekly) 11/29/15 (Daily)	N/A	
TRU Mixed Waste Decontamination Equipment	Waste Handling	Annually	WP 05-WH1101 Inspecting for Required Equipment	Current	12/30/14	N/A	Annual 2014 Inspection. This is an annual inspection and not needed for daily operation.

System/Equipment Name	Responsible Organization	Inspection Frequency	Procedure Number and Inspection Criteria	Inspection Status (Current/ Not Current)	Date of Last Inspection	Proposed Start Date (if Not Current or Equipment Not in Use) ¹	Comments
Underground TRU Mixed Waste Disposal Area	Waste Handling	Preoperational	WP 05-WH1810 Inspecting for Deterioration, Leaks/Spills, mine pager phones, equipment, unobstructed access, signs, debris, and ventilation	Current	2/5/14	When waste disposal operations resume	Waste handling operations are suspended therefore preoperational inspections are not being performed.
TDOP Uponder	Waste Handling	Preoperational	WP 05-WH1010 Inspecting for Mechanical Operability and Deterioration	Current	10/9/13	When waste disposal operations resume	No change. This is a pre-operational inspection and is not needed for daily operations.
Waste Handling Cranes	Waste Handling	Preoperational	WP 05-WH1407 Inspecting for Mechanical Operability, Deterioration, and Leaks/Spills	Current	1/6/15 (41-T-151A) 7/7/15 (41-T-151B) 7/23/15 (41-T-151C) 11/28/15 (41-T-151D)	N/A	There are four cranes, but the pre-operational inspections were only performed on the cranes listed. The other crane will be inspected prior to use.
Push-Pull Attachment (Surface)	Waste Handling	Preoperational	WP 05-WH1401 Inspecting for Damage and Deterioration	Current	7/08/15 (41-T-160A) 9/1/15 (41-T-160B)	N/A	
Push-Pull Attachment (Underground)	Waste Handling	Preoperational	WP 05-WH1401 Inspecting for Damage and Deterioration	Current	2/5/14	When waste disposal operations resume	Equipment not in use due to the fire and radiological events. The preoperational inspection was completed for training purposes and in support of preventive maintenance only. Inspection not intended for daily operations.

System/Equipment Name	Responsible Organization	Inspection Frequency	Procedure Number and Inspection Criteria	Inspection Status (Current/ Not Current)	Date of Last Inspection	Proposed Start Date (if Not Current or Equipment Not in Use) ¹	Comments
Trailer Jockey	Waste Handling	Preoperational	WP 05-WH1405 Inspecting for Leaks/Spills, Mechanical Operability and Deterioration	Current	11/25/15 (41-H-151A) 11/14/15 (41-H-151B) 9/27/15 (41-H-046)	N/A	There are three trailer jockeys. Inspections are only performed if the equipment is used on the shift.
Bolting Robot	Waste Handling	Preoperational	WP 05-WH1203 Mechanical Operability	Current	6/29/12	When waste disposal operations resume	Equipment not in use due to the fire and radiological events. The preoperational inspection was completed for training purposes and in support of preventive maintenance only. Inspection not intended for daily operations.
Yard Transfer Vehicle	Waste Handling	Preoperational	WP 05-WH1205 Mechanical Operability, clear of obstacles and Guards in proper place	Current	7/29/14 (41-H-021A) 7/21/15 (41-H-021B)	N/A	
Payload Transfer Station	Waste Handling	Preoperational	WP 05-WH1208 Mechanical Operability, Deterioration, and Guards in proper place	Current	12/16/14 (41-Z-041)	N/A	
Monorail Hoist	Waste Handling	Preoperational	WP 05-WH1202 Mechanical Operability, and Leaks/Spills	Current	8/07/15 (41-H-027)	N/A	
Bolting Station	Waste Handling	Preoperational	WP 05-WH1203 Mechanical Operability, Deterioration, and Guards in proper place	Current	3/23/15 (41-T-053A) (41-T-054A)	N/A	

System/Equipment Name	Responsible Organization	Inspection Frequency	Procedure Number and Inspection Criteria	Inspection Status (Current/ Not Current)	Date of Last Inspection	Proposed Start Date (if Not Current or Equipment Not in Use) ¹	Comments
Backup Power Supply Diesel Generators	Facility Operations	Monthly	WP 04-ED1301 Inspecting for Mechanical Operability and Leaks/Spills by starting and operating both generators. Results of this inspection are logged in accordance with WP 04-AD3008.	Current	11/29/15 (#1) 11/29/15 (#2)	N/A	
Central Monitoring System (CMS)	Facility Operations	Continuous	Automatic Self-Checking	Current	11/29/15	N/A	
Mine Pager Phones (between surface and underground)	Facility Operations	Monthly (see comment)	WP 04-PC3017 Testing of PA and Underground Alarms and Mine Page Phones at essential locations	Current	11/25/15	N/A	Mine pager phones in non-essential locations are not routinely inspected. Many are used in day-to-day operations. They are used until they fail, at which time they are repaired. Mine pager phones are used routinely by Underground Operations.
Mine Pager Phones (underground)	Facility Operations	Monthly (see comment)	WP 04-PC3017 Testing of PA and Underground Alarms and Mine Page Phones at essential locations	Current	11/25/15	N/A	Mine pager phones in non-essential locations are not routinely inspected. Many are used in day-to-day operations. They are used until they fail, at which time they are repaired. Mine pager phones are used routinely by Underground Operations.

System/Equipment Name	Responsible Organization	Inspection Frequency	Procedure Number and Inspection Criteria	Inspection Status (Current/ Not Current)	Date of Last Inspection	Proposed Start Date (if Not Current or Equipment Not in Use) ¹	Comments
Public Address (and Intercom System) on Surface	Facility Operations	Monthly	WP 04-PC3017 Testing of PA and Underground Alarms and Mine Page Phones at essential locations Systems operated in test mode	Current	11/25/15	N/A	
Public Address (and Intercom System) in Underground	Facility Operations	Monthly	WP 04-PC3017 Testing of PA and Underground Alarms and Mine Page Phones at essential locations Systems operated in test mode	Current	11/25/15	N/A	
Radio Equipment	Facility Operations	Daily	Radios are operated daily and are repaired upon failure	Current	11/30/15	N/A	
Uninterruptible Power Supply (Central UPS)	Facility Operations	Daily	WP 04-ED1542 Inspecting for Mechanical Operability and Deterioration with no malfunction alarms. Results of this inspection are logged in accordance with WP 04- AD3008.	Current	11/30/15	N/A	
Water Tank Level	Facility Operations	Daily	SDD-WD00 Inspecting for Deterioration, and water levels. Results of this inspection are logged in accordance with WP 04-AD3008.	Current	11/30/15	N/A	
Facility Inspections (Water Diversion Berms)	Facility Engineering	Annually	WP 10-WC3008 Inspecting for Damage, Impediments to water flow, and Deterioration	Current	9/7/14	N/A	
Eye Wash and Shower Equipment (Surface)	Equipment Custodian	Weekly	WP 12-IS1832 Inspecting for Deterioration	Current	11/23/15-11/25/15	N/A	

System/Equipment Name	Responsible Organization	Inspection Frequency	Procedure Number and Inspection Criteria	Inspection Status (Current/ Not Current)	Date of Last Inspection	Proposed Start Date (if Not Current or Equipment Not in Use) ¹	Comments
Eye Wash and Shower Equipment (Underground)	Equipment Custodian	Weekly	WP 12-IS1832 Inspecting for Deterioration	Current	11/23/15- 11/25/15	N/A	
Perimeter Fence, Gates, Signs	Security	Daily	PF0-008 Inspecting for Deterioration and Posted Warnings	Current	11/30/15	N/A	
Underground—Geomechanical Instrumentation System (GIS)	Geotechnical Engineering	Monthly	WP 07-EU1301 Inspecting for Deterioration	Current	11/24/15	N/A	Complete at accessible areas.
Ventilation Exhaust	Maintenance Operations	Quarterly	IC041098 Check for Deterioration and Calibration of Mine Ventilation Rate Monitoring Equipment	Not Current	41F30703 Fan A (11/9/13) 41F30704 Fan B (5/20/13) 41F30702 Fan C (12/18/13)	No date set because the 700 fans are not used while in filtration mode.	The 700 horsepower fans are not in use because underground ventilation system is operating in filtration mode.

¹ Routine inspections are proposed to begin with resumption of normal operations.

Attachment 2
TRU Mixed Waste Currently in Storage at the WIPP Facility (reserved)
[Last updated June 30, 2015]

Attachment 3 Environmental Monitoring

Attachment 3 contains the following environmental monitoring information:

- VOC Monitoring Map
 - No validated data were available during this reporting period. **[Last update occurred October 31, 2015]**
- Radiological Monitoring Maps & Data
 - Validated biota/fauna sample data



VOC Sampling Locations

No validated data were available during this reporting period

Environmental Monitoring & Hydrology Biota Sampling – Fauna

Tissue Type/Location	Sample ID Number	Sample Date	WIPP Labs Radiochemistry		
			Am-241 (dpm/g)	Pu-238 (dpm/g)	Pu-239/240 (dpm/g)
Biotic Fish/Brantley Lake	BF-BRA-20150918-1.1	9/18/2015	Below MDC	Below MDC	Below MDC

MDCs ranges are:

MDC Am-241 (dpm/g): 2.01E-02 to 5.60E-02

MDC Pu-238 (dpm/g): 1.27E-02 to 2.64E-02

MDC Pu-239/240 (dpm/g): 8.63E-03 to 2.52E-02

Attachment 4
Surface & Underground Derived Waste Currently in Storage at the WIPP Facility (reserved)
[Last updated June 30, 2015]

Attachment 5
Status of RCRA Contingency Plan Required Activities (reserved)
[Last updated September 30, 2015]

Attachment 6
Corrective Actions Required for Recovery (reserved)
[Last updated October 31, 2015]

Attachment 7
Panel 7 & Other Recovery-Related Work



WIPP Underground Safe Haven Unit

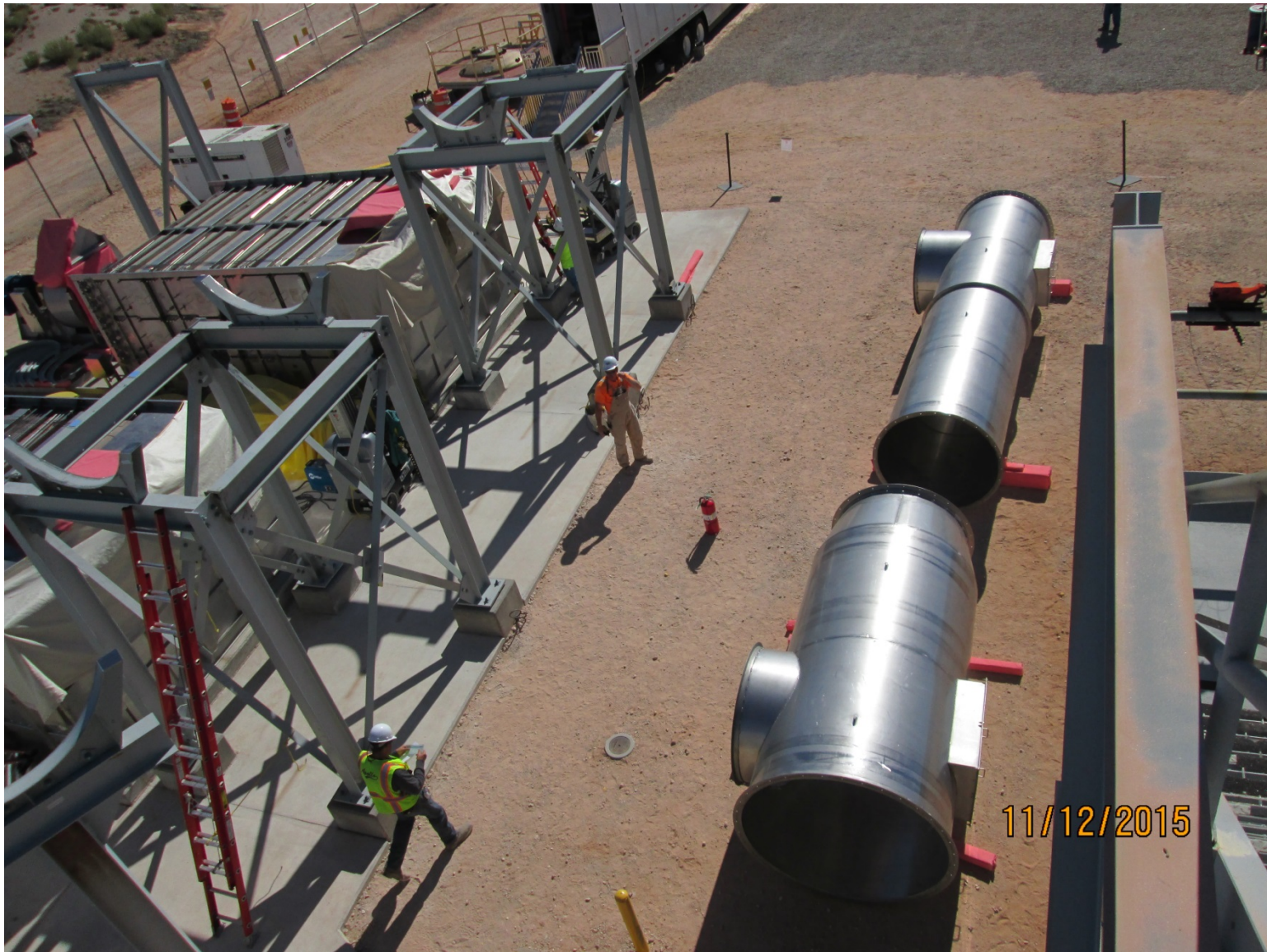


WIPP Underground Safe Haven Unit

Attachment 8
Interim Ventilation System & Supplemental Ventilation System
Equipment and Work Activities



IVS Ductwork Installation Progress



IVS Ductwork Installation Progress

Attachment 9
WIPP Nitrate Salt Bearing Waste Container Isolation Plan
Information Required by Administrative Order 3

#	Container ID#	EPA HWN	Waste Stream	Shipment #	Emplacement Location
1.	LA00000068302	D001	LA-CIN01.001	LA130177	Panel 6, Room 1, Row 52, Column 2, Height B
2.	LA00000068303	D001	LA-CIN01.001	LA130176	Panel 6, Room 1, Row 54, Column 4, Height B
3.	LA00000093842	D001	LA-CIN01.001	LA130110	Panel 6, Room 2, Row 71, Column 5, Height T
4.	LA00000093843	D001	LA-CIN01.001	LA130110	Panel 6, Room 2, Row 71, Column 5, Height T
5.	LA00000093844	D001	LA-CIN01.001	LA130110	Panel 6, Room 2, Row 62, Column 6, Height T
6.	LA00000093846	D001	LA-CIN01.001	LA130134	Panel 6, Room 2, Row 97, Column 3, Height T
7.	LA00000093847	D001	LA-CIN01.001	LA130131	Panel 6, Room 2, Row 91, Column 5, Height M
8.	LA00000093848	D001	LA-CIN01.001	LA130117	Panel 6, Room 2, Row 71, Column 1, Height M
9.	LA00000093859	D001	LA-CIN01.001	LA130125	Panel 6, Room 2, Row 88, Column 6, Height T
10.	LA00000093860	D001	LA-CIN01.001	LA130117	Panel 6, Room 2, Row 71, Column 1, Height M
11.	LA00000093861	D001	LA-CIN01.001	LA130110	Panel 6, Room 2, Row 62, Column 6, Height T
12.	LA00000093866	D001	LA-CIN01.001	LA130111	Panel 6, Room 2, Row 67, Column 3, Height T
13.	LA00000093867	D001	LA-CIN01.001	LA130113	Panel 6, Room 2, Row 67, Column 1, Height T
14.	LA00000093884	D001	LA-CIN01.001	LA130110	Panel 6, Room 2, Row 64, Column 2, Height T
15.	LA00000093885	D001	LA-CIN01.001	LA130132	Panel 6, Room 2, Row 91, Column 3, Height B
16.	LA00000093886	D001	LA-CIN01.001	LA130129	Panel 6, Room 2, Row 89, Column 5, Height B
17.	LA00000093900	D001	LA-CIN01.001	LA130111	Panel 6, Room 2, Row 66, Column 6, Height T
18.	LA00000093902	D001	LA-CIN01.001	LA130130	Panel 6, Room 2, Row 90, Column 4, Height M
19.	LA00000093903	D001	LA-CIN01.001	LA130118	Panel 6, Room 2, Row 74, Column 6, Height T
20.	LA00000093904	D001	LA-CIN01.001	LA130116	Panel 6, Room 2, Row 70, Column 2, Height T
21.	LA00000093906	D001	LA-CIN01.001	LA130136	Panel 6, Room 2, Row 97, Column 3, Height M
22.	LA00000093907	D001	LA-CIN01.001	LA130117	Panel 6, Room 2, Row 71, Column 3, Height B
23.	LA00000093909	D001	LA-CIN01.001	LA130113	Panel 6, Room 2, Row 67, Column 1, Height T
24.	LA00000093945	D001	LA-CIN01.001	LA130129	Panel 6, Room 2, Row 89, Column 5, Height T
25.	LA00000093947	D001	LA-CIN01.001	LA130128	Panel 6, Room 2, Row 90, Column 6, Height T
26.	LA00000093949	D001	LA-CIN01.001	LA130116	Panel 6, Room 2, Row 71, Column 1, Height B
27.	LA00000093962	D001	LA-CIN01.001	LA130119	Panel 6, Room 2, Row 75, Column 1, Height T
28.	LA00000093965	D001	LA-CIN01.001	LA130117	Panel 6, Room 2, Row 71, Column 1, Height M
29.	LA00000093976	D001	LA-CIN01.001	LA130117	Panel 6, Room 2, Row 71, Column 3, Height M

#	Container ID#	EPA HWN	Waste Stream	Shipment #	Emplacement Location
30.	LA00000094005	D001	LA-CIN01.001	LA130119	Panel 6, Room 2, Row 75, Column 1, Height T
31.	LA00000094007	D001	LA-CIN01.001	LA130119	Panel 6, Room 2, Row 75, Column 1, Height T
32.	LA00000094008	D001	LA-CIN01.001	LA130119	Panel 6, Room 2, Row 77, Column 1, Height T
33.	LA00000094011	D001	LA-CIN01.001	LA130132	Panel 6, Room 2, Row 91, Column 3, Height M
34.	LA00000094012	D001	LA-CIN01.001	LA130132	Panel 6, Room 2, Row 91, Column 3, Height M
35.	LA00000094013	D001	LA-CIN01.001	LA130131	Panel 6, Room 2, Row 91, Column 5, Height B
36.	LA00000094014	D001	LA-CIN01.001	LA130119	Panel 6, Room 2, Row 77, Column 1, Height T
37.	LA00000094016	D001	LA-CIN01.001	LA130119	Panel 6, Room 2, Row 77, Column 1, Height T
38.	LA00000094034	D001	LA-CIN01.001	LA130171	Panel 6, Room 1, Row 39, Column 3, Height B
39.	LA00000094036	D001	LA-CIN01.001	LA130131	Panel 6, Room 2, Row 91, Column 5, Height M
40.	LA00000094037	D001	LA-CIN01.001	LA130132	Panel 6, Room 2, Row 93, Column 5, Height M
41.	LA00000094050	D001	LA-CIN01.001	LA130131	Panel 6, Room 2, Row 91, Column 5, Height M
42.	LA00000094051	D001	LA-CIN01.001	LA130133	Panel 6, Room 2, Row 96, Column 2, Height M
43.	LA00000094069	D001	LA-CIN01.001	LA130130	Panel 6, Room 2, Row 91, Column 3, Height T
44.	LA00000094074	D001	LA-CIN01.001	LA130131	Panel 6, Room 2, Row 91, Column 5, Height B
45.	LA00000094075	D001	LA-CIN01.001	LA130132	Panel 6, Room 2, Row 91, Column 3, Height B
46.	LA00000094076	D001	LA-CIN01.001	LA130171	Panel 6, Room 1, Row 39, Column 3, Height B
47.	LA00000094078	D001	LA-CIN01.001	LA130173	Panel 6, Room 1, Row 49, Column 3, Height M
48.	LA00000094079	D001	LA-CIN01.001	LA130130	Panel 6, Room 2, Row 91, Column 3, Height T
49.	LA00000094087	D001	LA-CIN01.001	LA130134	Panel 6, Room 2, Row 97, Column 3, Height T
50.	LA00000094088	D001	LA-CIN01.001	LA130173	Panel 6, Room 1, Row 45, Column 1, Height T
51.	LA00000094142	D001	LA-CIN01.001	LA130150	Panel 6, Room 1, Row 4, Column 4, Height M
52.	LA00000094144	D001	LA-CIN01.001	LA130165	Panel 6, Room 1, Row 32, Column 6, Height B
53.	LA00000094145	D001	LA-CIN01.001	LA130167	Panel 6, Room 1, Row 35, Column 5, Height T
54.	LA00000094146	D001	LA-CIN01.001	LA130173	Panel 6, Room 1, Row 45, Column 1, Height T
55.	LA00000094203	D001	LA-CIN01.001	LA130167	Panel 6, Room 1, Row 33, Column 1, Height B
56.	LA00000094205	D001	LA-CIN01.001	LA130163	Panel 6, Room 1, Row 24, Column 2, Height B
57.	LA00000094206	D001	LA-CIN01.001	LA130163	Panel 6, Room 1, Row 31, Column 5, Height B
58.	LA00000094208	D001	LA-CIN01.001	LA130170	Panel 6, Room 1, Row 44, Column 4, Height B
59.	LA00000094209	D001	LA-CIN01.001	LA130159	Panel 6, Room 1, Row 22, Column 2, Height T
60.	LA00000094210	D001	LA-CIN01.001	LA130163	Panel 6, Room 1, Row 31, Column 5, Height B

#	Container ID#	EPA HWN	Waste Stream	Shipment #	Emplacement Location
61.	LA00000094212	D001	LA-CIN01.001	LA130161	Panel 6, Room 1, Row 23, Column 3, Height T
62.	LA00000094215	D001	LA-CIN01.001	LA130168	Panel 6, Room 1, Row 35, Column 5, Height M
63.	LA00000094217	D001	LA-CIN01.001	LA130163	Panel 6, Room 1, Row 31, Column 5, Height M
64.	LA00000094223	D001	LA-CIN01.001	LA130170	Panel 6, Room 1, Row 44, Column 4, Height B
65.	LA00000094225	D001	LA-CIN01.001	LA130161	Panel 6, Room 1, Row 23, Column 3, Height T
66.	LAS835376	D001	LA-CIN01.001	LA130072	Panel 6, Room 3, Row 143, Column 1, Height B

ATTACHMENT 38
WP 02-PC3005 PERMIT REPORTING 24-HOUR, 5-DAY FOLLOW-UP,
OTHER NONCOMPLIANCES

15 PAGES

WP 02-PC3005

Revision 0

Permit Reporting 24-Hour, 5-Day Follow-Up, Other Noncompliances

Management Control Procedure

EFFECTIVE DATE: 10/21/15

Rick Chavez
APPROVED FOR USE

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ISSUED

WP 02-PC3005

Rev. 0

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CHANGE HISTORY SUMMARY

REVISION NUMBER	DATE ISSUED	DESCRIPTION OF CHANGES
0	10/21/15	<ul style="list-style-type: none">• New procedure.

INTRODUCTION ¹

This procedure establishes actions to be performed to ensure timely notifications and reports are made to the New Mexico Environment Department (NMED) Hazardous Waste Bureau including those required by the Hazardous Waste Facility Permit (Permit) Part 1, Sections 1.7.13 and 1.7.14. These include the following:

- Incidents that require 24-hour, oral notification and 5-day follow-up report when necessary:
 - Any incident that may endanger human health or the environment, including:
 - release of any TRU, TRU mixed, or hazardous waste at the facility
 - underground facility fire
 - surface fire within the facility
 - explosion at the facility
 - releases requiring notification to other agencies other than the NMED Hazardous Waste Bureau
 - Conditions that have the potential for any fire, explosion, or release of any TRU, TRU mixed, or hazardous waste which could threaten facility personnel or the facility or potentially impact human health or the environment outside the facility.
- Other Permit noncompliances

This procedure contains actions for Regulatory Environmental Services (RES) organization to ensure these notifications are made. This procedure provides the criteria used to determine if an incident is reportable to the NMED and how it is to be reported. It was developed in response to Administrative Compliance Order HWB-14-21 Waste Isolation Pilot Plant, December 6, 2014 Violations 2, 8, and 9. This procedure also lists the regulatory sources for the requirements, the contact numbers for required notifications, and identification of the organization making the notification after consultation with the Carlsbad Field Office (CBFO). Some incidents may require additional reporting to other agencies and associated notifications (WP 02-EC3506 *Environmental Incident Reporting*).

Performance of this procedure will generate records related to the incidents covered by this procedure. Records may include documentation of conversations, e-mails documenting oral notifications, and follow-up information including the following records which may be generated as directed by the procedure:

- Incident Determination and Reporting Record (Attachment 1)
- 5-Day Follow-Up Report (Attachment 2)
- Other Noncompliance Report (Attachment 3)

These records are Quality records and are to be maintained in accordance with governing Records Inventory Disposition Schedule.

REFERENCES			
DOCUMENT NUMBER AND TITLE	BASELINE DOCUMENT	REFERENCED DOCUMENT	KEY STEP
40 CFR Part 270.30(l)(6), Twenty-Four Hour Reporting	✓	✓	
40 CFR Part 261, Identification and Listing of Hazardous Waste	✓	✓	
Hazardous Waste Facility Permit, EPA Identification Number NM4890139088-TSDF	✓	✓	1
WP 02-EC3506, <i>Environmental Incident Reporting</i>		✓	
WP 02-RC3112, <i>Stakeholder E-mail Notification System</i>		✓	
WP 12-ER4926, <i>CMR Expanded Staffing Operations</i>		✓	
Administrative Compliance Order HWB-14-21 Waste Isolation Pilot Plant, December 6, 2014		✓	

DEFINITIONS

CBFO Director of Environmental Protection Division – An individual (or designee) assigned to manage the CBFO Environmental Protection Division.

Central Monitoring Room Operator (CMRO) - The on-shift operator responsible for Central Monitoring Room operations, including coordination of facility communications.

Facility - The Waste Isolation Pilot Plant (WIPP) owned by the DOE and located twenty six (26) miles east of Carlsbad, New Mexico, EPA I.D. Number NM4890139088. The WIPP facility comprises the entire complex within the WIPP Site Boundary as specified in the WIPP Land Withdrawal Act of 1992, Pub. L. 102-579 (1992), including all contiguous land, and structures, other appurtenances, and improvements on the Permittees' land, used for management, storage, or disposal of TRU mixed waste. (Permit Part 1, Section 1.5.3)

Hazardous Waste - A hazardous waste as defined by 40 CFR Part 261.3. This waste will exhibit at least one or more of the following characteristics: ignitability, corrosivity, reactivity or toxicity as defined in Part 261, Subpart C, and/or is listed as a hazardous waste in Part 261, Subpart D.

Noncompliance - A violation of a condition in the Permit (Permit Part 1 Section 1.1).

Oral Notification - A spoken, formal report.

Release - Any spilling, leaking, pumping, pouring, emitting (includes emissions from fires), emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment (including abandonment or discarding of barrels, containers, or other closed receptacles) of any TRU, TRU mixed, or hazardous substance.

Report - A report is a written, formal report (attachment 2).

RES Manager - An individual (or designee) assigned to manage the RES organization.

RES Permitting Representative - The Permitting staff member assigned to handle elements of this procedure.

Secretary – Secretary of the New Mexico Environment Department or his/her designee.

TRU Waste - Waste containing more than 100 nanocuries of alpha-emitting transuranic isotopes per gram of waste, with half-lives greater than 20 years, except for (A) high-level radioactive waste; (B) waste that DOE Secretary has determined, with the concurrence of the EPA Administrator, does not need the degree of isolation required by the disposal regulations; or (C) waste that the Nuclear Regulatory Commission has approved for disposal on a case-by-case basis in accordance with Part 61 of Title 10, Code of Federal Regulations. (Public Law 102-579 [1992])

TRU Mixed Waste - TRU waste that is also a hazardous waste as defined by the HWA and 20.4.1.200 NMAC (incorporating 40 CFR Part 261.3).

PERFORMANCE

1.0 PREREQUISITE CONDITIONS

1.1 RES Manager or designee, receives notification of or becomes aware of any of the following:

- Any noncompliance that may endanger human health or the environment, including:
 - Release of TRU, TRU mixed, or hazardous waste at the facility
 - Underground facility fire
 - Surface fire within the facility
 - Explosion at the facility
 - Releases requiring notification to agencies other than the NMED Hazardous Waste Bureau

- Conditions that have the potential for any fire, explosion, or release which could threaten facility personnel or the facility
- Potential or actual noncompliance with a Permit condition

NOTE

The RES Manager may receive notification per WP 12-ER4926 *CMR Expanded Staffing Operations*.

1.2 RES Manager or designee, document the following information in section 1 of attachment 1:

- Date/time notification was received
- Contact information

2.0 NONCOMPLIANCE REQUIRING 24-HOUR, ORAL NOTIFICATION

NOTE

Oral notification must be made to the Secretary within 24 hours from the time the Permittees become aware of the circumstances. This oral notification is made by the Carlsbad Field Office (CBFO) Director of Environmental Protection Division or designee and/or the RES Manager or designee.

At any time, the RES Manager or designee may call in technical representatives (from the RES workgroups) to assist in implementing this procedure.

If NMED personnel are not available, leave a phone message with the relevant information.

- 2.1 RES Manager or designee, document the available pertinent incident information and description (see section 1 of attachment 1 for the list of information to be documented) based on information received in step 1.0.
- 2.2 RES Manager or designee, determine if the incident requires 24-hour, oral notification reporting by completing the checklist items in section 2 of attachment 1 and by referring to the Permit as needed.

NOTE

The NMED **may** be notified of the incident prior to completing attachment 1. This informal notification is made by calling Director, NMED Resource Protection Division at (505) 827-1603 and Bureau Chief, NMED Hazardous Waste Bureau at (505) 476-6035. A notification would then be required within 24 hours of the incident pending completion of attachment 1 to explain to the NMED whether or not the incident met the notification criteria.

- 2.3 RES Manager or designee, **IF** the completed checklist indicates the incident requires 24-hour, oral notification,
THEN GO TO STEP 2.4.
 - 2.3.1 **IF** it does not require 24-hour oral notification,
THEN GO TO STEP 4.0.
 - 2.4 RES Manager or designee, develop the draft notification script (see attachment 1, section 3).
 - 2.5 RES Manager or designee, submit the evaluation/notification script (attachment 1, section 3) to the CBFO Director of Environmental Protection Division or designee for review.
 - 2.6 RES Manager or designee, secure concurrence, if possible, from CBFO Director of Environmental Protection Division and/or designee on 24-hour, oral notification of the incident and on who will make the oral notification to the NMED.
-

NOTE

If the CBFO Director of Environmental Protection Division or designee is not available, then the RES Manager or designee may make the determination of reportability of the incident.

- 2.7 RES Manager or designee, as designated in step 2.3, perform the following for an incident determined to require 24-hour, oral notification to NMED:
 - 2.7.1 Call the CMRO at extension 8111 and inform them that the incident requires 24-hour, oral notification and that RES will coordinate with CBFO to ensure the 24-hour, oral notification to NMED is accomplished. This call may be made before or after the 24-hour, oral notification to the NMED.

2.7.2 Provide the 24-hour, oral notification to NMED or assist the CBFO Director of Environmental Protection Division or designee, as requested, in making and documenting the notification.

2.7.3 **IF** making the notification on behalf of the Permittees, **THEN** record notification on attachment 1, section 4.

2.7.4 Provide the CMRO the applicable information from attachment 1 documenting that the notification has been completed.

3.0 5-DAY FOLLOW-UP REPORT FOR INCIDENTS REQUIRING 24-HOUR, ORAL NOTIFICATION

NOTE

The 5-day follow-up report must be transmitted to the Secretary within 5 calendar days from the time the Permittees become aware of the circumstances.

3.1 RES Manager designate a Permitting Representative, to perform the following:

3.1.1 Prepare a written report to address the requirements in Permit Part 1, Section 1.7.13.3 including the information outlined in attachment 2.

3.2 Permitting Representative, send the written report to the RES Manager for review and submittal.

NOTE

The Secretary or designee may waive the five-day written report requirement in favor of a written report within 15 calendar days if justifiable cause is provided in advance. [Permit Part 1, Section 1.7.13.3]

3.3 RES Manager or designee, perform the following:

3.3.1 Submit written report to CBFO to meet the required time frame.

3.3.2 Confirm the 5-day follow-up report has been sent to NMED.

3.3.3 Confirm a link is posted to the written report transmittal letter on the WIPP Home Page and inform those on the e-mail notification list in accordance with WP 02-RC3112, *Stakeholder E-mail Notification System*.

4.0 OTHER PERMIT NONCOMPLIANCES

4.1 RES Permitting Representative, upon receiving notification of or becomes aware of a noncompliance, perform the following:

4.1.1 Complete the noncompliance report (see attachment 3).

4.1.2 **IF** the noncompliance has or could potentially endanger human health or the facility or the environment,
THEN notify the RES Manager or designee immediately and return to step 2.0.

4.1.3 RES Permitting Representative, for noncompliances not requiring 24-hour, oral notification, perform the following:

- Provide the noncompliance report (see attachment 4) to the RES Manager or designee for review.
- Incorporate comments from the review, if necessary.
- Place the final noncompliance report on the RES Permitting network folder (\\\\arrey\\RES_Permitting\\Noncompliance Reports).
- Notify the personnel responsible for the annual VOC monitoring report required by Permit Part 1, Section 1.7.14 and other applicable RES personnel that a copy of the final noncompliance report is available on the RES Permitting network folder. Note that these Permit noncompliance(s) will be described in the October Semi-Annual VOC, Hydrogen, and Methane Data Summary Report.

Attachment 1 - Example Incident Determination and Reporting Worksheet

SECTION 1 – EXAMPLE INCIDENT DESCRIPTION

Date/Time Received by RES:	
Notified by:	

1.	Permittees Name:	United States Department of Energy, the owner and operator of the WIPP facility, and Nuclear Waste Partnership LLC, co-operator of the WIPP facility
	Permittees Address:	P.O. Box 3090, Carlsbad, NM 88221
	Permittees Telephone Number:	(575) 234-7300
2.	Facility Name:	Waste Isolation Pilot Plant
	Facility Address:	30 miles east of Carlsbad on Jal Highway, Carlsbad NM 88220
	Facility Telephone Number:	(575) 234-7300
3.	Incident Date:	
	Incident Time:	
	Incident Type (spill, release, fire, explosion, radiological, etc.):	
4.	Name of materials involved: Quantity of materials involved:	
5.	The extent of injuries, if any:	
6.	An assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable:	
7.	Estimated quantity and disposition of recovered material that resulted from the incident:	
8.	Comments/Additional Information:	

Attachment 1 - Example Incident Determination and Reporting Worksheet

**SECTION 2 – EXAMPLE PERMIT 24-HOUR, ORAL NOTIFICATION
DETERMINATION MATRIX**

#	Yes/No	Criterion	Explanation
1		Does the incident potentially endanger human health or the environment? (Permit Part 1, Section 1.7.13.1)	
2		Has there been a release of any TRU mixed or hazardous waste that may cause an endangerment to public drinking water supplies? (Permit Part 1, Section 1.7.13.1.i)	
3		Has there been a discharge of TRU mixed or hazardous waste, or of a fire or explosion from the facility, which could threaten the environment or human health <u>outside</u> the facility? (Permit Part 1, Section 1.7.13.1.ii)	
4*		Is the incident one of the following: <ul style="list-style-type: none"> • Facility radiological release • Underground facility fire • Surface fire within the facility • Explosion at the facility • Conditions that have the potential for any fire, explosion, or release of any TRU, TRU mixed, or hazardous waste which could threaten facility personnel or the facility or potentially impact human health or the environment outside the facility 	
<p>If the answer to any question is yes, this is an incident requiring 24-hour, oral notification to NMED.</p> <p>*This criterion is not specifically included in Permit Part 1 Sections 1.7.13.1, however this criterion require 24–hour, oral notification as agreed upon with the NMED. Changes to criterion 4 require consultation with the NMED.</p>			

RES Manager:

Print Name

Signature

Date

Attachment 1 - Example Incident Determination and Reporting Worksheet

SECTION 3 - EXAMPLE (24-HOUR, ORAL NOTIFICATION) SCRIPT

The Permittees are notifying the Secretary of the New Mexico Environment Department that there has been a [state incident] at the WIPP facility that results in the need for 24-hour, oral notification. We are providing the information required by Permit Part 1, Section 1.7.13:

1. Name, address, and telephone number of the owner or operator; (see section 1 of attachment 1, number 1)
2. Name, address, and telephone number of the facility; (section 1 of attachment 1, number 2)
3. Date, time, and type of incident; (see section 1 of attachment 1, number 3)
4. Name and quantity of material(s) involved; (see section 1 of attachment 1, number 4)
5. The extent of injuries, if any; (see section 1 of attachment 1, number 5)
6. An assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable; (section 1 of attachment 1, number 6) and
7. Estimated quantity and disposition of recovered material that resulted from the incident. (section 1 of attachment 1, number 7)

SECTION 4 - NOTIFICATION RECORD

Date/Time Contacted

Person Contacted

New Mexico Department of Public Safety during non-business hours for incidents specifically required by the Permit Part 1, Section 1.7.13.1

Telephone:	(505) 827-9329		
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NMED; Director Resource Protection Division

Telephone:	(505) 827-1603		
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NMED; Chief Hazardous Waste Bureau

Telephone:	(505) 476-6035 or (505) 476-6000		
------------	--	--	--

Attachment 2 - Example 5-Day Follow-Up Report Letter

This letter is an example only, subject to change as required to report individual conditions that have occurred.

Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

Subject: 5-Day Follow-Up Report as required by Permit Part 1, Section 1.7.13.1

This letter is to provide a follow-up report that a condition, as described in the Hazardous Waste Facility Permit, Part 1, Section 1.7.13, has occurred or is expected to occur. As required by Permit Part 1, Section 1.7.13.3 the following information is being reported to your office to the extent practicable:

- *Name, address, and telephone number of the owner or operator;*
- *Name, address, and telephone number of the facility;*
- *Date, time, and type of incident;*
- *Name and quantity of material(s) involved;*
- *The extent of injuries, if any;*
- *An assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable; and*
- *Estimated quantity and disposition of recovered material that resulted from the incident.*
- *A description of the noncompliance and its cause;*
- *The period(s) of the noncompliance including exact dates and times and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and*
- *Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.*

Please contact [CBFO contact name and phone number] if you require further information.

We certify under penalty of law that this document and all attachments were prepared under our direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on our inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of our knowledge and belief, true, accurate, and complete. We are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

Manager
Department of Energy

Project Manager
Nuclear Waste Partnership LLC

Attachment 3 – Example Other Noncompliance Report

SECTION 1 – EXAMPLE OTHER NONCOMPLIANCE REPORT

Noncompliance Date(s):	
Noncompliance Description:	
Affected Permit Part(s)/Section(s) and/or Attachment(s)/Section(s):	
Additional pertinent information, as needed (e.g., resolution to noncompliance):.	

RES Manager:

Print Name

Signature

Date

ATTACHMENT 39
WP 12-ER4925 CMR INCIDENT RECOGNITION AND INITIAL
RESPONSE

41 PAGES

WP 12-ER4925

Revision 1

CMR Incident Recognition and Initial Response

Emergency Operating Procedure

EFFECTIVE DATE: 10/08/15

David Stuhan
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Signature:
Date and Time:

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CHANGE HISTORY SUMMARY

REVISION NUMBER	DATE ISSUED	DESCRIPTION OF CHANGES
0	06/05/15	<ul style="list-style-type: none">• New emergency operating procedure for the initial incident recognition and response in the CMR.
1	10/08/15	<ul style="list-style-type: none">• Updated EA• Added note defining emergency response personnel• Added additional steps for notifying FD and ERT• Revised entry conditions• Added entry conditions for hazardous materials spills and security incidents

REFERENCES

DOCUMENT NUMBER AND TITLE	BASELINE DOCUMENT	REFERENCED DOCUMENT
DOE Order 151.1C, <i>Comprehensive Emergency Management System</i>	✓	
Hazardous Waste Facility Permit, EPA Identification Number NM4890139088-TSDF	✓	
WP 04-CM1301, <i>Public Address System Console Operation.</i>	✓	
WP 12-9, <i>Emergency Management Plan</i>	✓	
WP 12-ER3002, <i>Emergency Operations Center Activation and Operations.</i>	✓	
EA12ER4925-1-0, <i>CMR Incident Information Checklist</i>		✓
EA12ER4925-2-0, <i>Telephone Bomb Threat Checklist</i>		✓
EA12ER4925-3-0, <i>CMR Initial Response Actions</i>		✓
EA12ER4925-4-0, <i>Offsite Contact Information</i>		✓
EA12ER4925-5-0, <i>Call Taking Checklist</i>		✓
PROD-439, <i>General Hazard Analysis</i>	✓	

1.0 ENTRY CONDITIONS

1.1 Central Monitoring Room Operator (CMRO) receives notification of any of the following events:

- Suspected or actual breach of a waste container
- Failure of shielding of a waste container
- Station B CAM Alpha HI or Alpha HI-HI
- Station B direct frisk of fixed air sampler (FAS) filter is > 2 times background from the Station B portable air sampler filter
- Other incident involving radiological material
- Thunderstorm with lightning, within 10 miles of the site, that is tracking toward the Property Protection Area (PPA)
- Severe weather within 10 miles of the WIPP Site (e.g., severe thunderstorm that is tracking toward the PPA, torrential rain, hail, blizzard, flash flood, sustaining winds >40 MPH, wind gusts > 50 MPH, tornado warning)
- Hazardous materials spill/release
- Onsite security event
- A reported security incident at Waste Control Specialists, LLC (WCS) or any other facility under NWP contract with a security interest
- Fire or fire alarm
- Any other event recognized by CMRO as actual or potential emergency

2.0 AUTOMATIC ACTIONS

2.1 None

3.0 IMMEDIATE ACTIONS

NOTE

Only applicable sections of EA12ER4925-1-0, *CMR Incident Information Checklist*, applicable to the reported event, need to be filled out.

- 3.1 **RECORD** incident information in “Initial Information” section of EA12ER4925-1-0.
- 3.2 **IF** the incident is outside the Land Withdrawal Area (LWA), and not on the north or south access road,
AND the caller has NOT called 911,
THEN INSTRUCT the caller to hang up and call 911
OR CONFERENCE CALL 911 with the caller.
- 3.3 **DETERMINE** the type of incident and **RECORD** in EA12ER4925-1-0.
- 3.4 **IF** the incident is a Bomb threat,
THEN RECORD caller information, applicable to the reported incident in EA12ER4925-2-0,
AND RETURN TO step 3.6 of this procedure when actions are complete.
- 3.5 **IF** the incident is reported as any of the following:
- Medical incident
 - Suspicious package
 - Offsite incident
- THEN RECORD** caller information, applicable to the reported incident in EA12ER4925-5-0,
AND RETURN TO step 3.6 of this procedure when actions are complete.

NOTE

Announcements apply to nonemergency personnel only. Emergency personnel are pre-identified members of the Emergency Response Organization (Central Monitoring Room Staff, FSM, Fire Department Staff, Protective Force Staff, Hoist Operators, RadCon emergency responders, Mine Rescue Team (MRT), and EOC Staff listed as on-call on the watch bill). Emergency personnel may take initial protective actions based on announcements, but have the discretion to respond according to their training.

3.6 **PERFORM** the initial response actions for the specific event type **AND RETURN TO** section 4.0 of this procedure when actions are complete.

3.6.1 **IF** the public address system is NOT operable, **THEN NOTIFY** the following to perform manual notifications to affected areas:

- Incident Commander for surface areas
- Underground Facility Engineer for underground areas

3.6.2 **IF** Fire Department has NOT responded, **THEN**, using the portable radio system, **REPEAT** the call.

3.6.3 **IF** the ERT has NOT responded, **THEN**, using the site paging system, **CALL** 8850 and **ENTER** pager number 555.

4.0 SUBSEQUENT ACTIONS

NOTE

Subsequent actions can be performed in any order.

4.1 **PROVIDE** incident briefing to Facility Shift Manager upon his or her arrival in the CMR.

4.2 **IF** an Incident Commander (IC) has been established, **THEN SUPPORT** IC requests.

4.2.1 **IF** offsite assistance is requested, **THEN REQUEST** offsite agency support using EA12ER4925-4-0, *Offsite Contact Information*.

4.2.2 **IF** the Public Address System is down,
THEN MAKE protective action notifications using email,
AND/OR CONTACT the Communications Department to send a
Site-wide protective action message.

4.3 **COMPLETE** sections of EA12ER4925-1-0 that pertain to the incident.

5.0 EXIT CONDITIONS

5.1 **IF** the following conditions have been confirmed,
THEN EXIT this procedure:

- Incident or alarm or condition has been verified as a false indication and there is no impact to worker health and safety.

OR

- FSM has assumed responsibility for CMR Expanded Staffing Operations

AND

All actions in 12-ER4925 have been completed.

CMR Incident Information Checklist

Initial Information				
Call Date:			Call Time:	
Is this an EMERGENCY? <input type="checkbox"/> Yes <input type="checkbox"/> No			Has 911 been called? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Caller Name/Agency:		Call Back #:		Caller Location:
Incident Location: <input type="checkbox"/> Onsite <input type="checkbox"/> Offsite	<input type="checkbox"/> WIPP - Surface			<input type="checkbox"/> WIPP - Underground
	Bldg #:	Floor #:	Office #:	Location:
	<input type="checkbox"/> SWB <input type="checkbox"/> Cascades <input type="checkbox"/> Records Center			<input type="checkbox"/> Other Location:
	Floor #:		Office #:	
Nature of Emergency/Event:				
Incident Type				
<input type="checkbox"/> Radiological <input type="checkbox"/> Fire <input type="checkbox"/> Natural Phenomena <input type="checkbox"/> Security <input type="checkbox"/> Chemical <input type="checkbox"/> Medical <input type="checkbox"/> Earthquake <input type="checkbox"/> Offsite Response <input type="checkbox"/> Other (e.g., motor vehicle accident):				
Meteorological Data				
Precipitation: <input type="checkbox"/> No <input type="checkbox"/> Yes		Wind direction from (degrees):		Wind Speed (mph):
Abnormal Condition Type				
<input type="checkbox"/> Water Leak <input type="checkbox"/> Compressed Air <input type="checkbox"/> Power Outage <input type="checkbox"/> Telecommunications <input type="checkbox"/> Other:				
Nonemergency Alarm Type				
<input type="checkbox"/> HVAC <input type="checkbox"/> UVFS <input type="checkbox"/> Compressed Air System <input type="checkbox"/> Surface Seismic <input type="checkbox"/> Diesel Generator <input type="checkbox"/> Pump House <input type="checkbox"/> High Precipitation <input type="checkbox"/> Cam Low Or High Flow <input type="checkbox"/> Cam Malfunction <input type="checkbox"/> Other:				
FSM Briefing				
Time Completed:				

Telephone Bomb Threat Checklist

INSTRUCTIONS: Be calm, be courteous, and listen. Do NOT interrupt the caller. Notify supervisor/Protective Force by prearranged signal while caller is on the line.

Call Received By:	Phone #:	Call Date:	Call Time:	
Description of Caller				
Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female		Approximate Age: <input type="checkbox"/> Adult <input type="checkbox"/> Juvenile		
Origin of Call				
<input type="checkbox"/> Local	<input type="checkbox"/> Long Distance	<input type="checkbox"/> Phone Booth	<input type="checkbox"/> Internal	
Actions				
Pretend difficulty with hearing.		Keep the caller talking.		
IF caller seems agreeable to further conversation, THEN ask questions including:				
1.	How many bombs are there?			
2.	When will bomb go off?			
3.	Where is the bomb?			
4.	What does the bomb look like?			
5.	What will cause the bomb to explode?			
6.	Did you place the bomb?			
7.	Why?			
8.	What is your name?			
9.	Where do you live?			
10.	What is your phone number?			
Call Description				
Voice Characteristics	Speech	Accent	Manner	Background Noise
<input type="checkbox"/> Loud	<input type="checkbox"/> Fast	<input type="checkbox"/> Local	<input type="checkbox"/> Calm	<input type="checkbox"/> Factory Machines
<input type="checkbox"/> High Pitched	<input type="checkbox"/> Distinct	<input type="checkbox"/> Foreign	<input type="checkbox"/> Rational	<input type="checkbox"/> Bedlam
<input type="checkbox"/> Raspy	<input type="checkbox"/> Stutter	<input type="checkbox"/> Race	<input type="checkbox"/> Coherent	<input type="checkbox"/> Music
<input type="checkbox"/> Intoxicated	<input type="checkbox"/> Slurred	<input type="checkbox"/> Not Local	<input type="checkbox"/> Deliberate	<input type="checkbox"/> Office Machines
<input type="checkbox"/> Soft	<input type="checkbox"/> Slow	<input type="checkbox"/> Region	<input type="checkbox"/> Righteous	<input type="checkbox"/> Mixed
<input type="checkbox"/> Deep	<input type="checkbox"/> Distorted	Language	<input type="checkbox"/> Angry	<input type="checkbox"/> Street Traffic
<input type="checkbox"/> Pleasant	<input type="checkbox"/> Nasal	<input type="checkbox"/> Excellent	<input type="checkbox"/> Irrational	<input type="checkbox"/> Trains
<input type="checkbox"/> Other	<input type="checkbox"/> Lisp	<input type="checkbox"/> Fair	<input type="checkbox"/> Incoherent	<input type="checkbox"/> Animals
	<input type="checkbox"/> Other	<input type="checkbox"/> Foul	<input type="checkbox"/> Emotional	<input type="checkbox"/> Quiet
		<input type="checkbox"/> Good	<input type="checkbox"/> Laughing	<input type="checkbox"/> Voices
		<input type="checkbox"/> Poor		<input type="checkbox"/> Airplanes
		<input type="checkbox"/> Other		<input type="checkbox"/> Party Atmosphere
				<input type="checkbox"/> Other

ISSUED

Telephone Bomb Threat Checklist

Additional Information		
Signatures		
Completed By:	Signature:	Date:
Verified By:	Signature:	Date:

EA12ER4925-3-0

Revision 1

CMR Initial Response Actions

Electronic Attachment

NOTE

- Only perform those initial response actions and announcements that are specific to the incident.
 - Names of victims or other affected individuals are NOT to be broadcast on the Public Address System, Site Paging System, or portable radios. Names of victims or other affected individuals may be relayed to the Facility Shift Manager (FSM), Incident Commander (IC), EOC Crisis Manager, or Human Resources representative by a secure means, such as telephone or cell phone.
 - Announcements apply to nonemergency personnel only. Emergency personnel are pre-identified members of the Emergency Response Organization (Central Monitoring Room Staff, FSM, Fire Department Staff, Protective Force Staff, Hoist Operators, RadCon emergency responders, Mine Rescue Team (MRT), and EOC Staff listed as on call on the watch bill). Emergency personnel may take initial protective actions based on announcements, but have the discretion to respond according to their training.
-

CMR Initial Response Actions

RADIOLOGICAL INCIDENT - UNDERGROUND

1. **OBTAIN** meteorological data.
2. **SOUND** EVAC Alarm, **ACTIVATE** underground strobe lights, and **MAKE** the following announcement:
 - **MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT).**
 - There is a radiological incident in the underground at (specify location).
 - Suspend all site activities.
 - Underground personnel report to the egress hoist stations for evacuation.
 - Underground Services contact CMR.
 - Activate the Fire Department, RadCon, and Operations Assistance Team.
 - Personnel on the surface Remain Indoors and wait for further instructions.
 - (REPEAT MESSAGE)
3. **PLACE** the Heating, Ventilation, and Air Conditioning (HVAC) for the WHB in ONCE-THRU flow operation.
4. **SECURE** ventilation Zones 1 through 5 in Building 451.
5. **SHIFT** Zone 6 HVAC in Building 451 to filtration.

CMR Initial Response Actions

RADIOLOGICAL INCIDENT - WASTE HANDLING BUILDING

1. **OBTAIN** meteorological data.
2. **SOUND** INTRO Alarm and **MAKE** the following announcement:
 - **MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT).**
 - There is a radiological incident in the (specify location).
 - Suspend all site activities.
 - All nonemergency personnel in the Waist Hoist Tower evacuate to Airlock 114.
 - All other personnel located in the Waste Handling Building evacuate to nearest accessible airlock and wait for RadCon direction.
 - All surface personnel shelter in place.
 - Underground personnel report to your underground assembly area and wait for further instructions.
 - Activate the Fire Department, RadCon, and Operations Assistance Team.
 - (REPEAT MESSAGE)
3. **PLACE** the Heating, Ventilation, and Air Conditioning (HVAC) for the WHB in ONCE-THRU flow operation.
4. **SECURE** ventilation Zones 1 through 5 in Building 451.
5. **SHIFT** Zone 6 HVAC in Building 451 to filtration.

CMR Initial Response Actions

(\$)
RADIOLOGICAL INCIDENT:
STATION B CAM ALPHA HI OR ALPHA HI-HI ALARM
OR
DIRECT FRISK OF FIXED AIR SAMPLER (FAS) FILTER THAT IS >2 TIMES
BACKGROUND (ALPHA) FROM THE STATION B PORTABLE AIR SAMPLE
FILTER
[ESS-2014-01]

1. **(\$) VERIFY** THAT THE UVS IS IN FILTRATION MODE AND UNDERGROUND HIGH EFFICIENCY PARTICULATE AIR (HEPA) DIFFERENTIAL PRESSURES (DPS) ARE NORMAL. **[ESS-2014-01]**
2. **OBTAIN** meteorological data.
3. **(\$) SOUND** INTRO Alarm and **MAKE** the following announcement:
 - **MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT).**
 - There is radiological incident and Station B CAM is in an alarm condition.
 - Suspend all site activities.
 - All nonessential personnel in the Waist Hoist Tower evacuate to Airlock 114.
 - All surface personnel shelter in place.
 - Underground personnel report to your underground assembly area and wait for further instructions.
 - Underground Services contact Central Monitoring Room.
 - Activate the Fire Department, RadCon, and Operations Assistance Team.
 - (REPEAT MESSAGE) **[ESS-2014-01]**
4. **(\$) GO TO** EA12ER4926-3-0, Emergency Operations Center Activation, **AND RETURN TO** step 5. **[ESS-2014-01]**
5. **PLACE** the Heating, Ventilation, and Air Conditioning (HVAC) for the WHB in ONCE-THRU flow operation.
6. **SECURE** ventilation Zones 1 through 5 in Building 451.
7. **SHIFT** Zone 6 HVAC in Building 451 to filtration.

CMR Initial Response Actions

OTHER RADIOLOGICAL INCIDENT - SURFACE

1. **OBTAIN** meteorological data.
2. **SOUND** INTRO Alarm and **MAKE** the following announcement:
 - **MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT).**
 - There is an incident involving radiological materials at (specify location).
 - Suspend all site activities.
 - All surface personnel shelter in place.
 - Underground personnel report to your underground assembly area and wait for further instructions.
 - Underground Services contact Central Monitoring Room.
 - Activate the Fire Department, RadCon, and Operations Assistance Team.
 - (REPEAT MESSAGE)
3. **PLACE** the Heating, Ventilation, and Air Conditioning (HVAC) for the WHB in ONCE-THRU flow operation.
4. **SECURE** ventilation Zones 1 through 5 in Building 451.
5. **SHIFT** Zone 6 HVAC in Building 451 to filtration.

CMR Initial Response Actions

CHEMICAL INCIDENT - UNDERGROUND

1. **VERIFY** that the High Efficiency Particulate Air (HEPA) differential pressures (DPs) are normal.
2. **OBTAIN** meteorological data.
3. **SOUND** INTRO Alarm and **MAKE** the following announcement:
 - **MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT).**
 - There is a chemical incident at (specify location).
 - All personnel remain clear and upwind of the (specify location).
 - Activate the Fire Department and Operations Assistance Team.
 - (REPEAT MESSAGE)
4. **PLACE** the Heating, Ventilation, and Air Conditioning (HVAC) for the WHB in ONCE-THRU flow operation.

CMR Initial Response Actions

CHEMICAL INCIDENT - SURFACE

1. **OBTAIN** meteorological data.
2. **SOUND** INTRO Alarm and **MAKE** the following announcement:
 - **MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT).**
 - There is a chemical incident at (specify location).
 - All personnel remain clear and upwind of the (specify location).
 - Wind is from the (specify direction).
 - Activate the Fire Department and Operations Assistance Team.
 - (REPEAT MESSAGE)
3. **PLACE** the Heating, Ventilation, and Air Conditioning (HVAC) for the WHB in ONCE-THRU flow operation.
4. **SECURE** all ventilation (Zones 1 – 6).

CMR Initial Response Actions

MEDICAL INCIDENT - UNDERGROUND

1. **IF** medical calls where the mechanism of injury is due to electrical shock, **AND** either of the following conditions exists:

- The victim is not clear of the source of the shock
- It is uncertain whether the victim is clear of the source of the shock

THEN IMMEDIATELY ISOLATE electrical power to the affected area by opening the applicable plant substation circuit breakers (CB-2 and CB-5).

2. **SOUND** INTRO Alarm and **MAKE** the following announcement:

- **MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT).**
- There is a medical emergency in/at (specify area/location).
- All personnel remain clear of area.
- Activate the Fire Department.
- Underground Services contact the Central Monitoring Room.
- (REPEAT MESSAGE)

CMR Initial Response Actions**MEDICAL INCIDENT - SURFACE**

1. **IF** medical calls where the mechanism of injury is due to electrical shock, **AND** either of the following conditions exists:

- The victim is not clear of the source of the shock
- It is uncertain whether the victim is clear of the source of the shock

THEN IMMEDIATELY ISOLATE electrical power to the affected area by opening the applicable plant substation circuit breakers or the Utility Substation main feeder circuit breakers (CB-3340 and CB-3355).

2. **SOUND** INTRO Alarm and **MAKE** the following announcement:

- **MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT).**
- There is a medical emergency in/at (specify area/location).
- All personnel remain clear of area.
- Activate the Fire Department.
- (REPEAT MESSAGE)

CMR Initial Response Actions

FIRE OR FIRE ALARM INCIDENT - UNDERGROUND

1. **SOUND** EVAC Alarm, **ACTIVATE** underground strobe lights, and **MAKE** the following announcement:
 - **MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT).**
 - There is a (Fire alarm OR Fire) in/at (specify building/area).
 - Underground personnel in smoke, don self-rescuer or self-contained self-rescuer.
 - All underground personnel report to egress hoist stations for evacuation.
 - Activate the Fire Department, Operations Assistance Team, and Mine Rescue Team.
 - Underground Services contact Central Monitoring Room.
 - (REPEAT MESSAGE)

CMR Initial Response Actions

FIRE OR FIRE ALARM – BUILDING(S) INSIDE PPA

1. **OBTAIN** meteorological data.
2. **SOUND** INTRO Alarm and **MAKE** the following announcement:
 - **MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT).**
 - There is a (Fire alarm OR Fire) in/at (specify building/area).
 - All (specify building/area) personnel evacuate to the Assembly Area (name the assembly area selected).
 - Personnel remain clear of the (specify building/area).
 - Activate the Fire Department and Operations Assistance Team.
 - (REPEAT MESSAGE)
3. **MONITOR** fire water tank level and fire system status on PUMPHOUSE SYSTEM graphic.
4. **IF** the fire water tank level is decreasing,
THEN DIRECT Facility Operations personnel to fill tanks.

CMR Initial Response Actions

FIRE - OUTSIDE PPA

1. **OBTAIN** meteorological data.
2. **SOUND** INTRO Alarm and **MAKE** the following announcement:
 - **MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT).**
 - There is a (Fire) at (specify area).
 - Personnel remain clear of the (specify area).
 - Activate the Fire Department and Operations Assistance Team.
 - (REPEAT MESSAGE)
3. **MONITOR** fire water tank level and fire system status on PUMPHOUSE SYSTEM graphic.
4. **IF** the fire water tank level is decreasing,
THEN DIRECT Facility Operations personnel to fill tanks.

CMR Initial Response Actions

FIRE OR FIRE ALARM - BUILDING 451

1. **OBTAIN** meteorological data.
2. **SOUND** EVAC Alarm and **MAKE** the following announcement:
 - **MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT).**
 - There is a (fire or fire alarm) in Building 451.
 - All Building 451 personnel evacuate to the Assembly Area (name the assembly area selected and safe evacuation route).
 - Personnel remain clear of Building 451.
 - All underground personnel, report to egress hoist stations and begin orderly withdrawal from the underground.
 - Activate the Fire Department and Operations Assistance Team.
 - (REPEAT MESSAGE)
3. **FORWARD** calls to the SOC at 234-6066.
4. **EVACUATE** the CMR with CMR narrative logbook and portable radio.
5. **NOTIFY** Incident Commander that you are unable to make Public Address System announcements.
6. **NOTIFY** the SOC that the CMR has forwarded all calls to the SOC.
7. **REPORT** to the Alternate CMR in the Security Operations Center in the Guard and Security Building.
8. **RESUME** Central Monitoring System operations in the Alternate CMR.
9. **DIRECT** Facility Operations personnel to **VERIFY** fire water tank level and fill as necessary.

CMR Initial Response Actions

SMOKE FROM SURFACE FIRE TRAVELING TOWARD AIR INTAKE OR SALT HANDLING SHAFTS OR THE AUXILIARY AIR INTAKE TUNNEL

1. **OBTAIN** meteorological data.
2. **SOUND** EVAC Alarm, **ACTIVATE** underground strobe lights, and **MAKE** the following announcement:
 - **MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT).**
 - There is a fire in/at (specify building/area).
 - Underground personnel, in smoke, don self-rescuer or self-contained self-rescuer.
 - Personnel remain clear of the (specify building/area).
 - All underground personnel report to (specify hoist station) for evacuation.
 - Activate the Mine Rescue Team.
 - Underground Services contact Central Monitoring Room.
 - (REPEAT MESSAGE)

CMR Initial Response Actions

LIGHTNING

1. **OBTAIN** meteorological data.
2. NOTIFY FSM.
3. **IF** requested by FSM,
THEN SOUND INTRO Alarm and **MAKE** the following announcement:
 - **MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT)**
 - Lightning warnings are in affect at the WIPP Site.
 - All personnel remain indoors.
 - Underground personnel report to designated assembly areas.
 - Underground Facility Engineer contact CMR.
 - (REPEAT MESSAGE)
4. **ADVISE** all incoming TRU Waste carriers of severe weather.

CMR Initial Response Actions

SEVERE WEATHER INCIDENT

1. **OBTAIN** meteorological data.
2. NOTIFY FSM.
3. **IF** requested by FSM,
THEN SOUND INTRO Alarm and **MAKE** the following announcement:
 - **MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT)**
 - (Weather condition) is in effect.
 - All personnel stop work and move into the nearest permanent building.
 - Personnel in permanent buildings remain indoors until further notice.
 - Personnel vacate rooms with windows and outside walls.
 - Underground personnel report to designated assembly areas.
 - Underground Services personnel report to S-550 office area.
 - (REPEAT MESSAGE)
4. **ADVISE** all incoming TRU Waste carriers of severe weather.

CMR Initial Response Actions

SEISMIC INCIDENT

1. **SOUND** INTRO Alarm and **MAKE** the following announcement:
 - **MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT).**
 - A seismic event has occurred in an area affecting the WIPP Site.
 - Suspend all site operations.
 - Activate the Fire Department, Operations Assistance Team, and Mine Rescue Team.
 - (REPEAT MESSAGE)

CMR Initial Response Actions

ACTIVE SHOOTER INCIDENT

1. **SOUND** INTRO Alarm and **MAKE** the following announcement:
 - **MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT).**
 - There is an active aggressor (description and weapon type, if known) located in/near (specify location).
 - All personnel self-barricade immediately and wait for further instructions.
 - (REPEAT MESSAGE)
2. **CONTACT** the Security Operations Center or Protective Force by telephone.

CMR Initial Response Actions

SUSPICIOUS PACKAGE - BUILDING 451

1. **CONTACT** Protective Force and **IDENTIFY** safe evacuation route and assembly area.
2. **SOUND** INTRO Alarm and **MAKE** the following announcement:
 - **MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT).**
 - There is a security incident in Building 451.
 - All Building 451 personnel evacuate to the Assembly Area (name the identified assembly area and safe evacuation route).
 - All other personnel remain indoors.
 - All underground personnel, report to egress hoist stations and begin orderly withdrawal from the underground.
 - (REPEAT MESSAGE)
3. **FORWARD** calls to the SOC at 234-6066.
4. **EVACUATE** the CMR with CMR narrative logbook and portable radio.
5. **NOTIFY** Incident Commander that you are unable to make Public Address System announcements.
6. **NOTIFY** the SOC that the CMR has forwarded all calls to the SOC.
7. **REPORT** to the Alternate CMR in the Security Operations Center in the Guard and Security Building.
8. **RESUME** Central Monitoring System operations in the Alternate CMR.
9. **MAKE** protective action communications only if requested to do so by Protective Force.

CMR Initial Response Actions

OTHER SECURITY INCIDENT

1. **CONTACT** the Security Operations Center or Protective Force by telephone.
2. **MAKE** announcements only if requested to do so by Protective Force.

CMR Initial Response Actions

RESPONSE ON NORTH OR SOUTH WIPP ACCESS ROADS

1. **SOUND** INTRO Alarm and **MAKE** the following announcement:
 - **MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT).**
 - An offsite (incident type) has occurred at (specify location).
 - Activate the Fire Department.
 - All personnel consider alternate routes until further notice.
 - (REPEAT MESSAGE)
2. **VERIFY** Fire Department is responding and **DOCUMENT** what unit types and number of personnel are en route.
3. **CONTACT** FSM and **REQUEST** FSM evaluate contingency staffing requirements and stop all high impacted work, as necessary.
4. **NOTIFY** Regional Emergency Dispatch Authority (REDA) of WIPP response.

CMR Initial Response Actions

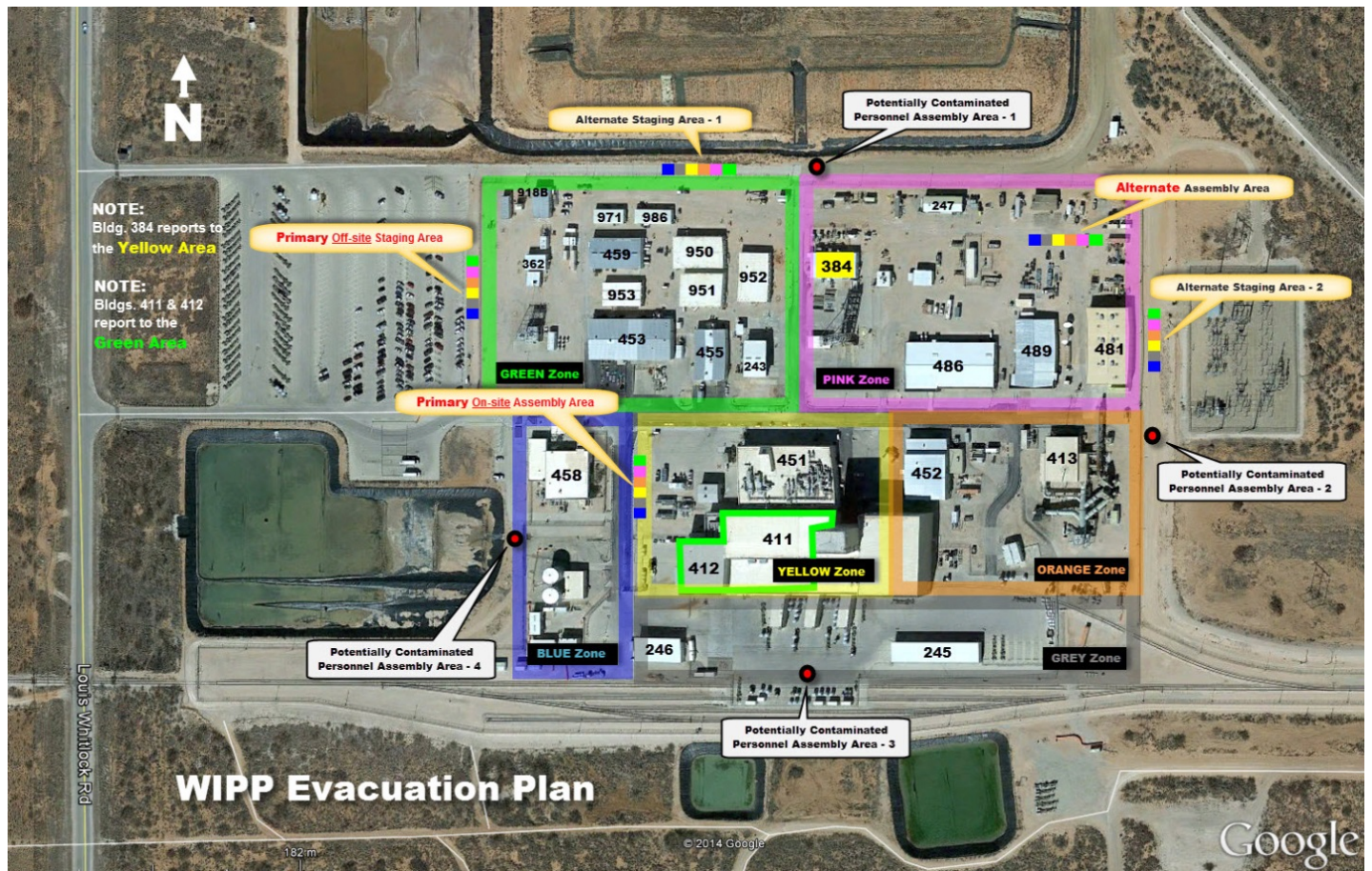
OFFSITE MUTUAL AID REQUEST

1. **CONTACT** FSM and **REQUEST** FSM evaluate WIPP resource availability based on plant operations, contingency staffing, and other requirements.
2. **IF** FSM has approved mutual aid response,
THEN SOUND INTRO Alarm and **MAKE** the following announcement:
 - **MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT).**
 - An offsite (incident type) has occurred at (specify location).
 - Activate the Fire Department.
 - (REPEAT MESSAGE)
3. **VERIFY** Fire Department is responding and **DOCUMENT** what unit types and personnel are en route.
4. **NOTIFY** Regional Emergency Dispatch Authority (REDA) of WIPP responding resources.

CMR Initial Response Actions

ANY OTHER EVENT RECOGNIZED BY CMRO AS ACTUAL OR POTENTIAL EMERGENCY

1. **CONTACT** FSM.
2. **IF** requested by FSM,
THEN SOUND Alarms and **MAKE** announcements as directed by FSM.

WIPP EVACUATION ASSEMBLY AND STAGING AREAS

Offsite Contact Information

Emergency Points of Contact	Agency/Capability
<p>Eddy County Regional Dispatch Authority (REDA)</p> <p>(575) 616-7155 OR</p> <p>9-1-1 (City of Carlsbad Dispatch Center)</p>	<p><u>Fire/EMS</u></p> <ul style="list-style-type: none"> Eddy County Fire Department Carlsbad Fire Department Medical Helicopter (<i>Primary: Native Air</i>) <p><u>Law Enforcement</u></p> <ul style="list-style-type: none"> Eddy County Sheriff's Department Carlsbad Police Department (<i>Only if needed</i>) <p><u>Emergency Management</u></p> <ul style="list-style-type: none"> Eddy County Emergency Management
<p>Lea County Emergency Communications Authority</p> <p>(575) 397-9265</p>	<p><u>Fire/EMS</u></p> <ul style="list-style-type: none"> Lea County Fire Department Hobbs Fire Department Medical Helicopter (<i>Primary: Native Air</i>) <p><u>Law Enforcement</u></p> <ul style="list-style-type: none"> Lea County Sheriff's Department Hobbs Police Department <p><u>Emergency Management</u></p> <ul style="list-style-type: none"> Lea County Emergency Management
<p>State of New Mexico District 3, DPS Dispatch Center</p> <p>(575) 622-7200</p>	<p><u>Law Enforcement</u></p> <ul style="list-style-type: none"> NM State Police NM State Police Bomb Squad <p><u>Emergency Management</u></p> <ul style="list-style-type: none"> NM State Homeland Security and Emergency Management
<p>Federal Bureau of Investigation</p> <p>(505) 889-1300 (ABQ, 24x7) <i>Performed by Security Operations Center (SOC)</i></p>	<p><u>Federal Law Enforcement</u></p> <ul style="list-style-type: none"> Special Agents Evidence Response Team Terrorism Task Force/FBI-Swat
<p>Department of Energy (DOE)</p> <p>(505) 845-4667 (ABQ, 24x7)</p>	<p><u>Radiological Assets</u></p> <ul style="list-style-type: none"> RAP Team (DOE Region 4) National Response Assets (e.g., FRMAC)
<p>Carlsbad Medical Center (CMC) (575) 887-4121</p> <p>Lea Regional Medical Center (LRMC) (575) 492-5260</p>	<p><u>Regional Medical Center</u></p> <ul style="list-style-type: none"> CMC Emergency Room LRMC Emergency Room
<p>Mosaic Potash Mine (575) 628-6269 / (575) 517-0113 (Cell)</p> <p>Intrepid Potash Mine (575) 706-2629</p>	<p><u>Mine-Rescue Teams</u></p> <ul style="list-style-type: none"> Mosaic Potash Mine Intrepid Potash Mine

Offsite Contact Information**ADDITIONAL CONTACTS****PROTECTIVE FORCE**

- | | | |
|-----|--|--|
| 1. | New Mexico State Police
(this includes Bomb team) | (575) 885-3137 Emer.
(575) 885-3138 |
| 2. | FBI Roswell | (575) 622-6001 |
| 3. | FBI Albuquerque | (505) 889-1300 |
| 4. | Eddy County Sheriff's Office | (575) 887-7551 |
| 5. | Carlsbad Police Department | (575) 885-2111 |
| 6. | Lea County Sheriff's Office | (575) 396-3611 |
| 7. | Hobbs Police Department | (575) 396-9265 |
| 8. | Artesia Police Department | (575) 746-5000/5016 |
| 9. | Low-Flying Aircraft (F Av A) | (800) 858-4115 |
| 10. | Department of Transportation | (505) 827-5100 |
| 11. | Department of Interior-BLM | (575) 887-6544 |

MEDICAL

- | | | |
|----|---------------------------------|----------------|
| 1. | Carlsbad Medical Center | (575) 887-4100 |
| 2. | Lea Regional Medical Center | (575) 492-5000 |
| 3. | Native Air Care (air ambulance) | (800) 242-6199 |
| 4. | Unit 22 Ambulance | (575) 706-0179 |
| 5. | Unit 21 Rescue Truck | (575) 706-0181 |
| 6. | Unit 23 (Seagraves) | (575) 706-0178 |
| 7. | Human Resources | (575) 234-8483 |

Call Taking Checklists

Medical Emergency Checklist

Number of Patients:

Patient 1 Information

1.	Name:
2.	Age:
3.	Sex:
4.	Location
5.	Chief complaint:
6.	Patient History (how long has the condition been a problem):
7.	What happened:
8.	Other:

Patient 2 Information

1.	Name:
2.	Age:
3.	Sex:
4.	Location
5.	Chief complaint:
6.	Patient History (how long has the condition been a problem):
7.	What happened:
8.	Other:

Patient 3 Information

1.	Name:
2.	Age:
3.	Sex:
4.	Location
5.	Chief complaint:
6.	Patient History (how long has the condition been a problem):
7.	What happened:
8.	Other:

Call Taking Checklists

Patient 4 Information	
1.	Name:
2.	Age:
3.	Sex:
4.	Location
5.	Chief complaint:
6.	Patient History (how long has the condition been a problem):
7.	What happened:
8.	Other:
Patient 5 Information	
1.	Name:
2.	Age:
3.	Sex:
4.	Location
5.	Chief complaint:
6.	Patient History (how long has the condition been a problem):
7.	What happened:
8.	Other:
Patient 6 Information	
1.	Name:
2.	Age:
3.	Sex:
4.	Location
5.	Chief complaint:
6.	Patient History (how long has the condition been a problem):
7.	What happened:
8.	Other:

Call Taking Checklists

Suspicious Package Checklist

Description of Package	
<input type="checkbox"/> Briefcase	<input type="checkbox"/> Backpack
<input type="checkbox"/> Toolbox	<input type="checkbox"/> Tube
<input type="checkbox"/> Handbag/purse	<input type="checkbox"/> Cardboard box
<input type="checkbox"/> Duffle bag	<input type="checkbox"/> Other:
Description of Person(s) Leaving Package	
1.	Sex:
2.	Hair Color:
3.	Skin Color:
4.	Eye Color:
5.	Estimated Height:
6.	Estimated Weight:
7.	Other:
Additional Information	

Call Taking Checklists

Offsite Response

Type of response	
<input type="checkbox"/> Response to SAR/NAR	<input type="checkbox"/> Mutual Aid Request (outside of SAR/NAR):
Reported by REDA (Mutual aid request or SAR/NAR incident)	
1.	Resources requested (type and number):
2.	Reporting location:
3.	Resources on Scene (IC name if established):
4.	Radio Channel/Frequency:
5.	Other information:
Reported by Employee or Public (SAR/NAR only)	
Note: If outside the LWA and SAR/NAR corridor, request employee to hang up and call 911	
1.	Incident location:
2.	Number of people:
3.	Number of vehicles:
4.	Type of vehicles:
5.	HazMat vehicles or placards:
6.	Injuries:
7.	Type of injuries:
8.	Any response resources on scene:
9.	Other information:

ATTACHMENT 40
WP 12-ER4926 CMR EXPANDED STAFFING OPERATIONS
18 PAGES

WP 12-ER4926

Revision 1

CMR Expanded Staffing Operations

Emergency Operating Procedure

EFFECTIVE DATE: 10/08/15

David Stuhan
APPROVED FOR USE

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Name:
Signature:
Date and Time:

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CHANGE HISTORY SUMMARY

REVISION NUMBER	DATE ISSUED	DESCRIPTION OF CHANGES
0	06/05/15	<ul style="list-style-type: none">• New emergency operating procedure for CMR Expanded Staffing Operations.
1	10/08/15	<ul style="list-style-type: none">• Added step to consider activating the Mine Rescue Team• Added step to brief CMR staff when updates or important information is received.• Added Electronic Attachment for FSM/CM Turnover Briefing Checklist

REFERENCES

DOCUMENT NUMBER AND TITLE	BASELINE DOCUMENT	REFERENCED DOCUMENT	KEY STEP
DOE Order 151.1C, <i>Comprehensive Emergency Management System</i>	✓		
Hazardous Waste Facility Permit, EPA Identification Number NM4890139088-TSDF	✓		
02-PC3005, <i>Permit Reporting 24-Hour, 5-Day Follow-Up, Other Noncompliances</i>	✓		
WP 04-AD3025, <i>Mine Accident Notifications</i>		✓	
WP 04-CM1301, <i>Public Address System Console Operation</i>	✓		
WP 12-9, <i>Emergency Management Plan</i>	✓		
WP 12-ER3906, <i>Categorization and Classification</i>		✓	
WP 12-ER3907, <i>Offsite Emergency Notifications</i>	✓		
WP 12-ER3002, <i>Emergency Operations Center Operations</i>	✓		
WP 12-ER4920, <i>RCRA Contingency Plan Implementation</i>		✓	
WP 12-ER4925, <i>CMR Incident Recognition and Initial Response</i>		✓	
WP 12-ES3918, <i>Reporting Occurrences in Accordance with DOE Order 232.2</i>		✓	
EA12ER4925-4-0, <i>Offsite Contact Information</i>		✓	
EA12ER4926-1-0, <i>CMR Expanded Staffing Checklist</i>		✓	
EA12ER4926-2-0, <i>CMR Expanded Staffing General Protective Actions</i>		✓	
EA12ER4926-3-0, <i>EOC Activation</i>		✓	
EA12ER4926-4-0, <i>FSM/CM Turnover Briefing Checklist</i>		✓	
EA12ER4926-5-0, <i>Environmental Release Worksheet</i>		✓	
PROD-439, <i>General Hazard Analysis</i>	✓		

1.0 ENTRY CONDITIONS

- 1.1 Facility Shift Manager (FSM) or designee receives notification of an actual or potential emergency.

2.0 AUTOMATIC ACTIONS

- 2.1 None

3.0 IMMEDIATE ACTIONS

NOTE

The below actions can be completed by using EA12ER4926-1-0, *CMR Expanded Staffing Checklist*.

- 3.1 **REPORT** to the Central Monitoring Room (CMR)
AND OBTAIN briefing from Central Monitoring Room Operator (CMRO).
 - 3.2 **VERBALLY ASSUME** responsibility for CMR Expanded Staffing Operations.
 - 3.3 **ENSURE** appropriate CMRO Initial Response Actions have been completed in accordance with WP 12-ER4925, CMR Incident Recognition and Initial Response.
-

NOTE

No more than 12 personnel are allowed in the CMR at one time.

- 3.4 **ENSURE** level of CMR expanded staffing is sufficient to support the CMR operations.
- 3.5 **BRIEF** CMR expanded staff on situation.
- 3.6 **ASSIGN** tasks to CMRO(s) and Operational Assistance Team (OAT).

4.0 SUBSEQUENT ACTIONS

NOTE

Subsequent actions can be performed in any order.

FSM may delegate subsequent actions as needed to qualified individuals.

- 4.1 **DETERMINE** whether ongoing work or all site operations should be suspended.
- 4.1.1 **IF** ongoing work or site operations should be suspended,
THEN MAKE announcement to suspend ongoing work or all site operations.
- 4.2 **IF** incident warrants EOC activation,
THEN ACTIVATE the EOC using EA12ER4926-3-0, *EOC Activation*.
- 4.3 **GO TO** WP 12-ER3906, *Categorization and Classification*,
AND RETURN TO this procedure when actions have been completed.
- 4.4 **DETERMINE** if the initial protective actions (PAs) are adequate.
- 4.4.1 **IF** initial PAs are inadequate,
THEN IMPLEMENT follow-on PAs using EA12ER4926-2-0, *CMR Expanded Staffing General Protective Actions*.
- 4.4.2 **IF** incident was Classified as a General Emergency,
THEN COMPLETE the following actions:
- **REQUEST** Protective Force close both Louis Whitlock and South Access Road control points.
 - **RECOMMEND** law enforcement (local or state) to close off access to Louis Whitlock Road at Hobbs Highway (62/180) and the South WIPP Access Road at Jal Highway (128).
- 4.5 **GO TO** WP 04-AD3025, *Mine Accident Notifications*,
AND RETURN TO this procedure when actions have been complete.

4.6 **IF** the incident is in the underground and involves any of the following:

- Evacuation
- Roof fall
- Missing persons

THEN ACTIVATE the Mine Rescue Team.

4.7 **NOTIFY** the CBFO Facility Representative verbally.

4.8 **COMPLETE** EA12-ER4926-5-0, Environmental Release Worksheet and **NOTIFY** Site Environmental Compliance representative designated on the EOC watch bill verbally for applicable compliance notifications.

4.9 **NOTIFY** the following individuals as needed:

- Facility Manager Designee
- Operations Manager
- Communications Manager
- EOC Crisis Manager
- Human Resources Manager
- Fire Marshal
- Environmental Safety and Health Manager
- Underground Services Manager
- RadCon Manager
- Emergency Management & Security Department Manager

4.10 **IF** EOC Crisis Manager (CM) declares EOC Operational and is ready to assume responsibility for incident coordination,
THEN PERFORM the following:

4.10.1 **BRIEF** Crisis Manager using EA12ER4926-4-0, *FSM/CM Turnover Briefing Checklist*,

4.10.2 **DOCUMENT** the time the CM assumed emergency management decision-making responsibility in the CMR narrative log.

4.11 Continuously **MONITOR** the situation and recommend and coordinate changes in PAs and PARs with the following:

- Incident Commander (IC)
- CMR Operators
- Emergency Operations Center (EOC), if operational

- 4.12 **REPORT** received accountability status, with a focus on missing, trapped, and injured workers, to the following:
- IC
 - EOC, if operational
- 4.13 Continuously **EVALUATE** the urgent needs of workers taking PAs (i.e., hazard exposure, hydration, medicine, etc.).
- 4.14 **BRIEF** CMR Staff periodically and when updates or important information is relayed from the any of the following:
- IC
 - CM
 - Other response or dispatch entity
- 4.15 **PROVIDE** support to the IC as requested.
- 4.15.1 **IF** off-site assistance is requested,
THEN REQUEST offsite agency support using EA12ER4925-4-0,
Offsite Contact Information.
- 4.16 **GO TO** WP 12-ES3918, *Reporting Occurrences in Accordance with DOE Order 232.2*,
AND RETURN TO this procedure when actions are completed.
- 4.17 **GO TO** WP 12-ER4920, *RCRA Contingency Plan Implementation*,
AND RETURN TO this procedure when actions are completed.
- 4.18 **IF** alarm or condition is verified as false or is immediately mitigated with no health and safety impact (e.g., air quality, ground control, contamination) to workers,
THEN LIMIT or **STOP** Protective Actions as necessary.
- 4.19 **IF** the incident has been terminated by the IC or EOC Crisis Manager (CM),
OR IF the ALL-CLEAR is received from the IC or CM,
THEN MAKE the ALL-CLEAR announcement using EA12-ER4926-2-0.
- 4.20 **DOCUMENT** time of incident termination in CMR narrative log.

5.0 EXIT CONDITIONS

5.1 **IF** the following conditions have been confirmed to exist,
THEN EXIT this procedure:

- Incident or alarm condition has been verified as a false indication and there is no impact to worker health and safety.

OR

- Incident has been terminated by the IC or CM.

CMR Expanded Staffing Checklist

Incident Name:	Incident Date(s):
----------------	-------------------

ATTENTION

This checklist is a guide for performance of this position's duties during CMR Expanded Staffing. Place a check mark (✓) in the box when the action has been completed. If the action is not applicable to the event, write "N/A" to the right of the box. Incident Management actions may be performed in any order. The FSM may also delegate subsequent actions as needed to CMR staff.

INITIAL RESPONSE

- | | | |
|--------------------------|----|---|
| <input type="checkbox"/> | 1. | REPORT to the Central Monitoring Room (CMR) and OBTAIN briefing from Central Monitoring Room Operator (CMRO). |
| <input type="checkbox"/> | 2. | VERBALLY ASSUME responsibility for CMR Expanded Staffing Operations. |
| <input type="checkbox"/> | 3. | ENSURE appropriate CMRO Initial Response Actions have been completed according to WP 12-ER4925, CMR Incident Recognition and Initial Response. |
| <input type="checkbox"/> | 4. | ENSURE level of CMR expanded staffing is sufficient to support the response and no more than 12 personnel are in the CMR at one time. |
| <input type="checkbox"/> | 5. | BRIEF CMR expanded staff on situation. |
| <input type="checkbox"/> | 6. | ASSIGN tasks to CMRO(s) and Operational Assistance Team. |

CMR Expanded Staffing Checklist

Incident Name:

Incident Date(s):

INCIDENT COORDINATION

(NOTE: These actions can be performed in any order and delegated as necessary.)

- | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|--|---|---------------------------------------|--|---|---------------------------------------|--|--|---------------------------------------|--|------------------------------------|--|--|
| <input type="checkbox"/> | 7. | DETERMINE whether ongoing work or all site operations should be suspended.
<input type="checkbox"/> IF ongoing work or site operations should be suspended,
THEN MAKE announcements to suspend ongoing work or all site operations. | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | 8. | IF incident warrants EOC activation,
THEN ACTIVATE the EOC using EA12ER4926-3-0, <i>EOC Activation</i> . | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | 9. | GO TO WP 12-ER3906, <i>Categorization And Classification Emergency Action Levels</i> ,
AND RETURN TO this checklist when actions have been completed. | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | 10. | DETERMINE if the initial protective actions (PAs) are adequate.
<input type="checkbox"/> IF initial PAs are inadequate,
THEN IMPLEMENT follow-on PAs using 12EAER4926-2-0, <i>CMR Expanded Staffing General Protective Actions</i> . | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | 11. | IF incident was Classified as a General Emergency,
THEN PERFORM the following actions:
<input type="checkbox"/> REQUEST Protective Force close both Louis Whitlock and South Access Road control points.
<input type="checkbox"/> RECOMMEND law enforcement (local or state) to close off access to Louis Whitlock Road at Highway 62/180, and the South WIPP Access Road at Highway 128. | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | 12. | GO TO WP 04-AD3025, <i>Mine Accident Notifications</i> ,
AND RETURN TO this checklist when actions have been completed. | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | 13. | IF the incident is in the underground and involves any of the following: <ul style="list-style-type: none"> • Evacuation • Roof Fall • Missing Persons THEN ACTIVATE the Mine Rescue Team. | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | 14. | NOTIFY the CBFO Facility Representative verbally. | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | 15. | COMPLETE 12-ER4926-5-0, Environmental Release Checklist and NOTIFY Site Environmental Compliance representative designated on the EOC watch bill for applicable compliance notifications. | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | 16. | NOTIFY the following individuals if necessary: <table style="width: 100%; margin-top: 10px;"> <tr> <td><input type="checkbox"/> EOC Crisis Manager</td> <td><input type="checkbox"/> Operations Manager</td> <td><input type="checkbox"/> Facility Manager Designee</td> </tr> <tr> <td><input type="checkbox"/> U/G Services Manager</td> <td><input type="checkbox"/> ES&H Manager</td> <td><input type="checkbox"/> Human Resources Manager</td> </tr> <tr> <td><input type="checkbox"/> RadCon Manager</td> <td><input type="checkbox"/> Fire Marshal</td> <td><input type="checkbox"/> Environ. Health Manager</td> </tr> <tr> <td><input type="checkbox"/> Communication Manager</td> <td><input type="checkbox"/> EM&S Manager</td> <td><input type="checkbox"/> Site Environmental Compliance Manager</td> </tr> <tr> <td colspan="3"><input type="checkbox"/> Other(s):</td> </tr> </table> | <input type="checkbox"/> EOC Crisis Manager | <input type="checkbox"/> Operations Manager | <input type="checkbox"/> Facility Manager Designee | <input type="checkbox"/> U/G Services Manager | <input type="checkbox"/> ES&H Manager | <input type="checkbox"/> Human Resources Manager | <input type="checkbox"/> RadCon Manager | <input type="checkbox"/> Fire Marshal | <input type="checkbox"/> Environ. Health Manager | <input type="checkbox"/> Communication Manager | <input type="checkbox"/> EM&S Manager | <input type="checkbox"/> Site Environmental Compliance Manager | <input type="checkbox"/> Other(s): | | |
| <input type="checkbox"/> EOC Crisis Manager | <input type="checkbox"/> Operations Manager | <input type="checkbox"/> Facility Manager Designee | | | | | | | | | | | | | | | |
| <input type="checkbox"/> U/G Services Manager | <input type="checkbox"/> ES&H Manager | <input type="checkbox"/> Human Resources Manager | | | | | | | | | | | | | | | |
| <input type="checkbox"/> RadCon Manager | <input type="checkbox"/> Fire Marshal | <input type="checkbox"/> Environ. Health Manager | | | | | | | | | | | | | | | |
| <input type="checkbox"/> Communication Manager | <input type="checkbox"/> EM&S Manager | <input type="checkbox"/> Site Environmental Compliance Manager | | | | | | | | | | | | | | | |
| <input type="checkbox"/> Other(s): | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | 17. | IF EOC Crisis Manager (CM) declares EOC Operational and is ready to assume responsibility for incident coordination,
THEN PERFORM the following: <ul style="list-style-type: none"> <input type="checkbox"/> BRIEF Crisis Manager using EA12ER4926-4-0, <i>FSM/CM Turnover Briefing Checklist</i>, <input type="checkbox"/> DOCUMENT the time the CM assumed emergency management decision-making responsibility in the CMR narrative log. | | | | | | | | | | | | | | | |

CMR Expanded Staffing Checklist

Incident Name:	Incident Date(s):
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INCIDENT COORDINATION

(NOTE: These actions can be performed in any order and delegated as necessary.)

<input type="checkbox"/>	18.	Continuously MONITOR the situation and coordinate changes in PAs and PARs with the following: <ul style="list-style-type: none"> Incident Commander (IC) CMR Operators Emergency Operations Center (EOC), if operational
<input type="checkbox"/>	19.	REPORT received accountability status to, with a focus on missing, trapped, and injured workers, to the following: <ul style="list-style-type: none"> IC EOC, if operational
<input type="checkbox"/>	20.	Continuously EVALUATE the urgent needs of workers taking protective actions (e.g., hazard exposure, hydration, medicine, etc.).
<input type="checkbox"/>	21.	BRIEF CMR Staff periodically and when updates or important information is relayed from the any of the following: <ul style="list-style-type: none"> IC CM Other response entity
<input type="checkbox"/>	22.	PROVIDE support to the IC as requested. <input type="checkbox"/> IF off-site assistance is requested, THEN REQUEST offsite agency support using EA12ER4925-4-0, <i>Offsite Contact Information</i> .
<input type="checkbox"/>	23.	GO TO WP 12-ES3918, <i>Reporting Occurrences in Accordance with DOE Order 232.2</i> , AND RETURN TO this checklist when actions are completed.
<input type="checkbox"/>	24.	GO TO WP 12-ER4920, <i>RCRA Contingency Plan Implementation</i> , AND RETURN TO this checklist when actions are completed.
<input type="checkbox"/>	25.	IF alarm or condition is verified as false or is immediately mitigated with no health and safety impact (e.g. air quality, ground control, contamination to workers, etc.), THEN LIMIT or STOP protective actions as necessary.
<input type="checkbox"/>	26.	IF the incident has been terminated by the IC or EOC Crisis Manager (CM), OR the ALL-CLEAR is received from the IC or CM, THEN MAKE the ALL-CLEAR announcement using EA12ER4926-2-0, <i>CMR Expanded Staffing General Protective Actions</i> .
<input type="checkbox"/>	27.	DOCUMENT time of incident termination in CMR narrative log.

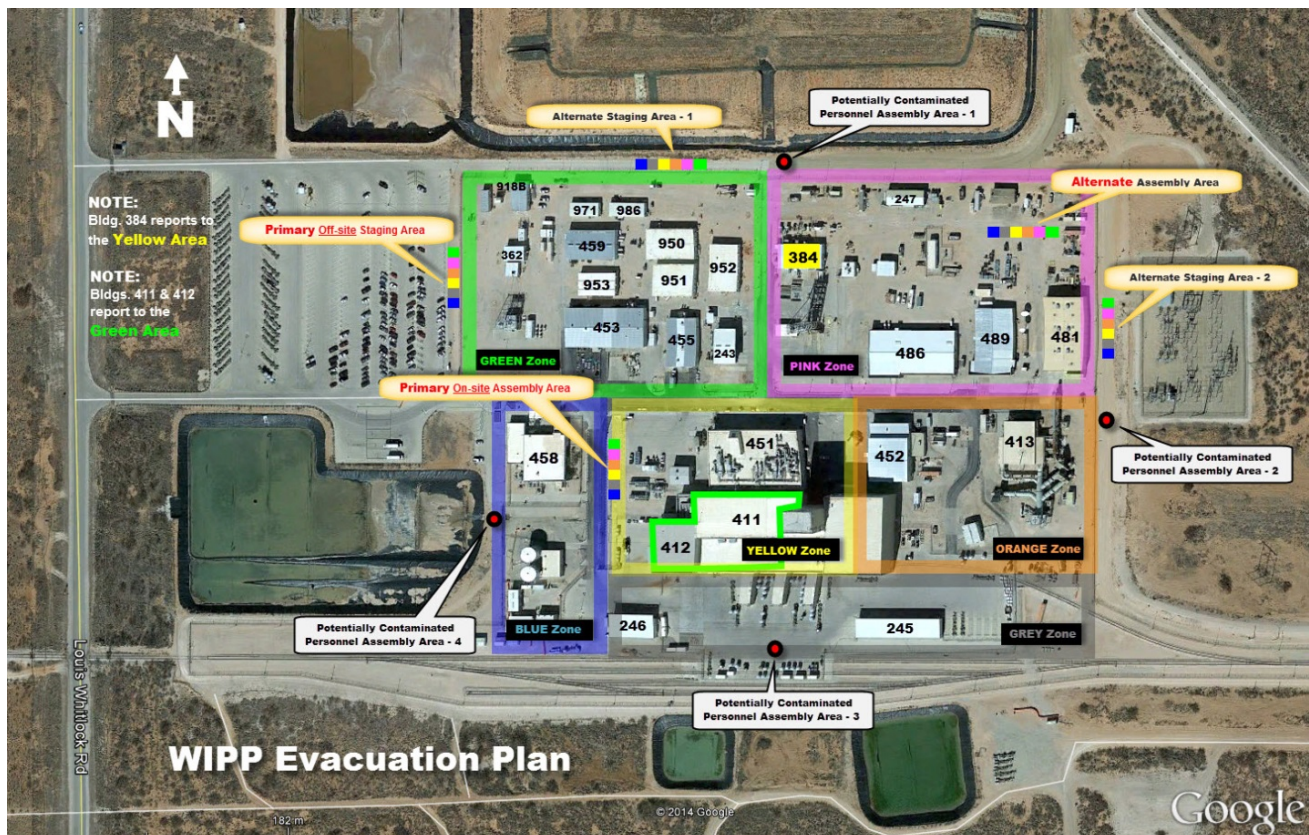
CMR Expanded Staffing General Protective Actions

General Protective Actions	
PROTECTIVE ACTION	ANNOUNCEMENT
<p style="text-align: center;">SELF-BARRICADE</p> <p>Note: Some workers may self-evacuate based on the perceived threat in their area.</p> <p>Note: Non-security first-responders will immediately self-barricade and will then respond as requested by the Security Incident Commander</p>	<ul style="list-style-type: none"> • MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT) • There is an active aggressor (description and weapon type, if known) located in/near (specific location). • All personnel self-barricade immediately and wait for further instructions. • (REPEAT MESSAGE)
<p style="text-align: center;">SHELTER IN PLACE</p> <p>Note: First-responders will immediately shelter in place and then will determine safe routes and personal protective equipment needed for emergency response in coordination with the CMR.</p> <p>Note: Determine applicability to the surface and underground.</p>	<ul style="list-style-type: none"> • MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT) • There is an (specify incident) emergency in/near (specify location). • All personnel on the surface shelter-in-place immediately. • Underground personnel report to your assembly area and wait for further instructions. • (REPEAT MESSAGE)
<p style="text-align: center;">REMAIN INDOORS</p>	<ul style="list-style-type: none"> • MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT) • There is an (specify incident) emergency in/near (specify location). • All non-essential personnel not involved in the response are to Remain Indoors as a precautionary measure. • (REPEAT MESSAGE)
<p style="text-align: center;">BUILDING EVACUATION</p> <p>Note: Consider environmental conditions and hazards when selecting a building evacuation.</p> <p>Note: Based on existing or potential hazards, consider using the Alternate Assembly Area.</p>	<ul style="list-style-type: none"> • MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT) • There is an (specify incident) emergency in/near (specify location). • All (area/building) personnel, report to the Assembly Area (name the assembly area selected). • (REPEAT MESSAGE)
<p style="text-align: center;">IMMEDIATE UNDERGROUND EVACUATION</p> <p>Note: Consider hoist availability and ventilation.</p>	<ul style="list-style-type: none"> • MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT) • There is an (specify incident) emergency in/near (specify location). • All U/G personnel report to the egress hoist stations for immediate evacuation. • (REPEAT MESSAGE)
<p style="text-align: center;">UNDERGROUND ASSEMBLY AND PLANNED EVACUATION</p> <p>Note: Consider hoist availability and ventilation.</p>	<ul style="list-style-type: none"> • MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT) • There is an (specify incident) emergency in/near (specify location). • All U/G personnel suspend work activities and report to the underground assembly areas and wait for further instructions on a planned evacuation. • (REPEAT MESSAGE)

CMR Expanded Staffing General Protective Actions

<p align="center">SITE EVACUATION</p> <p>Note: Consider environmental conditions, hazards, and transportation when selecting a site evacuation.</p> <p>Note: Based on existing or potential hazards, consider using the Alternate Staging Area.</p>	<ul style="list-style-type: none"> MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT) There is an (specify incident) emergency in/near (specify location). All U/G personnel report to the egress hoist stations for evacuation. All surface personnel, except (name essential personnel/group), report to the Staging Area (name the staging area selected). (REPEAT MESSAGE)
<p align="center">ALL CLEAR ANNOUNCEMENT</p> <p>Note: Sound INTRO Alarm before making announcement.</p>	<ul style="list-style-type: none"> MAY I HAVE YOUR ATTENTION PLEASE. (REPEAT) (IC/CM) has given the all-clear from (specific event). All protective actions have been lifted. Resume normal operations. (REPEAT MESSAGE)

WIPP EVACUATION ASSEMBLY AND STAGING AREAS



EOC Activation

PRECAUTIONS

IF the event poses potential hazards to personnel responding to the EOC or an alternate safe location,
THEN PROVIDE safe route information to the responders,
OR INSTRUCT EOC cadre members to report virtually (e.g., telephone) if unsafe to leave their building.

NORMAL HOURS

1. **MAKE** a Public Address System (PAS) announcement to activate the EOC.
2. **CONTACT** EOC Staff personnel using the Communicator! NXT Notification System.
3. **IF** automated notification system cannot be used,
THEN NOTIFY the on-duty EOC staff personnel of the EOC activation using the telephone pager system.
4. **IF** automated notification system and telephone pager systems cannot be used,
THEN NOTIFY EOC staff personnel of the EOC activation by telephone using the WIPP EOC Watchbill.

OFF-SHIFT HOURS

1. **CONTACT** EOC Staff personnel using the Communicator! NXT Notification System.
2. **IF** automated notification system cannot be used,
THEN NOTIFY the on-duty EOC staff personnel of the EOC activation using the telephone pager system.
3. **IF** automated notification system and telephone pager systems cannot be used,
THEN NOTIFY EOC staff personnel of the EOC activation by telephone using the WIPP EOC Watchbill.

Activation Options

Communicator! NXT Notification System

- 1) **DIAL** 8616
- 2) At the prompt, **ENTER** User ID#: 8125#
- 3) At the prompt, **ENTER** Security PIN: 8125#
- 4) At the prompt, **ENTER** Scenario #: 911#
- 5) **LISTEN** to the instructions.

NOTE: Do NOT press 1 to hear the current scenario message.

- 6) **PRESS** 2 to change and record a message.
 - a) **INCLUDE** the following recorded message:
 - Event description
 - Direction to report to the Site EOC, Skeen-Whitlock EOC, or other location as appropriate including specifying a safe route to be taken by responders
 - Any other information provided by the FSM
- 7) **PRESS** 3 to activate the scenario. You will hear "Scenario Building."
- 8) When the Communicator! NXT prompts again to start a scenario, **PRESS** # to end the call.

Telephone Pager System

- 1) **PAGE** EOC Staff using the telephone pager system as follows:
 - **DIAL** 8850.
 - **USE** pager 422, followed by 111 when prompted.

WIPP EOC Watchbill

- 1) **CALL** individual EOC Staff Members listed on the Watchbill
 - a) Include the following information:
 - Event description
 - Direction to report to the Site EOC, Skeen-Whitlock EOC, or other location as appropriate including specifying a safe route to be taken by responders
 - Any other information provided by the FSM

FSM/CM TURNOVER BRIEFING CHECKLIST

Incident Name:

Incident Date(s):

ATTENTION

This checklist is a guide for performance of FSM or designees duties during FSM/CM Turnover Briefing. Place a check mark (✓) in the box when the line item has been communicated to the CM. If the action is not applicable to the event, write "N/A" to the right of the box.

INCIDENT SITUATION REPORT

- | | |
|--------------------------|---|
| <input type="checkbox"/> | 1. INCIDENT NAME |
| <input type="checkbox"/> | 2. INCIDENT TIME |
| <input type="checkbox"/> | 3. INCIDENT COMMANDER |
| <input type="checkbox"/> | 4. INCIDENT TYPE |
| <input type="checkbox"/> | 5. INCIDENT LOCATION |
| <input type="checkbox"/> | 6. COMMUNICATION CHANNELS |
| <input type="checkbox"/> | 7. METEOROLOGICAL DATA
<div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div> <input type="checkbox"/> Temp: _____ (Fahrenheit)
 <input type="checkbox"/> Relative Humidity: _____ </div> <div> <input type="checkbox"/> Wind Speed: _____
 <input type="checkbox"/> Precipitation: Y/N </div> <div> <input type="checkbox"/> Wind Direction(from): _____
 <input type="checkbox"/> Other: _____ </div> </div> |
| <input type="checkbox"/> | 8. INJURIES: |

STATUS OF CRITICAL INFRASTRUCTURE, SYSTEMS, AND EQUIPMENT

- | | |
|--------------------------|--|
| <input type="checkbox"/> | 9. RELEVANT STATUS:
<div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div> <input type="checkbox"/> Ventilation System
 <input type="checkbox"/> Generators
 <input type="checkbox"/> Security Systems </div> <div> <input type="checkbox"/> Hoist/Shfts
 <input type="checkbox"/> CAM Alarms
 <input type="checkbox"/> Utilities </div> <div> <input type="checkbox"/> CMS
 <input type="checkbox"/> Fire Protection Systems
 <input type="checkbox"/> Other </div> </div> |
|--------------------------|--|

INITIAL RESPONSE ACTIONS

- | | |
|--------------------------|--|
| <input type="checkbox"/> | 10. INITIAL PROTECTIVE ACTIONS |
| <input type="checkbox"/> | 11. CATEGORIZATION AND CLASSIFICATION |
| <input type="checkbox"/> | 12. FOLLOW ON PA/PARS |

RESOURCE COORDINATION

- | | |
|--------------------------|------------------------------------|
| <input type="checkbox"/> | 13. RESOURCES ON SCENE |
| <input type="checkbox"/> | 14. RESOURCES EN ROUTE |
| <input type="checkbox"/> | 15. PENDING RESOURCE ORDERS |

FSM/CM TURNOVER BRIEFING CHECKLIST

Incident Name:

Incident Date(s):

CMR COORDINATION ACTIVITIES☐ 16 **ACCOUNTABILITY STATUS**☐ 17 **OFFSITE EMERGENCY NOTIFICATIONS**☐ Completed☐ Not initiated☐ In progress☐ Time: _____☐ Time due: _____☐ 18 **MSHA NOTIFICATIONS (04-AD3025)**☐ 19 **OCCURRENCE REPORTING (12-ES3918)**☐ 20 **RCRA CONTINGENCY PLAN NOTIFICATIONS (12-ER4920)**☐ 21 **NOTIFICATIONS MADE:**☐ Facility Representative☐ Operations Manager☐ Facility Manager Designee☐ U/G Services Manager☐ ES&H Manager☐ Human Resources Manager☐ RadCon Manager☐ Fire Marshal☐ Environ. Health Manager☐ Communication Manager☐ EM&S Manager☐ Site Environmental Compliance Manager☐ Other(s):**EXPECTED CM RESPONSIBILITIES**☐ 22 **EXPECTED CM RESPONSIBILITIES:**☐ CAT/CLASS☐ Offsite notifications☐ Onsite Notifications☐ PA/PAR Implementation☐ MSHA Notifications☐ ORPS Reporting☐ Accountability☐ RCRA Contingency Plan
Matrix/Notifications☐ Resource ordering/tracking☐ Other expected CM responsibilities:**TURNOVER**☐ 23 **TIME:** _____

ENVIRONMENTAL RELEASE WORKSHEET

<p>This checklist is a guide for performance of FSM or designees. If the action is not applicable to the event, write "N/A" to the right of the box.</p>	
Question	Answers
1. Date of Incident (date reported if incident date unknown.)	
2. Time of the incident (time reported if incident time unknown)?	
3. Name or description of material released?	
4. Estimated quantity released or with the potential for release?	
5. Location of release?	
6. WIPP SDS # if known?	
Answer Yes/No and If yes, provide description	
7. Has released material gone or is expected to	
a. Go offsite	
b. Stop normal operations	
c. Enter the domestic sewer system or facility lagoon	
d. Involve a TRU waste containing PCB	
e. Involve hazardous waste	
f. Be from a sewage lagoon, sewer, H-19, salt pile evaporation pond, or salt storage extension basin	

ATTACHMENT 41
WORK PLAN TO COMPLETE THE RCRA CONTINGENCY PLAN
MODIFICATIONS TO THE PERMIT

3 PAGES

WORK PLAN
(STIPULATED FINAL ORDER NO. HWB-14-21, PARAGRAPH 31, ATTACHMENT A
NARRATIVE, SECTION 10.2, ATTACHMENT 41)

1.0 OVERVIEW

Pursuant to the New Mexico Environment Department (**NMED**) Stipulated Final Order No. HWB-14-21 (**Order**), the United States Department of Energy and Nuclear Waste Partnership LLC, hereinafter referred to as the Permittees, are submitting this document to comply with Paragraph 31 of the Order. Section 10.2 of the Attachment A narrative requires the Permittees to describe the proposed contents of a Class 2 Permit Modification Request (**PMR**) to include, but not be limited to, revising the Waste Isolation Pilot Plant Hazardous Waste Facility Permit (**Permit**) Attachment D, RCRA Contingency Plan.

This work plan addresses the content of the PMR and the process that the Permittees will follow to prepare and submit the PMR. At a minimum, the PMR will be submitted pursuant to Paragraph 31 of the Order and Permit Part 1, Section 1.3.1. and address the following requirements:

- It will contain a description of the changes to be made to the Permit.
- It will identify that it is a Class 2 modification.
- It will explain why the modification is needed.
- It will describe the exact changes to be made to the Permit.
- It will contain a signed certification statement per 20.4.1.900 NMAC (incorporating 40 CFR 270.11(d)(1) and 40 CFR 270.30(k)).

2.0 PROPOSED PERMIT REVISIONS

The Class 2 PMR will include, but will not necessarily be limited to, the modifications listed below.

- **Revise and Update Attachment D, *Resource Conservation and Recovery Act Contingency Plan***
 - Revise Attachment D, Section D-3, *Implementation*, and associated tables to accomplish the following:
 - Facilitate the Resource Conservation and Recovery Act (**RCRA**) Emergency Coordinator's ability to make an immediate decision regarding implementation of the *RCRA Contingency Plan* by revising the implementation criteria to be consistent with the Permit, Part 2, Section 2.12.1. and 20.4.1.500 NMAC (incorporating 40 CFR §264.51(b)).
 - Revise descriptions of notification and reporting procedures to ensure that the New Mexico Environment Department (**NMED**) is immediately notified whenever there is an event which could threaten human health and the environment, whether or not the RCRA Contingency Plan is implemented.

ATTACHMENT 41: RCRA CONTINGENCY PLAN CLASS 2 PERMIT MODIFICATION REQUEST WORK PLAN

- Remove redundant and extraneous information not specifically required by 20.4.1.500 NMAC (incorporating 40 CFR Part 264, Subpart D).
- Revise Attachment D, Sections D-1, D-2, and D-4 through D-9, to accomplish the following:
 - Clearly define the scope and applicability of the *RCRA Contingency Plan* as it pertains to 20.4.1.500 NMAC (incorporating 40 CFR Part 264, Subpart D).
 - Clearly delineate and explain the portions of the RCRA that require the development and implementation of a formal contingency plan for the WIPP facility.
 - Clearly define the notification and response duties of the RCRA Emergency Coordinator in the event of fires, explosions, or releases (sudden and non-sudden), including leaks and spills, of hazardous waste or hazardous waste constituents which could threaten human health or the environment.
 - Update List Table D-6, *Emergency Equipment Maintained at the Waste Isolation Pilot Plan*, and associated tables and figures to ensure consistency with inventory lists maintained in accordance with NMAC and other applicable standards.
 - Revise Attachment E, Table E-1, *Inspection Schedule, Process and Forms*, to be consistent with changes made to Table D-6.
 - Revise Coordination Agreements described in Section D-4a(1) and Section D-6 which may be invoked upon implementation of the *RCRA Contingency Plan*.
 - Update Section D-7, *Evacuation Plan*, to reference appropriate detail to and align with standard operating procedures.
 - Remove redundant and extraneous information not specifically required by 20.4.1.500 NMAC (incorporating 40 CFR Part 264, Subpart D).
- **Revise Emergency Response Personnel Job Titles and Descriptions**
 - Remove reference to the Facility Shift Manager (**FSM**) as the designated RCRA Emergency Coordinator.
 - Remove references to Emergency Services Technician/Fire Protection Technician, First Line Initial Response Team (**FLIRT**), and Fire Brigade.
 - Add Firefighter and Incident Commander.
 - Expand duties of Emergency Response Team (**ERT**); revise the definition of the Mine Rescue Team (**MRT**).
 - Revise descriptions of the Emergency Operations Center (**EOC**) and its activation and refer to standard operating procedures that implement the EOC.
 - Clarify authority of RCRA Emergency Coordinator to delegate responsibility of managing activities related to the mitigation of incidents to the Incident Commander.

ATTACHMENT 41: RCRA CONTINGENCY PLAN CLASS 2 PERMIT MODIFICATION REQUEST WORK PLAN

- Remove references to Office Warden, Chief Office Warden, and Assistant Office Warden.
- **Revise Emergency Response Personnel Training**
 - Add section to Attachment D to address standards for emergency response personnel training, consistent with the *WIPP Fire Department Training Plan*.
 - Revise Attachments F, F1, and F2 to accomplish the following:
 - Make consistent with revised emergency response job titles and descriptions.
 - Describe the professional qualifications/certifications required for WIPP Fire Department personnel.
 - Remove training courses that are duplicative of the required qualifications/certifications.
 - Address site-specific training required to meet the standards of 20.4.1.500 NMAC (incorporating 40 CFR §264.16)

3.0 SCHEDULE

Activity	Anticipated Date
Submit Work Plan	March 22, 2016
NMED Approves Work Plan	April 22, 2016
Complete Internal Review of Draft PMR	May 6, 2016
Conduct Pre-submittal Meetings	May 10 and May 12, 2016
Revise Draft PMR to Incorporate NMED/Stakeholder Input from Pre-submittal Meetings	May 20, 2016
Conduct Review of Final Draft PMR	May 27, 2016
Submit PMR to NMED	June 3, 2016

ATTACHMENT 42
CCP-TP-005, REV 27, CCP ACCEPTABLE KNOWLEDGE
DOCUMENTATION

93 PAGES

CCP-TP-005

Revision 27

CCP Acceptable Knowledge Documentation

EFFECTIVE DATE: 08/26/2015

Mike Ramirez

PRINTED NAME

APPROVED FOR USE

RECORD OF REVISION

Revision Number	Date Approved	Description of Revision
4	01/17/2002	Revised to delete the requirement for signing the AK Summary and other minor changes. Added cis & trans-1,2-Dichloroethylene, Attachment 5.
5	01/24/2002	Minor change to Attachment 14 due to the following: Signature lines were struck and approved by all levels of review in previous revision. When preparing document to be issued signature lines were inadvertently left in and must now be removed. Printed name and "approved for use" are being inserted to reflect the CCP Procedure format.
6	07/23/2002	Revised document to: <ul style="list-style-type: none">• Comments based on CH-WAC revision• Accommodate comments from an assessment at SRS Document Review Record for Technical and Quality Assurance• Comments from a Program Evaluation at ANL-E
7	09/06/2002	Revised document to: <ul style="list-style-type: none">• Minor editorial changes to 2.1, 4.2, 4.3, and 4.4 Changes to 4.4.17 to comply with WAP requirements and Program Evaluation Changes to 4.4.26 to comply with Program Evaluations for NTS.
8	09/19/2002	Revised document based on comments from the ANLE Certification Audit and a CBFO Adequacy Review; revised Sections 3.1, 4.2, 4.3, 4.4, 4.5 and Attachments 7, 10, and 11.
9	09/26/2002	Revised document based on comments from the NTS Certification Audit; revised Sections 4.3, 4.4, 4.5, and 4.6.
10	10/24/2002	Revised step 3.2.13; added Section 3.6 and steps 4.7.18 and 4.7.19; and revised Attachment 10 based on comments from the SRS Recertification Audit.
11	02/05/2003	Revised document to address CAR #02-087 and CAR # 02-088 from the ANL-E Certification Audit. Revised steps 4.4.1 and added NOTE. Revised steps 4.4.17, 4.4.20, 4.4.24, 4.4.26, and 4.5.1 [D.2]

RECORD OF REVISION (Continued)

Revision Number	Date Approved	Description of Revision
12	03/26/2003	Revised step 4.4.8 and preceding NOTE.
13	11/18/2003	<p>Revised document to:</p> <ul style="list-style-type: none">- Perform minor editorial changes throughout document. Clarify that Attachments are example forms. Remove Attachments 11 and 12 to create electronically fillable forms of these attachments.Add Section 3.7 to include responsibility of Nondestructive Assay (NDA) Subject Matter Expert (SME) to perform assessment with the Acceptable Knowledge Expert.Update steps 4.4.17 and 4.4.18 to require that the uses and limitations of the radionuclide Acceptable Knowledge information is reviewed by the NDA SME.Add Section 4.9 to address CAR-SRS-006-03 for the process used to document the addition of containers to existing waste streams.Added a new Section 4.3.3 identifying the use of Memorandum to CCP Central Records.Added a new Section 4.6.3 to incorporate preparation of a letter/memorandum to Site Project Manager summarizing AK information; revision of Sections 4.6.4 and 5.1.1[J] to incorporate the addition of 4.6.3.Deleted Section 4.1.3 Process Equipment Description from the AK Summary Report Content Guide.- Modified Attachment 5.
14	11/19/2004	<p>Revised document to:</p> <ul style="list-style-type: none">- Perform minor editorial changes and technical clarifications throughout document.- Revised procedure to address WIPP WAC Revision 1 and 2 changes relating to beryllium, payload container management, high plutonium content waste/material, and PCB requirements (Sections 1.0 and 4.4.24).- Revised Section 4.8.1 to allow for resolution of discrepancies within the AK Summary Report.- Deleted redundant records management requirement to attach copies of the AK Source Document Discrepancy reports to all affected sources.- Deleted step 4.4.8[B].

RECORD OF REVISION (Continued)

Revision Number	Date Approved	Description of Revision
15	03/31/2005	Revised document to incorporate WIPP WAP AK requirements for LANL sealed sources. Addressed CBFO comments.
16	02/27/2006	Revised document to: Incorporate minor editorial changes and technical clarifications throughout the document. Add Sections 4.10 and 4.11 to address creation and maintenance of the Container Tracking Spreadsheet on the FTP (CAR-INL-0003-05). Replace revised Attachments 5 and 10 based on recent audit discussions.
17	06/05/2006	Revised to allow the use of attachments to this procedure during the management of Remote-Handled (RH) Acceptable Knowledge (AK) in accordance with DOE/WIPP-02-3214, <i>Remote-Handled TRU Waste Characterization Program Implementation Plan</i> (WCPIP). Revised Attachment 6, Waste Form, Waste Material Parameters, Prohibited Items, and Packaging – Example Form per Los Alamos National Laboratory (LANL) Certification Audit A-06-11.
18	11/16/2006	Revised to implement the Waste Isolation Pilot Plant Hazardous Waste Facility Permit requirements resulting from the Section 311/Remote-Handled (RH) Permit Modification Request (PMR). Addressed Carlsbad Field Office (CBFO) Document Review Record (DRR) comments.
19	07/06/2010	Revised document to address the Waste Isolation Pilot Plant (WIPP) Form WF09-171 from an internal Central Characterization Project (CCP) audit and to incorporate minor editorial changes and technical clarifications noted as a result of various Acceptable Knowledge audits.
20	11/01/2010	Revised to allow new and updated attachments and source documents to be submitted anytime after the initial submittal.
21	12/29/2010	Revised to implement the revision of the <i>Waste Isolation Pilot Plant Hazardous Waste Facility Permit</i> .
22	04/21/2011	Revised to address changes in Revision 2 of the <i>Remote-Handled TRU Waste Characterization Program Implementation Plan</i> (WCPIP). Incorporated editorial changes and technical clarifications throughout procedure.
23	06/30/2011	Revised to clarify what constitutes a record as part of the resolution to resolve CBFO CAR11-043.

RECORD OF REVISION (Continued)

Revision Number	Date Approved	Description of Revision
24	11/28/2011	Revised to address comments from inspectors during U.S. Environmental Protection Agency (EPA) Baseline Inspection EPA-SNL-CCP-RH-06.11-8 (June 6/8, 2011). Also revised to incorporated lessons learned from Carlsbad Field Office (CBFO) records surveillance.
25	06/19/2013	Revised to incorporate Nuclear Waste Partnership (NWP) transition changes and to implement the Permit Modification Request Class 2 approved by New Mexico Environment Department (NMED) dated March 13, 2013.
26	08/12/2013	To clarify the evaluation of nondestructive assay (NDA) results by the site project manager (SPM) and acceptable knowledge expert (AKE). Also, to incorporate changes as a result of CAR-LANL-0003-13.

RECORD OF REVISION (Continued)

Revision Number	Date Approved	Description of Revision
27	08/26/2015	<p>Revised procedure to address New Mexico Environment Department (NMED) Compliance Order (CO) HWB-14-21 (December 6, 2014). Changes included:</p> <ul style="list-style-type: none">• Preparation and maintenance of Interface Waste Management Documents List (Attachment 9) in steps 4.2.9 through 4.2.17.• Verification of new and revised procedures during acceptable knowledge (AK) document review and summary in Steps 4.3.9 through 4.3.13 and during the addition of containers to the waste stream in steps 4.10.3 through 4.10.6.• Added Section 4.13 describing the steps to perform an AK Assessment to ensure that the existing Central Characterization Program (CCP) AK documentation relating to the management of potentially energetic transuranic (TRU) waste forms (reactive, ignitable, and incompatible materials) is adequate, current, and accurately described in existing AK Summary Reports.• Added Section 4.14 to formally describe AK Briefings currently being performed for CCP personnel to include cognizant generator site Points-of-Contact (POCs) involved directly with the generation of the waste streams.• Added Section 4.4.21 for the preparation of Chemical Compatibility Evaluation Memorandum.• Updated the responsibilities in Section 3.0 to address these changes.• Revised Section 4.6 to provide clarification for the preparation of the Accuracy Reports required for both NMED and U.S. Environmental Protection Agency (EPA) and to clarify that accuracy will be tracked using all CCP certified testing data.• Addressed miscellaneous freeze file changes.

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1.0 PURPOSE

The *Waste Isolation Pilot Plant Hazardous Waste Facility Permit, Waste Analysis Plan* (WIPP-WAP), authorizes the use of acceptable knowledge (AK) in appropriate circumstances to delineate waste streams and to characterize hazardous waste. WIPP WAP AK requirements are addressed in CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*, and implemented through this procedure. DOE/WIPP-02-3122, *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant* (WIPP-WAC), AK requirements are addressed in CCP-PO-002, *CCP Transuranic Waste Certification Plan*. Additionally, implementation of this procedure will generate information required by CCP-PO-003, *CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC)* and CCP-PO-505, *CCP Remote-Handled Transuranic Waste Authorized Methods for Payload Control (CCP RH-TRAMPAC)*. This procedure applies to Central Characterization Program (CCP) personnel who perform AK activities for retrievably stored and newly generated transuranic (TRU) waste streams that may be eligible for disposal at Waste Isolation Pilot Plant (WIPP).

1.1 Scope

This procedure describes the processes the CCP uses to compile, review, evaluate, update, and report AK documentation. The procedure also describes how the CCP determines AK Sufficiency, AK accuracy; re-evaluates AK documentation when necessary; resolves AK documentation discrepancies, and uses AK to delineate waste streams and determine whether the waste is hazardous. A waste stream is defined as waste materials that have common physical form, that contain similar hazardous constituents (similar radiological properties for DOE/WIPP-02-3214, *Remote-Handled TRU Waste Characterization Program Implementation Plan* [WCPIP] compliance), and that are generated from a single process or activity.

Only CCP personnel trained in accordance with CCP-QP-002, *CCP Training and Qualification Plan*, will compile, evaluate, and document AK information in accordance with this procedure. Sites hosting the CCP may assist CCP personnel in the collection of AK information; however, this procedure will be used by the CCP to generate the required AK in accordance with CCP-PO-001, CCP-PO-002, CCP-PO-003, and CCP-PO-505.

AK includes any documentation that describes or verifies site history, mission, and operations, in addition to waste stream-specific information used to define the generating process, waste matrix, waste quantities and contaminants (radiological and chemical).

The information acquired in the performance of this procedure is used to prepare an AK Summary Report or an AK Sufficiency Determination.

This information is provided in the following attachments:

- Attachment 1 – Acceptable Knowledge Documentation Checklist – Example Form
- Attachment 2 – Record of Communication – Example Form
- Attachment 3 – Acceptable Knowledge Source Document Summary – Example Form
- Attachment 4 – Acceptable Knowledge Information List – Example Form
- Attachment 5 – Hazardous Constituents – Example Form
- Attachment 6 – Waste Form, Waste Material Parameters, Prohibited Items, and Packaging – Example Form
- Attachment 7 – Radionuclides – Example Form (CH only)
- Attachment 8 – Waste Containers List – Example Form
- Attachment 9 – Interface Waste Management Documents List – Example Form
- Attachment 10 – Acceptable Knowledge Re-evaluation Checklist – Example Form
- Attachment 11 – Acceptable Knowledge Source Document Discrepancy Resolution – Example Form
- Attachment 12 – Example Form and Content Guide for AK Summary Reports
- Attachment 13 – CCP Waste Stream Characterization Checklist – Example Form
- Attachment 14 – CCP Acceptable Knowledge Accuracy Report – Example Form
- Attachment 15 – CCP TRU Waste Correlation and Surrogate Summary Form – Example Form

The attached forms are provided as examples for the required AK information to be prepared for CCP Records. The forms identify the minimum information that will be prepared to document the AK collection and review process described in this procedure. Attachment 4, Acceptable Knowledge Information List – Example Form, lists all of the information that was collected and considered during the preparation of an AK Summary Report. Only those sources of information that are referenced in the AK Summary Report are considered source documents and submitted to CCP Records.

Remote-Handled (RH) TRU AK management will be performed in accordance with WCPIP to address U.S. Environmental Protection Agency (EPA) requirements; and CCP-PO-001 to address WIPP-WAP requirements. The attachments for AK management in this procedure were reviewed and determined to meet or exceed the information requirements described for AK management in the WCPIP, and will be used, as appropriate, during the compilation, review, evaluation, and reporting associated with RH AK information.

2.0 REQUIREMENTS

2.1 References

Baseline Documents

- DOE/WIPP 89-004, *TRUPACT-II Content Codes* (TRUCON)

Referenced Documents

- DOE/LLW-217, *DOE Waste Treatability Group Guidance*. Idaho Falls, Idaho, INEL-Lockheed Idaho Technologies
- DOE/TRU-14-3425, *Annual Transuranic Waste Inventory Report – 2014*, (or current revision), Carlsbad, New Mexico, U.S. DOE Carlsbad Field Office
- DOE/WIPP-02-3122, *Transuranic Waste Acceptance Criteria For the Waste Isolation Pilot Plant*
- DOE/WIPP-02-3214, *Remote-Handled TRU Waste Characterization Program Implementation Plan*
- 20.4.1 NMAC, Hazardous Waste Management
- 40 CFR Part 261, *Identification and Listing of Hazardous Waste*
- CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- CCP-PO-002, *CCP Transuranic Waste Certification Plan*
- CCP-PO-003, *CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC)*
- CCP-PO-505, *CCP Remote-Handled Transuranic Waste Authorized Methods for Payload Control (CCP RH-TRAMPAC)*
- CCP-QP-002, *CCP Training and Qualification Plan*
- CCP-QP-005, *CCP TRU Nonconforming Item Reporting and Control*
- CCP-QP-008, *CCP Records Management*
- CCP-QP-010, *CCP Document Preparation, Approval, and Control*

- CCP-TP-002, *CCP Reconciliation of DQOs and Reporting Characterization Data*
- CCP-TP-069, *CCP Sealed Source Visual Examination and Packaging*
- CCP-TP-101, *CCP Off-Site Source Recovery Project Sealed Source Radiological Characterization*
- 42 U.S.C. 10101, *Nuclear Waste Policy Act of 1982*, U.S. Congress
- 40 CFR part 761, *Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions*, U.S. EPA

2.2 Training Requirements

- |
- 2.2.1 All CCP personnel performing this procedure will be trained and qualified in accordance with CCP-QP-002, prior to performing this procedure.

3.0 RESPONSIBILITIES

3.1 Site Project Manager (SPM)

- 3.1.1 Ensures that trained AK Experts (AKE) are available to implement this procedure in coordination with the Host site.
- 3.1.2 Approves, resolves, and requests re-evaluation of AK as necessary.
- 3.1.3 Makes final waste stream determinations, EPA Hazardous Waste Number assignments, and compares, confirms, and approves the AK documentation.
- 3.1.4 Prepares the AK Accuracy Report in conjunction with the AKE.
- 3.1.5 Confirms the chemical compatibility to the assigned TRUCON code and reviews the characterization data for each waste stream.
- 3.1.6 Transmits Site Management Representative (SMR) quarterly notifications that the Interface Waste Management Documents List are current to the AKE.
- 3.1.7 Coordinate the presentation of AK Briefings to CCP characterization personnel (per CCP-QP-002) and generator site SMR, point of contacts (POCs)/Subject Matter Experts (SMEs), or cognizant designees, directly involved with the generation of each waste stream.

3.2 CCP Inventory and AK Support Manager

- 3.2.1 Manage and direct AKEs to ensure qualified individuals are performing tasks specified.
- 3.2.2 Coordinate between AKE and SPM for development of AK Summary Reports and Waste Stream Profile Forms.
- 3.2.3 Provide site-by-site tracking of AK development to allocate AK resources as needed.

3.3 AK Expert (AKE)

- 3.3.1 Identifies, locates, compiles, documents, summarizes, and evaluates required AK information.
- 3.3.2 Delineates waste streams and assigns waste stream numbers.
- 3.3.3 Recommends hazardous waste determinations to the SPM.

- 3.3.4 Prepares and revises AK Summary Reports.
- 3.3.5 Collects, reviews, prepares, and submits source documents as necessary.
- 3.3.6 Prepares and revises the AK Sufficiency Determination Request.
- 3.3.7 Documents and resolves discrepancies with AK information and discrepancies identified during characterization.
- 3.3.8 Records meetings, telecommunications, interviews and other communications.
- 3.3.9 Completes and maintains AK Source Document Summary forms and Acceptable Knowledge Information Lists.
- 3.3.10 Reviews and verifies AK information.
- 3.3.11 Develops waste stream descriptions.
- 3.3.12 Assigns Summary Category Groups and Waste Matrix Codes, and estimates waste material parameter (WMP) weights.
- 3.3.13 Prepares auditable file of AK information.
- 3.3.14 Re-evaluates and updates AK as needed.
- 3.3.15 Reviews and concurs on the Waste Stream Profile Form (WSPF).
- 3.3.16 Supports the development of the AK qualification method(s) and compliance with the applicable Data Quality Objectives (DQOs) for RH waste streams in accordance with the WCPIP.
- 3.3.17 Prepares and maintains the Interface Waste Management Documents List for each waste stream, including the identification of the applicable procedure POCs/SMEs involved directly with the generation of each waste stream (Identified by the SMR). Updates the Interface Waste Management Documents List with new or revised procedures affecting the waste stream characteristics (physical, chemical, and radiological composition) or packaging prior to implementation of the procedure as they are identified and provided by the SMR.
- 3.3.18 Provides the Interface Waste Management Documents List to the SMR for concurrence.

- 3.3.19 Verifies new and revised procedures/documents with the generator site POCs/SMEs on the Interface Waste Management Documents List.
- 3.3.20 Performs an Acceptable Knowledge Assessment (AKA) for each waste stream to ensure that the AK documentation relating to the management of potentially reactive, ignitable, and incompatible TRU waste materials is adequate, current, and accurately described in existing AK Summary Reports.
- 3.3.21 Verifies waste management procedures/documents on the Interface Waste Management Documents List with the generator site POCs/SMEs during AKA and prior to adding new containers to the waste stream to ensure that the procedures/documents are current and accurately describe the activity being performed.
- 3.3.22 Prepares and presents (in conjunction with the SPM) AK Briefings for CCP characterization personnel in accordance with (CCP-QP-002) and generator site POCs/SME, or cognizant designees.
- 3.3.23 Supports the SPM in the preparation of AK Accuracy Reports and approves AK Accuracy Reports.
- 3.3.24 Provides completed Interface Waste Management Documents List to SPM.
- 3.3.25 Submits copy of completed Interface Waste Management Documents List to CCP Records.
- 3.3.26 Supports the preparation of Chemical Compatibility Evaluations.
- 3.4 Off-Site Source Recovery (OSR) Program
 - 3.4.1 For Los Alamos National Laboratory (LANL) sealed sources, assists the AKE in preparing the nondestructive assay (NDA) Memorandum discussed in step 4.4.25.
- 3.5 Nondestructive Assay (NDA) Expert Analyst (EA)
 - 3.5.1 Performs the assessment for the NDA Memorandum discussed in step 4.4.25 with the AKE.

3.6 Site Management Representative (SMR)

NOTE

The general SMR responsibilities to support the development of AK are listed below. The specific responsibilities are identified in and will be performed in accordance with the Site Interface Agreement.

- 3.6.1 Supports the AKE with the preparation and approval of the Interface Waste Management Documents List including the identification of the applicable procedure Points-of-Contact (POCs) involved directly with the generation of each waste stream.
- 3.6.2 Provides revisions to procedures on the Interface Waste Management Documents List, and provides new procedures affecting waste stream delineation (physical, chemical, and radiological characterization) or packaging to CCP prior to implementation of the procedure.
- 3.6.3 Performs quarterly reviews of the Interface Waste Management Documents List and notifies the SPM that the list is complete and includes the most current revision of the relevant procedures.
- 3.6.4 Identify the appropriate POCs for the review of the AK Summary Reports and to attend AK Briefings.

3.7 Transportation Engineer

- 3.7.1 Performs the assessment for the Chemical Comparability Evaluation Memorandum discussed in step 4.4.21 with the AKE.

4.0 PROCEDURE

NOTE

The data collection, documentation, and AK preparation steps can be performed in any sequence as long as the AK data collection requirements found in CCP-PO-001 are met.

NOTE

The attached forms referenced in this section are provided as examples for the required AK information to be prepared for CCP Records. The forms identify the minimum information that will be prepared to document the AK collection and review process described in this procedure. All attachments submitted must contain a header with the procedure number, revision number, procedure title, effective date, and page number as displayed in the Example Attachments. Attachments must also contain the Attachment number and title immediately following the header, as shown on the Example Attachments.

4.1 AK Documentation Management

AKE

- 4.1.1 As they are collected, maintain the compiled AK documents with reasonable care (protection from damage or loss).
- 4.1.2 Assign a unique tracking number to each document collected as AK information using the Acceptable Knowledge Information List (see Attachment 4 for an example), for each waste stream. Describe the specific convention used to assign the unique identifiers to the source documents in the AK Summary Report. Examples of source document categories are as follows:

(EXAMPLE)

C – Correspondence
D – Documents
M – Miscellaneous
P – Procedures and Published Documents
DR – Discrepancy Resolution
U – Unpublished Documents

4.2 Compiling AK Documentation

- 4.2.1 Locate and obtain source documents with assistance of the Host site for documents with reference sections, as applicable.
- 4.2.2 Compile (i.e., gather) source documents that identify TRU waste management program information in the Acceptable Knowledge Documentation Checklist , AK #s PR1-PR8 (see Attachment 1,

Acceptable Knowledge Documentation Checklist - Example Form,
for facilities that generated the waste stream.

NOTE

Information collected must be sufficient to accurately characterize the waste stream.

NOTE

Source documents may include published or unpublished documents, correspondence, databases, quality assurance (QA) protocols, operating procedures, work instructions, waste storage/disposal records, waste certification summaries, process flow diagrams, analytical and testing data packages from previous waste characterization activities, and other sources of information descriptive of elements on the Checklist.

- 4.2.3 Apply a unique waste stream number based on the information in the current revision of the *Annual Transuranic Waste Inventory Report* (ATWIR), and/or information from the Host site for each waste stream (Refer to CCP-TP-002, *CCP Reconciliation of DQOs and Reporting Characterization Data*, for appropriate numbering format).
- 4.2.4 Compile and record source documents that identify TRU waste stream-specific information specified in the Acceptable Knowledge Documentation Checklist, AK #s WS1-WS12 for each waste stream.
- 4.2.5 Compile and record source documents that identify additional AK documentation specified in the Acceptable Knowledge Documentation Checklist, AK #s S1-S16.
- [A] Obtain additional AK information as appropriate to augment required information and provide any other information obtained to further characterize the waste stream.
- [B] All additional specific, relevant AK documentation assembled and used in the AK process, whether it supports or contradicts any required AK documentation, shall be identified and an explanation provided for its use (e.g., identification of a toxicity characteristic). Document the resolutions of discrepancies associated with waste stream delineation on an Acceptable Knowledge Source Document Discrepancy Resolution (see Attachment 11, Acceptable Knowledge Source Document Discrepancy Resolution-Example Form), or in the AK Summary Report.
- [C] Additional documentation may be used to further document the rationale for the hazardous characterization results. If

discrepancies exist between additional information and the required information, assess and evaluate the information to determine the appropriate hazardous waste numbers consistent with Resource Conservation and Recovery Act (RCRA) requirements. Document the resolution of RCRA hazardous waste number assignment discrepancies on an Acceptable Knowledge Source Document Discrepancy Resolution (see Attachment 11, Acceptable Knowledge Source Document Discrepancy Resolution - Example Form), or in the AK Summary Report.

- 4.2.6 For LANL sealed sources, compile source documents that identify OSR-specific documentation specified in the Acceptable Knowledge Documentation Checklist, AK #s O1-O16.

[A] If source markings are needed to support radiological characterization, the SPM must verify that they have been documented in accordance with CCP-TP-069, *CCP Sealed Source Visual Examination and Packaging*.

NOTE

For RH waste streams, the documentation collected and compiled in Sections 4.1 and 4.2 may not be sufficient to meet the DQOs established for the selected parameters in accordance with the WCPIP. If there is insufficient AK information to address each of the DQOs, then either additional AK will be collected and/or the characterization methods described in the WCPIP will be initiated. A combination of AK and other characterization methods may be used to meet the WCPIP DQO requirements.

- 4.2.7 For RH waste, review the documentation compiled and determine which of the WCPIP DQOs that can be met using the AK information collected.
- 4.2.8 Collect additional AK documentation and/or identify the characterization method(s) recommended to meet the DQO in accordance with the WCPIP (see step 4.4.34[O]).

NOTE

Interface Waste Management Documents List – (Example Form Attachment 9) will be initiated and maintained for each waste stream. The purpose of this form is to identify and maintain a current list of generator site plans, procedures, and reports associated with waste management, generation, treatment, packaging, repackaging, remediation, waste stream delineation, and characterization activities to be reviewed before containers are added to the Waste Containers List (see Section 4.4.28) or Container Tracking Spreadsheet (See Section 4.11). In addition, the form identifies the POCs consisting of SMEs and/or site representatives from the groups directly involved with the generation, characterization, and management of containers in the waste stream.

4.2.9 Identify active and planned site operations that directly affect the waste stream characteristics (physical, chemical, and radiological composition) or packaging of the waste stream; including, as applicable:

- Active waste generating process operations (including maintenance activities),
- Waste retrieval activities,
- Waste packaging and repackaging processes (including the remediation of prohibited items),
- Waste treatment/processing (e.g., waste neutralization, deactivation, and solidification/immobilization),
- Waste inspection, testing, and characterization activities,
- Decontamination and Decommissioning (D&D) operations.

4.2.10 Record the relevant generator site documents associated with activities identified in step 4.2.9 for active waste streams on the Interface Waste Management Documents List (Attachment 9); including, as applicable:

- Process descriptions
- Facility Safety and Analysis Reports,
- Standard operating procedures,
- Work and test plans,
- Work/field instructions (e.g., field changes, intermediate field changes, and timely orders/standing orders),

- Sampling and analysis plans, and
- Physical, chemical, and radiological studies/evaluations.

4.2.11 Verify with the SMR that the list is complete **AND** that the list identifies the most current revision for each document.

NOTE

For CCP active waste streams which include unshipped containers generated prior to implementation of Revision 27 of this procedure, the initial Interface Waste Management Documents List will be verified. An AKA is performed (see Section 4.13) to document this verification with the generator site SMR, POCs, and SMEs.

4.2.12 **IF** any identified document has not already been collected for the waste stream or the current revision of the document has not been provided,
THEN obtain the document to be included in the AK record for the waste stream.

4.2.13 Contact the SMR to identify the generator site POCs/SMEs for each document/procedure and include the contact information in the Interface Waste Management Documents List.

4.2.14 For procedures that have been verified during an AKA as described in Section 4.13, include the date of procedure verification in the "Verification Date" block of the Interface Waste Management Documents List. During subsequent updates of the list, record the date from the Attachment 3, Acceptable Knowledge Source Document Summary – Example Form (see Section 4.3.9 through 4.3.15) prepared for new documents or revisions of existing documents.

4.2.15 Review new and revised procedures affecting the waste stream characteristics or packaging associated with the activities listed in Section 4.2.9 and ensure the Interface Waste Management Documents List is updated, as needed.

4.2.16 Print name, sign, and date the Interface Waste Management Documents List.

NOTE

As specified in the Site Interface Agreement, it is the responsibility of the SMR to only submit Quarterly SMR Notifications for waste streams expected to generate additional containers of TRU waste or if containers in the waste stream will be repackaged or remediated.

4.2.17 Submit Interface Waste Management Documents List and associated Quarterly SMR Notifications to the SPM to submit to CCP Records.

4.3 Recording AK Documentation

NOTE

There are two categories of source documents used to document AK for a waste stream. Documentation generated by CCP and documents and/or other media supplied by the generator site. Generator site provided documents and/or other media are external records created by the waste generator sites and are identified in this procedure as "historical source documents."

4.3.1 Copy the document or the pertinent information from the document that defines source document contents, including cover sheets, executive summaries, introductions, and table of contents, if available **AND** maintain this information in the working files.

NOTE

Classified material **CAN NOT** be copied. If source documents are classified, an unclassified summary will need to be provided by the Host site or the document will be developed and summarized on an Acceptable Knowledge Source Document Summary (see Attachment 3, Acceptable Knowledge Source Document Summary - Example Form), by the AKE **AND** reviewed by the Site's Authorized Derivative Classifier for release.

4.3.2 Record meetings, telecommunications, interviews, and other communication on a Record of Communication (see Attachment 2, Record of Communication - Example Form), including a detailed summary of the content of the communication and data limitations.

NOTE

To avoid redundancy, a Record of Communication form may **NOT** be required if the information is already provided on an interview-related source document.

Verification of new or revised procedures with POCs/SMEs may be recorded on Attachment 3, Acceptable Knowledge Source Document Summary form.

- 4.3.3 As necessary, prepare a memorandum or letter to CCP Records and Record of Communication, as appropriate, documenting the method used by the AKE to review AK source documents for the purpose of evaluating required AK parameters such as radionuclides, Waste Matrix Codes, assignment of EPA Hazardous Waste Numbers, estimating waste material parameter weights, AK Assessments, chemical compatibility evaluations, etc. The memorandum must identify the sources of AK used during the evaluation and clearly document the AKE assumptions and conclusions.
-

NOTE

Collection and review of AK source documents is an ongoing activity. It is conducted initially during the development of the AK Summary Report and continues as additional information becomes available during subsequent waste stream characterization and management activities. Completion of the Acceptable Knowledge Source Document Summary (see Attachment 3 for an example), for the source documents is an iterative process performed during these activities.

If the source document is a collection of information (i.e., container data sheets, material safety data sheets [MSDS] sheets, etc.) provide a description in the Title field of the Attachment 3 and ensure that it matches the Title field in the AK Source Document section of the AK Summary Report.

Information documents collected but not referenced in the AK Summary Report are not required to be summarized on an Attachment 3.

- 4.3.4 Initiate an Acceptable Knowledge Source Document Summary for each source document that includes detail sufficient to justify the use of the information. The Acceptable Knowledge Source Document Summary must be completed by the time the associated AK Summary Report is finalized for all AK source documents referenced within the report. Identify the specific waste stream or streams that correspond to the source document in the Waste Stream Number field on Attachment 3. If a comprehensive library is used for all streams at the site, note this in this field.

- [A] Source documents referenced in the AK Summary Report and their applicable attachments must be submitted to CCP Records on or before the date of issuance of the AK Summary Report as final.

- 4.3.5 **IF** the summary consists of multiple pages,
THEN provide the unique source document tracking number on each page **AND** paginate the number of pages (e.g., 2 of 6 pages).
- 4.3.6 Print name, sign, and date the Acceptable Knowledge Source Document Summary before submitting to CCP Records.
- 4.3.7 For source documents that **CAN NOT** be reproduced or removed from the source (e.g., classified documents or databases), indicate on the Acceptable Knowledge Source Document Summary that a copy of the source document is **NOT** available, and state the reason.
- 4.3.8 Include a note on the limitations of the information (e.g., if a document covers a specific period of time) on the Acceptable Knowledge Source Document Summary.

NOTE

Containers packaged to a new procedure or revision that could result in a change to the waste stream characteristics (i.e., physical, chemical, or radiological composition of the waste) or packaging, cannot be added to the Acceptable Knowledge Tracking Spread Sheet (AKTSS) until the changes have been evaluated by the AKE to determine if the procedure change requires a revision to the AK Summary Report. If a revision is required the AK Summary Report must be revised and approved before any containers are added to the AKTSS for characterization.

- 4.3.9 Assess new and revised procedures/documents received from the SMR to determine if they affect the waste stream characteristics (physical, chemical, or radiological composition) or packaging for active waste streams.
- 4.3.10 **IF** it is determined that a new procedure affects waste stream characteristics (physical, chemical, or radiological composition) or packaging,
THEN update the Interface Waste Management Documents List as described in Sections 4.2.9 through 4.2.17 to include the procedure **AND** include the following additional verification information in the Acceptable Knowledge Document Summary form, as applicable:
- [A] Description of activities affecting waste stream characteristics or packaging,
 - [B] Interface Waste Management Documents List POCs/SMEs contacted by the AKE to verify (walk down) the procedure, and
 - [C] Summary of verification discussion.

4.3.11 **IF** it is determined that the changes in a revision to a procedure currently listed on the Interface Waste Management Documents List do NOT affect waste stream characteristics or packaging, **THEN** update the Interface Waste Management Documents List as described in Sections 4.2.9 through 4.2.17 to include the procedure revision **AND** note in the Attachment 3, Acceptable Knowledge Source Document Summary that the review did not identify any relevant changes to waste management from the previous revision(s).

4.3.12 **IF** it is determined that that the changes in a revision to a procedure currently listed on the AK Documents List affect waste stream characteristics or packaging, **THEN** update the Interface Waste Management Documents List as described in Sections 4.2.9 through 4.2.17 to include the procedure **AND** include the following additional verification information in the Acceptable Knowledge Document Summary form, as applicable:

- [A] Description of the changes to activities affecting waste stream characteristics or packaging,
- [B] Interface Waste Management Documents List POCs/SMEs contacted by the AKE to verify (walk down) the procedure, and
- [C] Summary of verification discussion.

4.3.13 Submit the revised Interface Waste Management Documents List(s), procedures, and revised Acceptable Knowledge Document Summary for new procedures (or revisions) affecting waste stream characteristics or packaging to the CCP Records.

NOTE

Attachment 4 is a listing of relevant documents collected during the investigative process. Documents collected must be categorized in accordance with step 4.1.2.

4.3.14 Create and maintain an Acceptable Knowledge Information List that includes the following:

- Site, waste stream number, and waste stream description
- Source document tracking number
- Source document title or description
- Name of author

- Original document number, or publisher's document number (if available)
- Revision number and document date (if applicable)

4.3.15 Print name, sign, and date the Acceptable Knowledge Information List before submitting to CCP Records.

4.4 Review and Submittal of AK Documentation

4.4.1 Evaluate the waste stream to verify that the waste materials do not meet the definition of spent nuclear fuel or high-level waste as defined in the in Section 10101(3) of the *Nuclear Waste Policy Act of 1982*.

4.4.2 Evaluate the waste stream to verify that the waste materials meet the definition of defense waste defined in CCP-PO-002.

NOTE

According to CCP-PO-002, a TRU waste is eligible for disposal at WIPP if it has been generated in whole or in part by one or more of the following functions:

- Naval reactors development
- Weapons activities including defense inertial confinement fusion
- Verification and control technology
- Defense nuclear materials production
- Defense nuclear waste and materials by-products management
- Defense nuclear materials security and safeguards and security investigations
- Defense research and development

4.4.3 **IF** there is no information linking the waste stream to defense related activities or commingled with defense materials, **OR** if the waste contains spent nuclear fuel or high-level waste, **THEN** notify the SPM.

4.4.4 Document the defense determination, high-level waste and spent nuclear fuel assessments in the AK Summary Report.

4.4.5 Verify that 100 percent of the information specified in Acceptable Knowledge Documentation Checklist from AK #s PR1 through PR8 and WS1 through WS12 has been compiled.

- 4.4.6 **IF** 100 percent of this information is **NOT** available for a particular waste stream,
THEN notify the SPM that waste is **NOT** eligible for disposal at WIPP without the collection of additional information to augment the existing AK.
- 4.4.7 For LANL sealed sources waste containers, verify that the information on Acceptable Knowledge Documentation Checklist, AK #s O1-O16 has been compiled.
- 4.4.8 Review all AK information compiled in Section 4.2 of this procedure.
- 4.4.9 Document and resolve discrepancies regarding AK information among AK source documents as described in Section 4.9 of this procedure.
- 4.4.10 Print name, sign, and date the Acceptable Knowledge Documentation Checklist once the collection and review of the required AK information has been completed.

NOTE

A waste stream is defined as waste materials that have common physical form, that contain similar hazardous constituents (similar radiological properties for WCPIP compliance), and that are generated from a single process or activity. This definition will be used to obtain information for the waste stream specific description to be written in step 4.4.35.

- 4.4.11 Using the definition of a waste stream from above, the waste stream-specific documentation from the Acceptable Knowledge Documentation Checklist, and, if applicable, the description from the ATWIR, define the waste stream represented by the compiled AK information, **AND** provide this description in the AK Summary Report (see Attachment 12, Example Form and Content Guide for AK Summary Reports, for a format and content guide to be used when preparing the AK Summary Report). Provide a discussion to justify combining previously identified (i.e., ATWIR or site designations), TRU mixed waste and TRU non-mixed waste streams.

NOTE

A Waste Matrix Code will be assigned based on the physical form of the waste. DOE/LLW-217, *DOE Waste Treatability Group Guidance*, describes the convention for assignment of Waste Matrix Codes for low-level waste treatability groups, and can be used as the basis for the assignment of Waste Matrix Codes that bound the waste stream.

4.4.12 Assign and describe the Waste Matrix Code assigned to each waste stream identified.

NOTE

The Waste Matrix Code Groups identified in CCP-PO-001 are:

- Solidified inorganics
 - Solidified organics
 - Salt waste
 - Soils
 - Lead/cadmium metal
 - Inorganic nonmetal waste
 - Combustive waste
 - Graphite
 - Filters
 - Heterogeneous debris waste
 - Uncategorized metals
-

4.4.13 Assign the waste stream to the appropriate Waste Matrix Code Group.

4.4.14 Assign the waste stream to the appropriate Summary Category Group as defined below:

- S3000 Homogeneous Solids – Homogeneous solids are defined as solid material, excluding soil, that does not meet the New Mexico Environment Department (NMED) criteria for classification as debris (20.4.1.800 New Mexico Administrative Code [NMAC] [incorporating 40 CFR §268.2(g) and (h)]). Included in the series of homogeneous solids are inorganic process residues, inorganic sludges, salt waste, and pyrochemical salt waste. Other waste streams are included in this Summary Category Group based on the specific waste stream types and final waste form. This Summary Category Group is expected to contain toxic metal and spent solvents. This category includes wastes that are at least 50 percent by volume homogeneous solids.
- S4000 Soil/Gravel – This Summary Category Group includes S4000 waste streams that are at least 50 percent by volume

soil/gravel. This Summary Category Group is expected to contain toxic metals.

- S5000 Debris Wastes – This Summary Category Group includes heterogeneous waste that is at least 50 percent by volume material that meets the criteria specified in 20.4.1.800 NMAC (incorporating 40 CFR §268.2[g]). Debris means solid material exceeding a 2.36 inch (60 millimeter) particle size that is intended for disposal and that is a manufactured object, plant or animal matter, or natural geologic material. Particles smaller than 2.36 inches in size may be considered debris if the debris is a manufactured object and if it is **NOT** a particle of S3000 or S4000 material.

4.4.15 **IF** waste **DOES NOT** include at least 50 percent of any given Summary Category Group by volume,
THEN assign the Summary Category Group constituting the greatest volume of waste for that waste stream.

4.4.16 Review the AK information to determine if the waste is listed under 20.4.1.200 NMAC (incorporating 40 CFR 261.30), Subpart D. If so, assign the appropriate hazardous waste numbers (HWNs).

4.4.17 Review the AK information to determine if a toxicity characteristic 20.4.1.200 NMAC (incorporating 40 CFR 261.20), Subpart C contaminant is identified and has **NOT** been assigned a listed HWN from step 4.4.16. Evaluate the available data and assign the toxicity characteristic HWN consistent with RCRA requirements.

4.4.18 Compare the HWNs assigned from steps 4.4.16 and 4.4.17 to the HWNs listed in CCP-PO-001, Table C-5.

4.4.19 **IF** any HWNs are **NOT** included in CCP-PO-001, Table C-5,
THEN notify the SPM.

4.4.20 Include the justification and basis for steps 4.4.16 and 4.4.17 in the TRU waste stream-specific description of AK Summary Report,
AND complete the Attachment 5 Hazardous Constituents form.

AKE/Transportation Engineer

4.4.21 Prepare a Chemical Compatibility Evaluation Memorandum and submit to CCP Records. The memorandum will be prepared with the Transportation Engineer responsible for assigning the appropriate TRUCON code to the waste stream. This evaluation must include:

- [A] A description of the methodology used for the quantification of the waste stream chemicals/materials evaluated,

- [B] Identification of AK source documentation used during the evaluation,
- [C] A description of the methodology used for the assessment of the compatibility of these chemicals/materials, **AND**
- [D] Documentation of technical assumptions and limitations associated with the evaluation.

AKE

4.4.22 Print name, sign, and date Hazardous Constituents form. Include the Chemical Compatibility Evaluation Memorandum described in step 4.4.21 as an addendum to Hazardous Constituents form.

4.4.23 Assess available AK radionuclide data.

NOTE

For LANL sealed sources, the SPM must confirm sufficient radionuclide data is available in accordance with CCP-TP-101, *CCP Off-Site Source Recovery Project Sealed Source Radiological Characterization*.

4.4.24 For contact-handled (CH) waste streams and RH waste streams characterized using NDA techniques, review all source documents to determine the two most prevalent radionuclides for the waste stream, and estimated isotopic ratios for the following 10 WIPP-required radionuclides: Sr-90; Cs-137; U-233; U-234; U-238; Pu-238; Pu-239; Pu-240; Pu-242; and Am-241.

AKE/NDA EA/OSR

4.4.25 Prepare an NDA Memorandum to CCP Records (CH waste only), evaluating the radionuclide characterization of the waste stream. The NDA Memorandum must include a section for an assessment written with the NDA EA determining how the AK will be applied during assay. For LANL sealed sources waste, the NDA Memorandum must be written with input from the OSR group. This assessment should include a discussion of the limitations of the radiological characterization in the AK document and a description of the required assay methods, if any. Any NDA issues for both measured and calculated radionuclides should be discussed and resolved.

4.4.26 **IF** AK is intended as the sole basis for meeting the radiological characterization requirements in CCP-PO-002, **THEN** state so in the AK Summary Report.

AKE

NOTE

During revisions to the AK Summary Report affecting the physical waste stream delineation, the AKE will evaluate the adequacy of the current waste material parameter weight estimates documented in current Waste Material Parameter Evaluation Memorandum and revise the waste material parameter weight estimates, if necessary.

4.4.27 Prepare a Waste Material Parameter Evaluation Memorandum to CCP Records that estimates the waste material parameter weights for the waste stream. During revisions to the AK Summary Report evaluate the adequacy of the current Waste Material Parameter Evaluation Memorandum and revise, if necessary. The expected weight percent for each waste material parameter will be calculated using historical waste generator information for the materials in the waste stream or industry documentation for similar waste inventories. This evaluation should include the technical assumptions, justification, and limitations for the estimated weight percentages.

NOTE

The WIPP-WAP allows the generator to utilize visual examination (VE) and real-time radiography (RTR), if there is insufficient AK to estimate for the waste material parameter weight percentages.

4.4.28 Complete the following forms as appropriate:

- [A] See Attachment 6, Waste Form, Waste Material Parameters, Prohibited Items, and Packaging - Example Form for an example. Include the Waste Material Parameter Evaluation Memorandum described in step 4.4.27 as an addendum to Waste Form, Waste Material Parameters, Prohibited Items, and Packaging.
- [B] See Attachment 7, Radionuclides - Example Form (CH only), for an example. Include the NDA Memorandum (signed by the AKE and NDA EA) described in step 4.4.25 as an addendum to Radionuclides.
- [C] See Attachment 8, Waste Containers List – Example Form, (or an equivalent form, e.g., spreadsheet). Prepare or update the Container Tracking Spreadsheet as described in Section 4.11 for the containers identified in Waste Containers List and corresponding Waste Stream Container Evaluation Memorandum prepared in steps 4.10.3 and 4.10.5.

4.4.29 Print name, sign, and date all forms generated in step 4.4.28.

4.4.30 Review the waste management program AK documentation specified on the Acceptable Knowledge Documentation Checklist, **AND** write a TRU Waste Management Program Description that addresses AK #s PR1-PR8 in Acceptable Knowledge Documentation Checklist. Include the following:

- Correlation to the waste stream identification and description found in the ATWIR or indication that the waste stream was not included in the ATWIR.
- Determination of whether the TRU waste materials were generated as a result of, or mixed with materials from, defense-related activities as specified in CCP-PO-002.

4.4.31 **IF** prohibited items or incompatible materials are listed on the Waste Form, Waste Material Parameters, Prohibited Items, and Packaging, **THEN** perform the following:

[A] Notify the SPM.

SPM

[B] Notify the Host site as directed in the Interface Document between CCP and that site.

AKE

4.4.32 Correlate TRU waste management program information (AK #s PR1 - PR8) and TRU waste stream-specific information (AK #s WS1 - WS12) with regard to the time of generation, waste generation processes, rate and quantity of newly generated waste (when appropriate), and areas and building or facility where the waste stream was generated (Acceptable Knowledge Documentation Checklist).

4.4.33 Identify AK source document tracking numbers, as applicable, in the TRU waste management program description and TRU waste stream-specific description.

4.4.34 Review the waste stream-specific AK documentation specified on the Acceptable Knowledge Documentation Checklist and information developed in steps 4.4.11 through 4.4.33), **AND** describe the waste stream in the AK Summary Report, including the following:

- [A] Waste stream description and waste stream number. The waste stream number is limited to 20 alpha-numeric characters.
- [B] Explain the selection of the Waste Matrix Code in the TRU waste stream-specific description of the AK Summary Report.
- [C] Ensure the description of the waste stream is sufficient to allow the radiography and VE Operators to determine whether the waste in individual containers is included in the waste stream and the physical form of the waste matches the waste stream description.
- [D] Include the justification and basis for determination of waste material parameters weights expected in the waste stream.
- [E] Include the justification and basis for the method by which the radionuclide AK has been compiled.
- [F] For waste streams characterized using NDA, state the method for determination of the (2) most prevalent radionuclides (see CCP-PO-002).
- [G] Include the following assessment information:
 - Waste identification and categorization schemes relevant to the isotopic composition of the waste
 - Description of the isotopic composition of waste streams
 - Physical/chemical composition that could affect isotopic distributions
 - Numerical adjustments (e.g., scaling factors, decay/ingrowth corrections and secular equilibrium consideration) applied to derive isotopic compositions
 - Specification of the isotopic ratios for the 10 WIPP - tracked radionuclides
 - Radionuclides other than the ten WIPP-tracked radionuclides that contribute to 95 percent of the radioactive hazard for a payload container
- [H] Provide justification for the assumption that the waste stream is TRU waste (i.e., it contains more than 100 nanocuries [nCi] of alpha-emitting radionuclides with half-lives greater

than 20 years per gram of waste), as specified in CCP-PO-002.

- [I] For waste streams with containers selected for payload management, include an assessment estimating the percentage of the TRU waste stream volume above and below 100 nanocuries per gram (nCi/g) in accordance with CCP-PO-002. The AK Summary Report must demonstrate that the waste stream has been historically managed as TRU waste, as applicable for payload management.
- [J] Provide justification for determining the estimated concentration (less than or equal to 1 percent or greater than 1 percent by weight) of beryllium (metal and oxides) for each payload container within the waste stream as required in CCP-PO-002.
- [K] Provide justification for determining that prohibited items are not present in the waste stream or describe the potential prohibited items and how they will be identified and remediated. Identify process controls associated with the management of prohibited items, physical form, and hazardous waste content.
- [L] Provide justification for determining if any waste in the waste stream contains polychlorinated biphenyls (PCBs) in concentrations equal to or greater than 50 parts per million (ppm). Identify the type of waste containing PCB contamination (e.g., remediation, bulk product), **AND** provide justification for determining that the waste stream will **NOT** contain residual PCB liquids as defined in CCP-PO-002.
- [M] For waste streams assigned the EPA Hazardous Waste Number U134 for hydrofluoric acid, provide information demonstrating neutralization of this acid, if available, as required by CCP-PO-001.
- [N] **IF** correlating or surrogate information from similar materials or waste streams generated at the same site or other sites is used to support the characterization of an RH waste stream, **THEN** complete the CCP TRU Waste Correlation and Surrogate Summary Form (see Attachment 15, CCP TRU Waste Correlation and Surrogate Summary Form – Example Form) **AND** describe the use of the information in the AK Summary Report.

- [O] For RH waste streams, identify the AK and/or characterization methods to be used to meet the DQOs. Identify how each DQO will be met and describe the qualification method(s) selected for AK used solely to meet a specific DQO in the AK Summary Report.

4.4.35 Summarize the waste stream-specific description in Section 2.0 of the AK Summary Report. Provide a physical, chemical, and radiological description of the waste stream in Section 5.0 of the AK Summary Report (see Attachment 12 for an example format and content guide to be used when preparing the AK Summary Report). This description may be abbreviated for use on attachments as needed.

NOTE

Use the Example Form and Content Guide for AK Summary Reports in Attachment 12 to prepare the AK Summary Report. This guide provides the recommended format for preparation of the reports. However, the format of the report and content of the sections may vary, as long as the required AK elements are presented.

4.4.36 Prepare the AK Summary Report by combining the TRU waste management program description and each of the completed TRU waste stream-specific descriptions, as well as the information from forms 1-8 and Acceptable Knowledge Source Document Discrepancy Resolution (see Attachment 11 for an example), if applicable.

4.4.37 Submit the AK Summary Report to Document Services to initiate the review and approval process in accordance to CCP-QP-010, *CCP Document Preparation, Approval, and Control*.

NOTE

Electronic media for historical source documents shall be managed in accordance with CCP-QP-008, *CCP Records Management*.

4.4.38 Submit records identified in Section 5.0 to CCP Records in accordance with CCP-QP-008.

NOTE

As the AK Summary Report is revised, resubmit report to CCP Document Services.

4.5 Waste Stream Characterization

NOTE

The following comparison may be performed for a waste stream or a waste stream lot.

SPM

- 4.5.1 Ensure that audit and other internal and external surveillance reports relating to CCP characterization programs are available.
- 4.5.2 **IF** any AK Sufficiency Determination Request has been approved by Carlsbad Field Office (CBFO) for any characterization parameter (see Section 4.7),
THEN note the approval for that parameter on the CCP Waste Stream Characterization Checklist (see Attachment 13, CCP Waste Stream Characterization Checklist - Example Form).
- 4.5.3 Compare the testing results from VE and Radiography, and NDA characterization activities to the waste stream AK by completing a CCP Waste Stream Characterization Checklist, to certify a waste stream (or lot) for disposal at WIPP.

[A] Radiography and VE Data

- [A.1] Compare Radiography and VE results (obtained from CCP Records) in VE Data Forms, and Radiography Data Sheets to AK information in Waste Form, Waste Material Parameters, Prohibited Items, and Packaging of this procedure to verify the physical form of the waste stream and absence of prohibited items.
- [A.2] **IF** AK information **CAN NOT** be resolved upon completion of these comparisons,
THEN note any inconsistencies on CCP Waste Stream Characterization Checklist, **AND** proceed with Section 4.8 of this procedure.

[B] NDA Data – CH Waste

- [B.1] Compare radionuclides reported on Attachment 7 by Weight percent, Activity, or other parameters justified in the AK Summary Report with NDA Radioassay results.
- [B.2] Compare the two most prevalent radionuclides in AK with those identified in the NDA results for the waste stream and waste stream lot.
- [B.3] Compare the radionuclides identified by the AK as expected to be present with those reported in the NDA results.
- [B.4] Report the differences between NDA results and those expected from AK in the Comments section of the CCP Waste Stream Characterization Checklist.
- [B.5] Provide rationale in the Comment section of CCP Waste Stream Characterization Checklist, if any of these conditions were anticipated based on AK.
- [B.6] Attach applicable data and description to CCP Waste Stream Characterization Checklist.
- [B.7] **IF** AK information **CAN NOT** be resolved upon completion of these comparisons, **THEN** note any inconsistencies on CCP Waste Stream Characterization Checklist, **AND** proceed with Section 4.8 of this procedure.

[C] Radiological Characterization – RH Waste

- [C.1] Identify the characterization method (e.g., Dose-to-Curie) on the CCP Waste Characterization Checklist.
- [C.2] Identify the drums in which the radiological characterization differ from that expected; provide rationale in the Comments section of the CCP Waste Stream Characterization Checklist, if this condition was anticipated, otherwise notify the AKE to perform a re-evaluation as described in Section 4.8 of this procedure.

[C.3] Attach data and applicable description to CCP Waste Stream Characterization Checklist.

4.5.4 **IF** AK information can be resolved upon completion of the comparisons with the testing results,
THEN print name, sign, and date CCP Waste Stream Characterization Checklist, **AND** forward it to the AKE for signature **AND** submit to CCP Records.

4.6 Determining AK Documentation Accuracy

NOTE

The quality assurance objectives (QAOs) and their applicability to AK are discussed in CCP-PO-001. Separate evaluations of AK accuracy are required by the WIPP-WAP for CH and RH waste streams and the WCPIP for RH waste streams. The measurement of AK accuracy begins once the waste stream is delineated in an AK Summary Report.

SPM

4.6.1 Obtain a copy of the completed CCP Waste Stream Characterization Checklist, **AND** any Acceptable Knowledge Re-evaluation Checklists (see Attachment 13, CCP Waste Stream Characterization Checklist), applicable to the waste stream or waste stream lot, and any related supporting documentation from CCP Records (e.g., Discrepancy Resolutions and NCRs).

NOTE

The AK Accuracy Memorandum is used to document the percentage of containers reassigned to a new Waste Matrix Code, designated with a hazardous waste number assignment different from AK, or inconsistent with anticipated radionuclide composition determined from AK when compared to CCP testing and Permittee confirmation testing results.

NOTE

The WCPIP does not require the evaluation of AK accuracy relating to EPA Hazardous Waste Number assignment; however, the reassignment of a container to another RH waste stream or new RH waste stream based on CCP testing or Permittee confirmation testing results will count against the AK accuracy for TRU waste streams.

NOTE

For AK Accuracy Memoranda that are prepared for waste stream lots within a waste stream, updates to AK accuracy shall be issued periodically. At a minimum AK Accuracy Memoranda will be prepared following the characterization of all containers in a waste stream or annually for waste streams generated on an on-going basis.

4.6.2 Complete the CCP Acceptable Knowledge Accuracy Report (see Attachment 14, CCP Acceptable Knowledge Accuracy Report - Example Form), after characterization has been completed for a subset of containers in the subject CH or RH waste stream or waste stream lot.

4.6.3 Prepare an NMED (RH and CH) and EPA (RH only) AK Accuracy Memorandum summarizing the following AK accuracy information:

- [A] Purpose
- [B] Methodology
- [C] Results of accuracy determination
- [D] Other considerations, if applicable
- [E] Summary

4.6.4 For RH waste, **IF** the AK accuracy falls below 90 percent for assigning containers to a Summary Category Group, **THEN** CBFO shall be notified.

NOTE

For RH waste, significant discrepancies between the radionuclide information in the AK record and measured values will be assessed during preparation of the Acceptable Knowledge Accuracy Report. What constitutes a significant discrepancy will depend on site- and waste stream-specific considerations for each waste stream.

4.6.5 For RH waste, describe any significant discrepancies between the radionuclide information in the AK record and measured values in the Acceptable Knowledge Accuracy Memorandum.

4.6.6 Review, print name, sign, and date the CCP Acceptable Knowledge Accuracy Report. At the option of the SPM, CCP Acceptable Knowledge Accuracy Report may list only the containers with accuracy issues, as long as the complete list of containers represented by the accuracy report is included by attachment to, or referenced in, the cover memorandum or letter.

4.6.7 Attach the following to the AK Accuracy Memorandum:

- [A] CCP Acceptable Knowledge Accuracy Report (Attachment 14), prepared for the NMED AK Accuracy Memorandum only.
- [B] CCP Correlation of Container Identification Numbers to BDR numbers prepared in accordance with CCP-TP-002.

4.6.8 Transmit AK Accuracy Memorandum and attachments to the AKE.

AKE/SPM

4.6.9 For NMED AK Accuracy Memoranda (CH and RH), review the AK Accuracy Memorandum and attachment, resolve any comments with the SPM, **AND** approve by printing name, signing, and dating the CCP Acceptable Knowledge Accuracy Report form **AND** return to the SPM to submit to CCP Records.

4.6.10 For EPA AK Accuracy Memoranda (RH only), review the AK Accuracy Memorandum and attachments, resolve any comments with the SPM, **AND** approve by printing name, signing, and dating the CCP AK Accuracy Memorandum form **AND** return to the SPM to submit to CCP Records.

4.7 AK Sufficiency Determination

SPM/AKE

NOTE

An AK Sufficiency Determination Request to meet all or part of the waste characterization requirements may be used if AK information available for a waste stream permits.

4.7.1 Evaluate the AK information available for a waste stream to determine if an AK Sufficiency Determination is possible or desirable.

4.7.2 Prepare an AK Sufficiency Determination Request that includes the following information:

- [A] An introduction that briefly describes the waste stream, the type of AK Information available, whether AK alone can be used to meet the characterization requirements.
- [B] Identification of any mandatory requirements supported only by upper tier documents (i.e., there is insufficient supporting data).

- [C] Description demonstrating that the AK process described in CCP-PO-001 was followed (for example, AK personnel were appropriately trained; discrepancies were documented).
- [D] Information demonstrating that CCP has assessed the AK process (e.g., internal audits).

4.7.3 Obtain copies of the following information from CCP Records and attach to the AK Sufficiency Determination Request:

- [A] AK Summary Report for the waste stream;
- [B] Acceptable Knowledge Documentation Checklist providing an AK roadmap and cross reference between mandatory programmatic and waste stream information with references supporting these requirements.
- [C] Acceptable Knowledge Information List, providing a complete reference list including all mandatory and additional AK documentation.
- [D] Current revision of this procedure to demonstrate that CCP has developed a written procedure for compiling AK information and assigning hazardous waste numbers.
- [E] Relevant additional information for the required programmatic and waste stream data addressed in the AK Summary Report, as applicable or if requested by CBFO.

4.7.4 Submit the AK Sufficiency Determination Request and attachments to the SPM for approval and submittal to CBFO.

4.7.5 **IF** comments are received from CBFO,
THEN address the comments and resubmit the AK Sufficiency Determination Request.

4.8 Re-evaluating AK Documentation

NOTE

Differences in Waste Matrix Codes, state and EPA Hazardous Waste Numbers, and NDA results may exist between those previously assigned in the AK documentation and those indicated as a result of waste characterization activities performed to certify waste for disposal at the WIPP or during the confirmation performed by the Permittee. Under these circumstances, the AK information is re-evaluated and the required AK information associated with the new designation is documented. Characterization data associated with the waste is re-evaluated and changes in AK resulting from the re-evaluation are documented.

SPM

- 4.8.1 **IF** re-evaluation is warranted as a result of 1) inconsistencies noted during the process of comparing AK information to characterization results **OR** 2) the initiation of a nonconformance report (NCRs) that identifies potential changes to the AK of a waste stream (including NCRs generated as a result of discrepancies identified during confirmation performed by the Permittee), **THEN** notify the AKE.

AKE

- 4.8.2 Retrieve copies of applicable characterization data and AK information from CCP Records.
- 4.8.3 **IF** a waste must be assigned to a different Waste Matrix Code (i.e., different waste stream or waste stream lot) based on Radiography or VE, **THEN** perform the following:
- [A] Review existing information based on the waste container identification number and document all differences in EPA HWN assignments. Consider all generator specific waste streams and hazardous waste number assignments; original site-specific permit requirements; and other state-enforced agreements in this analysis.
 - [B] **IF** differences exist in the EPA Hazardous Waste Numbers that were assigned, **THEN** reassess **AND** document required applicable AK information associated with the new designation.
 - [C] Reassess **AND** document applicable testing data associated with the waste.

- [D] Verify **AND** document that waste with a reassigned Waste Matrix Code was generated within the specified time period, area buildings and waste generating process; **AND** that the process material inputs are consistent with the waste material parameters identified during Radiography or VE.
 - [E] Record all changes to the AK records on the appropriate forms **AND** resubmit to CCP Records.
 - [F] **IF** unresolved discrepancies exist in the AK information for the reassigned Waste Matrix Code, EPA Hazardous Waste Numbers, or radionuclides, **THEN** document the segregation of this container, **AND** define the actions necessary to fully characterize the waste.
- 4.8.4 **IF** testing results indicate that additional or different EPA Hazardous Waste Numbers may apply to the waste, **THEN** review the existing AK and characterization information, **AND** perform the following:
- [A] **IF** a hazardous waste, not originally identified by AK, has been identified during testing (lead items, circuit boards, etc.), **THEN** assign the applicable state and EPA Hazardous Waste Numbers unless an alternative assignment can be justified or representative quantitative data are available to preclude the assignment.
- 4.8.5 **IF** NDA results indicate the presence of additional radionuclides or different prevalent radionuclides in the waste, **THEN** review existing AK and characterization information.
- 4.8.6 **IF** changes are required, **THEN** document the need for changes in the appropriate comment section of the Acceptable Knowledge Re-evaluation Checklist.
- 4.8.7 Resolve all AK documentation discrepancies, if applicable, as described in Section 4.9 of this procedure.
- 4.8.8 Modify the AK Summary Report as appropriate.
- 4.8.9 Forward the completed Acceptable Knowledge Re-evaluation Checklist **AND** the revised AK Summary Report to the SPM for review and approval.
- 4.8.10 Submit changes to the Document Writers for distribution and approval.

SPM

- 4.8.11 Review the Acceptable Knowledge Re-evaluation Checklist and the revised AK Summary Report.
- 4.8.12 **IF** the AK Summary Report requires correction,
THEN return to AKE.
- 4.8.13 **IF** no correction is required,
THEN approve the Acceptable Knowledge Re-evaluation Checklist by printing name, signing, and dating the checklist.
- 4.8.14 Approve the revised AK Summary Report.
- 4.8.15 Review the WSPF to see if the change to the AK Summary Report affects the WSPF.
- 4.8.16 **IF** the WSPF requires change,
THEN revise the WSPF in accordance with CCP-TP-002.
- 4.8.17 Submit the Acceptable Knowledge Re-evaluation Checklist and revised AK Summary Report to CCP Records.
 - [A] Any new source documents referenced in the revised AK Summary Report and the applicable attachments must be submitted to CCP Records on or before the date of issuance of the revised AK Summary Report as final.
- 4.8.18 Once the re-evaluation is approved, complete the CCP Waste Stream Characterization Checklist, as described in step 4.5.3.

4.9 Resolving AK Discrepancies

NOTE

AK discrepancies may be identified during AK source document compilation, review, characterization, confirmation, and re-evaluation activities.

AKE

- 4.9.1 Document the nature of the discrepancy **AND** identify the documents involved for the particular waste stream or waste container on the Acceptable Knowledge Source Document Discrepancy Resolution or in the appropriate section of the AK Summary Report.
- 4.9.2 Use information from interviews, telephone contacts, or other correspondence or other supporting information to resolve the discrepancy.

- 4.9.3 Record interviews, telephone conversations, and correspondence needed to resolve discrepancy issues on a Record of Communication.
- 4.9.4 Print name, sign, and date a Record of Communication.
- 4.9.5 Complete an Acceptable Knowledge Source Document Summary for each Record of Communication form.
- 4.9.6 Print name, sign, and date Acceptable Knowledge Source Document Summary, attach to the Record of Communication form, **AND** submit to CCP Records.
- 4.9.7 Verify that process inputs (hazardous constituents and waste material parameters) are consistent with waste material parameters identified during Radiography and VE.
- 4.9.8 Assign **OR** revise the AK identified waste material parameters, as necessary, **AND** document the change and the assumptions made on the Acceptable Knowledge Source Document Discrepancy Resolution.
- 4.9.9 Assign **OR** reassign Waste Matrix Codes, as necessary, using guidance specified in the DOE/LLW-217, **AND** document the assignment and assumptions made on the Acceptable Knowledge Source Document Discrepancy Resolution.
- 4.9.10 Evaluate the sources of discrepancies among sources of isotopic distribution data to determine whether the sources are credible. Identify limitations of data **AND**, if the data is **NOT** used, provide a justification on the Acceptable Knowledge Source Document Discrepancy Resolution. Otherwise, describe data limitations in the AK Summary Report, as applicable.
- 4.9.11 Assign or revise the identified radionuclides present, as necessary, **AND** document the change and the assumptions made on the Acceptable Knowledge Source Document Discrepancy Resolution.
- 4.9.12 Assign or revise state and EPA Hazardous Waste Number, as necessary. Assign the Hazardous Waste Numbers consistent with RCRA requirements. Document the assignment and the assumptions and justifications made on the Acceptable Knowledge Source Document Discrepancy Resolution.
- 4.9.13 Obtain the affected AK source documentation, as necessary.
- 4.9.14 Make necessary changes to Acceptable Knowledge Source Document Summary, as appropriate.

- 4.9.15 Complete, print name, sign, and date the Acceptable Knowledge Source Document Discrepancy Resolution documenting final disposition of the discrepancy.
- 4.9.16 Complete, print name, sign, and date an Acceptable Knowledge Source Document Summary for each Acceptable Knowledge Source Document Discrepancy Resolution.
- 4.9.17 Attach the Acceptable Knowledge Source Document Summary to the Acceptable Knowledge Source Document Discrepancy Resolution.
- 4.9.18 **IF** the form consists of multiple pages,
THEN add a footer identifying the page number and total number of pages.
- 4.9.19 Forward the form and supporting documentation (if requested) to the SPM for review and concurrence.

SPM

- 4.9.20 Review the Acceptable Knowledge Source Document Discrepancy Resolution and supporting documentation, as applicable, print name, sign, and date the form if the discrepancy has been resolved, **AND** forward the completed form to the AKE.

AKE

- 4.9.21 Confirm that the Acceptable Knowledge Source Document Discrepancy Resolution is signed and dated by the SPM.
- 4.9.22 Submit the original Acceptable Knowledge Source Document Discrepancy Resolution and supporting documentation, as applicable, to CCP Records.
- 4.9.23 Revise the AK Summary Report as needed.

NOTE

Discrepancies which CAN **NOT** be resolved by CCP will result in the container being returned to the Host site. If the discrepancy is **NOT** container-specific, containers from the subject waste stream will **NOT** be shipped to WIPP until such time as the discrepancy has been resolved. If the discrepancy is related to radiological characterization, notify the SPM that direct measurements of the impacted waste population may be required.

SPM

- 4.9.24 **IF** the discrepancy CAN **NOT** be resolved,
THEN issue an NCR (if not already identified in an NCR) and manage corrective actions in accordance with CCP-QP-005, *CCP*

| *TRU Nonconforming Item Reporting and Control*, and the CCP/site interface document.

- 4.9.25 Record the NCR number on the Acceptable Knowledge Source Document Discrepancy Resolution.
- 4.9.26 Coordinate with the Host site to place a hold tag on, **AND** segregate waste containers associated with the NCR, if applicable, in accordance with applicable procedures.
- 4.9.27 Assess the potential timeframe of the noncompliance, the potentially affected waste populations, and the reassessment and recertification of the waste, if applicable.
- 4.9.28 Coordinate resolution of the nonconforming condition with the AKE.
- 4.9.29 Document information identified during the corrective action process as described in CCP-QP-005.
- 4.9.30 Once the discrepancy is resolved, applicable NCR(s) closed, and corrective action is completed, sign and date the Acceptable Knowledge Source Document Discrepancy Resolution **AND** forward the form to the AKE.

AKE

- 4.9.31 **WHEN** discrepancies are resolved, applicable NCRs are closed, **AND** corrective actions completed, **THEN** review the discrepancy form, document any supporting AK information generated, assign the appropriate waste material parameters, Waste Matrix Code, radionuclides or hazardous waste numbers as applicable, **OR** justify the use of alternates and confirm that it has been signed.
- 4.9.32 Submit the original Acceptable Knowledge Source Document Discrepancy Resolution to CCP Records.

4.10 Updating AK for Additional Waste Stream Containers

NOTE

The following process is followed when the SPM identifies additional containers to be included in a waste stream defined in an existing AK Summary Report. The Waste Containers List identifies the AK source document number(s) designated for the Waste Stream Container Evaluation Memorandum, adding containers, if applicable.

SPM

4.10.1 Provide the AKE with a list of containers to be assessed for inclusion in an existing waste stream.

AKE

4.10.2 Collect container-specific documentation and evaluate the following information for each container:

- Waste generation location and process
- Time period of generation
- Physical form compared to the assigned Waste Material Parameters and Waste Matrix Code
- Chemical content
- Prohibited items
- Radionuclides

4.10.3 Review the current Interface Waste Management Documents List to ensure that the containers were generated by verified procedures.

4.10.4 **IF** the containers are bounded by the current AK Summary Report and Interface Waste Management Documents List for the waste stream,
THEN notify the SPM **AND** submit a Waste Stream Container Evaluation Memorandum documenting the evaluation to CCP Records.

4.10.5 **IF** the containers are not bounded by the current Interface Waste Management Documents List for the waste stream, but the waste was generated by a procedure revision that does **NOT** affect waste stream characteristics or packaging,
THEN,

- [A] Obtain the current procedure revision **AND** incorporate into the AK Record,
- [B] Update the Interface Waste Management Documents List,
AND
- [C] Submit the Waste Stream Container Evaluation Memorandum documenting the evaluation to CCP Records.

NOTE

Containers packaged to a new procedure or revision that results in any change to the waste stream characteristics (i.e., physical, chemical, or radiological composition of the waste) or packaging, cannot be added to the AKTSS until the changes have been evaluated by the AKE to determine if the procedure change requires a revision to the AK Summary Report. If a revision is required the AK Summary Report must be revised and approved before any containers are added to the AKTSS for characterization.

4.10.6 **IF** the containers are not bounded by the current Interface Waste Management Documents List for the waste stream **AND** the waste was generated by a procedure revision that would affect waste stream characteristics or packaging,
THEN notify the SPM to initiate an NCR.

4.10.7 **IF** the containers are **NOT** bounded by the existing AK Summary Report, but should be included in the waste stream,
THEN revise the AK Summary Report; update the Waste Containers List; notify the SPM, **AND** revise and submit the updated Waste Containers List and Waste Stream Container Evaluation Memorandum documenting the evaluation to CCP Records.

4.11 Container Tracking Spreadsheet Development

AKE or Designee

4.11.1 Develop a spreadsheet which identifies the following minimum criterion for each container listed on Waste Containers List:

- Container I.D.
- Waste Stream I.D.
- Generation Date
- Vent Date
- Associated Defense Determination (required for OSRP containers only)
- Special Information (when required)
- New Closure Date
- New Vent Date
- Container Type

4.11.2 Post the copy of the Container Tracking Spreadsheet to the secure file transfer protocol (sftp) site.

4.12 Container Tracking Spreadsheet Maintenance

AKE or Designee

4.12.1 **WHEN** notified of a change to the status of a container(s) identified by the SPM, CCP personnel, Host site personnel, or during the addition of containers to the waste stream inventory, **THEN** evaluate the change based on the data provided.

[A] **IF** the change is routine and DOES **NOT** adversely affect data, **THEN GO TO** step 4.12.2.

[B] **IF** the change is non-routine or adversely affects data, **THEN** notify the SPM to take the appropriate actions prior to proceeding to step 4.12.2.

4.12.2 Update the Container Tracking Spreadsheet and post the change to the sftp site.

4.12.3 Notify the SPM of the change.

4.13 Acceptable Knowledge Assessments

NOTE

To ensure that the AK documentation relating to the management of potentially reactive, corrosive, ignitable, and incompatible TRU waste materials is adequate, current, and accurately described in existing AK Summary Reports, a onetime AK Assessment (AKA) will be performed for each new waste stream and existing waste streams with unshipped containers. The primary focus of the AKA will be to review and verify the AK documentation associated with the historic and current use of absorbents, immobilization products, and neutralization agents used in the management of potentially corrosive, ignitable, or reactive liquids. In addition the AKA will assess the specific management of other potentially incompatible or reactive materials generated at each site (e.g., reactive metals, nitrate salts).

AKE

- 4.13.1 Collect and review procedures and documents listed in the Interface Waste Management Documents List, including current revisions of all procedures/documents on the list.
- 4.13.2 Review the existing AK documentation associated with the historic and current waste management activities relating specifically to TRU waste generation, packaging, treatment, remediation, and characterization, focusing on the use of absorbents, immobilization products, and neutralization reagents for the waste stream.
- 4.13.3 Review existing AK for the special testing and management activities associated with other suspect materials (e.g., unidentified materials, unlabeled chemicals, metmount testing, nitrate salts, swarf conditioning, and sodium treatment) included in each waste stream.
- 4.13.4 Assess current revisions of waste management procedures collected in step 4.13.1 to identify any relevant changes associated with these activities described in the AK Summary Report.
- 4.13.5 Review and update AK Record associated with commercial products used during these activities (e.g., MSDSs and other manufactures information), as applicable. If necessary, obtain procurement records to verify products used.

NOTE

Procedure verification will include the review of waste management activities performed under the procedures listed on the Interface Waste Management Documents List. This “walk down” will involve discussing and/or observing the performance of procedural steps implemented by the generator relating to the management of potentially reactive, corrosive, ignitable, and incompatible TRU waste materials with the appropriate site POCs/SMEs.

4.13.6 For the procedures listed on the Interface Waste Management Documents List, review these activities with the cognizant POCs/SMEs to confirm procedures accurately reflect the site waste management practices, including:

- [A] Specific products and reagents used for waste management (e.g., absorbent, immobilization, and neutralization reagents),
- [B] Non-routine activities (e.g., unknown items) and management of unanticipated conditions.

4.13.7 Document the AKA in an Acceptable Knowledge Assessment Memorandum to the SPM. Include any documented interviews on Records of Communications, as necessary (see step 4.3.3).

SPM

4.13.8 Transmit the AKA to SMR to distribute to designated site POCs/SMEs to verify accuracy and completeness.

4.13.9 Resolve any comments with SMR and POCs/SMEs and obtain concurrence signature from the SMR on the AKA.

AKE

4.13.10 Submit completed Acceptable Knowledge Assessment memorandum and attachments to CCP Records.

4.13.11 Update the Acceptable Knowledge Summary and related Attachments, as necessary.

4.14 AK Briefings

NOTE

AK Briefings are prepared and presented to CCP characterization personnel in accordance with CCP-QP-002. In addition, POCs/SMEs, or cognizant designees, will be required to attend the AK Briefings. The participation of these site representatives from the groups directly involved with the generation, characterization, and management of containers in the waste stream will further assure that the description of the waste streams in the AK Summary Reports are complete and accurate.

AKE/SPM

4.14.1 Prepare AK Briefing presentations that include the following topics for each new waste stream:

- Mission and Generating Facility Information, including process(es) generating the waste
- Waste Stream Description and Information, including description of physical waste composition, WMPs, Waste Matrix Code
- Radiological Characteristics
- Chemical Characteristics
- Suspected Prohibited Items
- Waste Packaging

4.14.2 Prepare AK Briefing updates when the AK Summary Report requires revision due to changes in the waste stream characteristics (physical, chemical, or radiological composition) or packaging configuration.

5.0 RECORDS

- 5.1 Records generated during the performance of this procedure in Section 5.1.1 are maintained as QA records. The following records will be maintained in accordance with CCP-QP-008. The records are the following:

5.1.1 QA/Lifetime Records

- [A] Acceptable Knowledge Documentation Checklist (Attachment 1)
- [B] Records of Communication (Attachment 2), submitted to records as a CCP AK source document attached to an Acceptable Knowledge Source Document Summary form
- [C] Acceptable Knowledge Source Document Summary forms, (Attachment 3) and when applicable attached CCP generated source documents
- [D] Acceptable Knowledge Information List (Attachment 4)
- [E] Hazardous Constituents forms (Attachment 5)
 - Chemical Compatibility Evaluation Memorandum
- [F] Waste Form, Waste Material Parameters, Prohibited Items, and Packaging forms (Attachment 6)
 - Waste Material Parameter Evaluation Memorandum
- [G] Radionuclides forms (Attachment 7)
 - NDA Memorandum
- [H] Waste Containers List (Attachment 8)
- [I] Interface Waste Management Documents List (Attachment 9)
 - SMR Quarterly Review Notification
- [J] Acceptable Knowledge Re-evaluation Checklist (Attachment 10)
- [K] Acceptable Knowledge Source Document Discrepancy Resolution (Attachment 11), submitted to records as a CCP

- | AK source document attached to an Acceptable Knowledge Source Document Summary form
- | [L] CCP Waste Stream Characterization Checklist (Attachment 13)
- | [M] CCP Acceptable Knowledge Accuracy Memorandum
 - CCP Accuracy Report (Attachment 14)
 - Correlation of Container Numbers to Batch Data Report Numbers
- | [N] CCP TRU Waste Correlation and Surrogate Summary Form (Attachment 15)
- | [O] AK Summary Reports
- | [P] AK Sufficiency Determination Request
- | [Q] SPM Notifications (emails, letters, memorandums, etc.), submitted to records as a CCP AK source document attached to an Acceptable Knowledge Source Document Summary form
- | [R] Waste Stream Container Evaluation Memorandum, submitted to records as a CCP AK source document attached to an Acceptable Knowledge Source Document Summary form
- | [S] Acceptable Knowledge Assessment Memorandum, submitted to records as a CCP AK source document attached to an Acceptable Knowledge Source Document Summary form
- | [T] AK Container Tracking Spreadsheet (submitted to CCP Records after notification by the site SPM that waste shipments to WIPP have been completed)
- | [U] Acceptable Knowledge Briefings generated in CCP-QP-002

5.1.2 Non-QA

- [A] Historical Source Documents

Attachment 1 – Acceptable Knowledge Documentation Checklist - Example Form

Page 1 of 5

Site(s): _____

Waste Stream Description: _____

Waste Stream Number(s): _____			
Acceptable Knowledge Information	(1)AK#	Compiled? (Y/N)	Source Document Tracking Number
Mandatory generator site TRU waste program (PR) information:			
Map of the generator site that identifies TRU waste generation, treatment, and storage areas.	PR1		
Generator site mission descriptions related to TRU waste generation and management identifying defense and non-defense operations.	PR2		
Overview of the generator site and generator site TRU waste management operations in the context of the facility's mission.	PR3		
Descriptions of historical and current TRU waste generating operations, including how waste is tracked and managed and/or how operations relative to isotopic composition were tracked.	PR4		
Waste identification and/or categorization schemes and terminology used at the generator site, including codes correlating to specific isotopic distributions.	PR5		
Types and quantities of TRU waste generated, including historical generation through future projections.	PR6		
Correlation of waste streams and description of time of generation, waste generating processes, and area and building/facility where each waste stream was generated.	PR7		
Certification procedures for waste to be sent to the WIPP facility (i.e., procedures to ensure that prohibited items are documented and managed in accordance with site-specific certification plans).	PR8		
Mandatory generator site TRU waste stream (WS)-specific information:			
Waste stream designation	WS1		
Area(s) and building(s) from which the waste stream was or is generated.	WS2		
Waste stream volume and time period of generation	WS3		
Waste generating process (describe for each building) including processes associated with U134 waste generation, if applicable.	WS4		

Attachment 1 – Acceptable Knowledge Documentation Checklist - Example Form
(Continued)

Page 2 of 5

Waste Stream Number(s): _____			
Acceptable Knowledge Information	⁽¹⁾ AK#	Compiled? (Y/N)	Source Document Tracking Number
Process flow diagrams. For research/development, analytical laboratory waste, or other similar processes where process flow diagrams cannot be created, a description of the waste generating processes, rather than a formal process flow diagram, may be included, if justified.	WS5		
Summary of basis and rationale for delineating each waste stream including justification for combining waste historically managed separately as TRU mixed and TRU non-mixed waste streams into a single waste stream, that is traceable to referenced documents.	WS6		
Generator site mission descriptions related to TRU waste generation and management identifying defense and non-defense operations.	WS7		
Material inputs or other information that identified the chemical contents of the waste and the stream. Includes events or processes that may have modified the chemical properties of the waste stream after generation.	WS8		
Physical waste form (e.g., glovebox materials and chemicals handled during glovebox operations, if applicable), assigned Summary Category Group, Waste Matrix Code and materials inputs, including waste material parameters present in the waste stream. Includes events or processes that may have modified the physical properties of the waste stream after generation.	WS9		
Waste identifiers assigned by the generator site (e.g., item description code, packaging identification numbers).	WS10		
Specification of the isotopic ratios for the ten WIPP-tracked radionuclides and all radionuclides other than the ten WIPP-tracked radionuclides that contribute to 95 percent of the radioactive hazard for a payload container. Chemical and physical information that could affect the waste isotopic distribution, as well as calculations used to derive the isotopic distribution.	WS11		

Attachment 1 – Acceptable Knowledge Documentation Checklist - Example Form
(Continued)

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Waste Stream Number(s): _____				
Acceptable Knowledge Information	⁽¹⁾ AK#	Compiled? (Y/N)	Source Document Tracking Number	
State and EPA hazardous waste constituents in the waste stream and state and EPA Hazardous Waste Numbers assigned, including documentation regarding how the site has historically managed the waste, including the historical regulatory status of the waste (i.e., TRU mixed versus TRU non-mixed waste).	WS12			
Additional acceptable knowledge documentation (briefly describe):				
Process design documents (e.g., Title II Design)	S1			
Standard operating procedures that may include a list of raw materials or reagents, a description of the process or experiment generating the waste, and a description of the waste generated and how the wastes are managed at the point of generation	S2			
Preliminary and Final Safety Analysis Reports and technical safety requirements	S3			
Waste Packaging records	S4			
Test plans or research project reports that describe the reagents, radionuclides, and other raw materials used in experiments	S5			
Site databases (e.g., chemical inventory database for SARA Title III requirements, SNM or nuclear material databases)	S6			
Information from site personnel (e.g., documented interviews)	S7			
Standard industry documents (e.g., industry specification sheets, handbooks, reference materials, or other vendor information)	S8			
Analytical data relevant to the waste stream, including results from fingerprint analyses, spot checks, routine verification sampling or other processes that collected information pertinent to the waste stream. This may include new information (or previously collected data) which augments required information (e.g., visual examination not performed in compliance with CCP-PO-001, radiography screening for prohibited items).	S9			
Material Safety Data Sheets, product labels, or other product information	S10			
Laboratory notebooks that detail the research processes and raw materials used in an experiment	S11			
Comparable or surrogate sampling and analysis data	S12			
Other (describe)	S13			

Attachment 1 – Acceptable Knowledge Documentation Checklist - Example Form
(Continued)

Page 4 of 5

Waste Stream Number(s): _____				
Acceptable Knowledge Information	(1)AK#	Compiled? (Y/N)	Source Document Tracking Number	
Safeguards and security, Materials Control and Accountability, and other nuclear material control system data Reports of nuclear safety or criticality accidents involving special nuclear materials (SNM)	S14			
NMMA logs or inventory records or waste disposal logs providing SNM or nuclear material information	S15			
Packaging	S16			
OSR-Specific Information (Applies only to sealed sources)				
Evidence that the waste meets the definition of a sealed source reference 10CFR30.4 and 10CFR835.2	O1			
Documentation that sources are Special Form, such as certificates DOT Special Form Class 7 per 49CFR173.403	O2			
Contamination survey results for each source reference requirements of 10CFR34.27	O3			
Source manufacturer's sales catalogues	O4			
Source purchase records	O5			
Manufacturer fabrication documents	O6			
Manufacturer drawings	O7			
Fuel capsule assembly reports	O8			
Manufacturer's operational procedures for meeting cleanliness requirements	O9			
Manufacturer's shipping documents or records	O10			
Manufacturer welding records	O11			
TRU batch material records	O12			
National database radiological information (e.g., NMMSS, NRC Device Registry)	O13			
NRC or agreement state regulatory licensing information	O14			
Documentation of physical markings on the outer source casing or labels attached to devices housing sources	O15			
Unique physical description attributed to specific source models	O16			

Attachment 1 – Acceptable Knowledge Documentation Checklist - Example Form
(Continued)

Page 5 of 5

Waste Stream Number(s): _____			
Acceptable Knowledge Information	(1)AK#	Compiled? (Y/N)	Source Document Tracking Number
Acceptable knowledge information regarding waste generated off-site or from similar process:			
(1) AK#s are used as identifiers for program, waste stream-specific and supporting elements. The identifiers are to be used in the Acceptable Knowledge Source Document Summary and Acceptable Knowledge Information List to aid in the page location of program and waste stream-specific elements within a given document. N/A means that item is not applicable.			

Additional comments:

All required AK information has been compiled and source document tracking numbers assigned.

Acceptable Knowledge Expert: _____ / _____ Date: _____
Print Sign

Attachment 2 – Record of Communication – Example Form

Page 1 of 1

Corresponding Source Document Tracking No:		
Interviewer:	Date:	Time:
Interviewee:	Group/Organization: Job Title:	Phone: E-mail:
Subject:		
Summary:		
Data Limitations:		

Acceptable Knowledge Expert: _____ / _____ Date: _____
Print Sign

Attachment 3 – Acceptable Knowledge Source Document Summary – Example Form

Page 1 of 1

Site(s):		Source Document Tracking Number:	
Waste Stream Number: (Applicable only when site library is not in use)			
Acceptable Knowledge Documentation Type: <input type="checkbox"/> TRU Waste Management Program Information <input type="checkbox"/> Waste Stream-Specific Information <input type="checkbox"/> Additional Information		Category: <input type="checkbox"/> C - Correspondence <input type="checkbox"/> D - Documents <input type="checkbox"/> M - Miscellaneous <input type="checkbox"/> P - Procedure <input type="checkbox"/> DR - Discrepancy Resolution <input type="checkbox"/> U - Unpublished Documents	
Title or Description of Source Document ^a :			
Source Document Reference Information (author(s), document and revision number, date, publisher):			
AK # ^b	Source Doc. Page # ^c	AK Information Summary	
Source Document Data Limitations (if any):			
Acceptable Knowledge Expert:			
/		Date:	
Print		Sign	
^a Provide description for non-titled information (i.e., container paperwork, MSDS sheets, etc) ^b Obtain from Acceptable Knowledge Documentation Checklist ^c For microfilm or microfiche, identify box, tape, reel number and location.			

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Attachment 4 – Acceptable Knowledge Information List – Example Form

Page 1 of 1

Site(s): _____

Waste Stream Number(s): _____

Waste Stream Description: _____

Source Document Tracking Number ^{a/c}	Title or Description ^a	Author	Document # ^b	Document Revision # and Date

^a From Acceptable Knowledge Source Document Summaries (Attachments 3)^b Or publisher's document number if available^c In the case where an AK Summary Report has been revised based on information in Attachment 11 - Acceptable Knowledge Source Document Discrepancy Resolution form, identify the tracking number.Acceptable Knowledge Expert: _____ / _____ Date: _____
Print Sign

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Attachment 5 – Hazardous Constituents – Example Form

Page 1 of 5

Site(s): _____

Waste Stream Description: _____

Compound	Suspected Present? (Y/N)	Used as a solvent? ^a (Y/N/NA)	TC constituent concentration less than regulatory level? ^a (Y/N/NA)	TC Hazardous Waste Number ^a	F-Listed Hazardous Waste Number ^a	U- or P- Listed Hazardous Waste Number ^a	EPA Hazardous Waste Number Assigned (N/Specify HWN)	State Hazardous Waste Number ^b
Toxicity Characteristic Metal Compounds (40 CFR Part 261)								
Arsenic		N/A		D004	N/A	N/A		
Barium		N/A		D005	N/A	N/A		
Cadmium		N/A		D006	N/A	N/A		
Chromium		N/A		D007	N/A	N/A		
Lead		N/A		D008	N/A	N/A		
Mercury		N/A		D009	N/A	U151		
Selenium		N/A		D010	N/A	N/A		
Silver		N/A		D011	N/A	N/A		
Volatile Organic Compounds (40 CFR Part 261)								
1,1,1-Trichloroethane			N/A	N/A	F001/F002	U226		
1,1,2,2-Tetrachloroethane		N/A	N/A	N/A	N/A	U209		
1,1,2-Trichloro-1,2,2-trifluoroethane			N/A	N/A	F001/F002	N/A		
1,1,2-Trichloroethane			N/A	N/A	F002	U227 ^c		
1,1-Dichloroethylene		N/A		D029	N/A	U078		
1,2-Dichlorobenzene			N/A	N/A	F002	U070		
1,2-Dichloroethane		N/A		D028	N/A	U077 ^c		
1,4-Dichlorobenzene		N/A		D027	N/A	U072		
1, 4-Dioxane		N/A	N/A	N/A	N/A	U108		
2-Ethoxyethanol			N/A	N/A	F005	U359 ^c		
2-Nitropropane			N/A	N/A	F005	U171 ^c		
Acetone			N/A	N/A	F003	U002		

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Attachment 5 – Hazardous Constituents – Example Form (Continued)

Page 2 of 5

Compound	Suspected Present? (Y/N)	Used as a solvent? ^a (Y/N/NA)	TC constituent concentration less than regulatory level? ^a (Y/N/NA)	TC Hazardous Waste Number ^a	F-Listed Hazardous Waste Number ^a	U- or P- Listed Hazardous Waste Number ^a	EPA Hazardous Waste Number Assigned (N/Specify HWN)	State Hazardous Waste Number ^b
Volatile Organic Compounds (continued)								
Acetonitrile		N/A	N/A	N/A	N/A	U003		
Benzene				D018	F005	U019		
Butanol (n-Butyl alcohol)			N/A	N/A	F003	U031 ^c		
Carbon disulfide			N/A	N/A	F005	P022 ^c		
Carbon tetrachloride				D019	F001	U211 ^c		
Chlorobenzene				D021	F002	U037		
Chloroform		N/A		D022	N/A	U044		
Cyclohexanone			N/A	N/A	F003	U057 ^c		
Ethyl acetate			N/A	N/A	F003	U112 ^c		
Ethyl benzene			N/A	N/A	F003	N/A		
Ethyl ether			N/A	N/A	F003	U117 ^c		
Formaldehyde		N/A	N/A	N/A	N/A	U122		
Hydrazine		N/A	N/A	N/A	N/A	U133		
Isobutanol			N/A	N/A	F005	U140 ^c		
Methanol			N/A	N/A	F003	U154		
Methyl ethyl ketone				D035	F005	U159		
Methyl isobutyl ketone			N/A	N/A	F003	U161 ^c		
Methylene chloride			N/A	N/A	F001/F002	U080 ^c		
Pyridine				D038	F005	U196		
Tetrachloroethylene				D039	F001/F002	U210		
Toluene			N/A	N/A	F005	U220		
trans-1,2-Dichloroethylene		N/A	N/A	N/A	N/A	U079		
Trichloroethylene				D040	F001/F002	U228		
Trichlorofluoromethane			N/A	N/A	F001/F002	U121 ^c		
Vinyl Chloride		N/A		D043	N/A	U043		
Xylenes			N/A	N/A	F003	U239		

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Attachment 5 – Hazardous Constituents – Example Form (Continued)

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Compound	Suspected Present? (Y/N)	Used as a solvent? ^a (Y/N/NA)	TC constituent concentration less than regulatory level? ^a (Y/N/NA)	TC Hazardous Waste Number ^a	F-Listed Hazardous Waste Number ^a	U- or P- Listed Hazardous Waste Number ^a	EPA Hazardous Waste Number Assigned (N/Specify HWN)	State Hazardous Waste Number ^b
Semivolatile Organic Compound (40 CFR Part 261)								
2,4-Dinitrotoluene		N/A		D030	N/A	U105		
Cresols				D026	F004	U052		
Dimethyl sulfate		N/A	N/A	N/A	N/A	U103		
Hexachlorobenzene		N/A		D032	N/A	U127 ^c		
Hexachlorobutadiene		N/A		D033	N/A	U128 ^c		
Hexachloroethane		N/A		D034	N/A	U131 ^c		
Nitrobenzene				D036	F004	U169 ^c		
Pentachlorophenol		N/A		D037	F027 ^c	N/A		

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Attachment 5 – Hazardous Constituents – Example Form (Continued)

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Compound	Suspected Present? (Y/N)	Used as a solvent? ^a (Y/N/NA)	TC constituent concentration less than regulatory level? ^a (Y/N/NA)	TC Hazardous Waste Number ^a	F-Listed Hazardous Waste Number ^a	U- or P- Listed Hazardous Waste Number ^a	EPA Hazardous Waste Number Assigned (N/Specify HWN)	State Hazardous Waste Number ^b
Other Constituents								
Wastewater treatment sludges from electroplating operations		N/A	N/A	N/A	F006	N/A		
Spent cyanide plating bath solutions from electroplating operations		N/A	N/A	N/A	F007	N/A		
Spent cyanides stripping and cleaning bath solutions from electroplating operations		N/A	N/A	N/A	F009	N/A		
Beryllium powder		N/A	N/A	N/A	N/A	P015		
Cyanide (soluble cyanide salts)		N/A	N/A	N/A	N/A	P030		
Potassium cyanide		N/A	N/A	N/A	N/A	P098		
Potassium silver cyanide		N/A	N/A	N/A	N/A	P099		
Sodium cyanide		N/A	N/A	N/A	N/A	P106		
Vanadium pentoxide		N/A	N/A	N/A	N/A	P120		
Hydrofluoric acid		N/A	N/A	N/A	N/A	U134		
Total PCB Concentration ^d		N/A	N/A	N/A	N/A	N/A	N/A	
Additional EPA Hazardous Constituents (List)								
Additional State Hazardous Constituents ^b (List) ^e								
Potentially Flammable VOCs (List) ^{e,f}		N/A						

Attachment 5 – Hazardous Constituents – Example Form (Continued)

Page 5 of 5

- a. Source: Title 40 Code of Federal Regulations Part 261, Identification and Listing of Hazardous Waste
- b. Source: Cite applicable state regulation
- c. This EPA Hazardous Waste Number is not permitted for WIPP disposal.
- d. Source: Title 40 Code of Federal Regulation Part 761, Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions.
- e. Add rows or attach additional sheets as necessary
- f. Flammable VOCs included in the CH-TRAMPAC

NOTE: If any of the information requested on this form is not available or not applicable, enter N/A in the appropriate box.

Acceptable Knowledge Expert: _____ / _____ Date: _____
Print Sign

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Attachment 6 – Waste Form, Waste Material Parameters, Prohibited Items, and Packaging – Example Form

Page 1 of 2

Site(s): _____

Waste Stream Description: _____

Container ID Numbers: _____

Waste Stream Number:	
Physical Waste Form (e.g., debris, solidified waste)	
Summary Category Group ^a	
Waste Matrix Code Group ^a	
Waste Matrix Code ^b	
Waste Material Parameter Weights ^c	Estimated Waste Stream Weight Percent Average (attach evaluation justifying percentages)
Iron-based metals/alloys	
Aluminum-based metals/alloys	
Other metals	
Other inorganic materials	
Cellulosics	
Rubber	
Plastics (waste materials)	
Organic matrix	
Inorganic matrix	
Soils/Gravels	
Packaging materials	Present (Y/N)?
Steel	
Plastics	
Prohibited Wastes ^{d, e, f, g}	Present (Y/N)?
Observable liquid shall be no more than 1 percent by volume of the outermost container at the time of RTR or VE. Observable liquid shall be no more than 60 milliliters or 3 percent by volume, whichever is greater, in an internal container. Observable liquid shall not be present in a container with EPA HWN U134 assigned.	
Non-radionuclide pyrophoric materials	

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Attachment 6 – Waste Form, Waste Material Parameters, Prohibited Items, and Packaging – Example Form (Continued)

Page 2 of 2

Sealed containers > 4 liters	
Hazardous waste not occurring as co-contaminants with TRU mixed waste (non-mixed hazardous waste)	

Waste Stream Number: _____

Explosives	
Compressed gases	
Residual hydrofluoric acid (if U134 assigned to stream)	
Residual PCB liquids ⁱ	
Ignitables (EPA Hazardous Waste Number D001)	
Corrosives (EPA Hazardous Waste Number D002)	
Reactives (EPA Hazardous Waste Number D003)	
Waste incompatible with backfill, seal and panel closure materials, container and packaging materials, shipping container materials, or other wastes ^h	
Spent Nuclear fuel or high-level waste ⁱ	
Any unvented plastic bags > 4 liters that have been heat-sealed	
Additional Information (if available)	
Packaging	
Waste container type?	
Liner type?	
Is liner punctured?	
Is filter vent installed?	
Maximum number of confinement layers	

- a. Source: *CCP Transuranic Waste Characterization Quality Assurance Project Plan* (CCP-PO-001) Introduction.
- b. Source: *Transuranic Waste Baseline Inventory Report* (DOE/CAO-95-1121) or DOE Waste Treatability Group Guidance (DOE/LLW-217). Note: the Waste Matrix Code should not be assigned at the Summary Category Group level.
- c. Source: CCP-PO-001 - Table C3-1. Attach the Waste Material Parameter Evaluation Memorandum used to estimate values include in this Table (see Section 4.4.27).
- d. Source: CCP-PO-001 - Section C-1c.
- e. Source: *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant* (WAC)(DOE/WIPP-02-3122), Section 3
- f. Source: *TRUPACT-II Content Codes* (TRUCON) (DOE/WIPP 89-004)
- g. Source: *TRUPACT-II Authorized Methods for Payload Control* (TRAMPAC), Nuclear Waste Partnership, LLC
- h. This waste has been approved for disposal at the WIPP by the Permittee as documented by Appendix C1 of the WIPP RCRA Part B Permit Application and the Permittee's approval and assignment of the applicable TRUCON Codes for this waste stream.
- i. Source: *Nuclear Waste Policy Act of 1982* (42 U.S.C. 10101)
- j. Source: Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution and Commerce, and Use Prohibitions (40 CFR Part 761)

Acceptable Knowledge Expert: _____ / _____
Print Sign

Date: _____

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Attachment 7 – Radionuclides – Example Form

Page 1 of 1

*Attach current Radiological Characterization or NDA Memorandum

Site(s): _____

Waste Stream Number(s): _____

Waste Stream Description: _____

Radionuclide	Wt % ^b	Ci ^b	Suspected Present (Yes/No)
From CCP-PO-002			
Sr-90			
Cs-137			
U-233			
U-234			
U-238			
Pu-238			
Pu-239			
Pu-240			
Pu-242			
Am-241			
Other Radionuclides (List)			
^a Source: <i>Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant (WAC)</i> (DOE/WIPP-02-3122), Section 3 ^b If available			

Acceptable Knowledge Expert: _____ / _____ Date: _____
Print Sign

Acceptable Knowledge Expert: _____ / _____ Date: _____
Print Sign

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Attachment 9 – Interface Waste Management Documents List – Example Form

Page 1 of 1

Site: _____

Waste Stream Number: _____

Waste Stream Description: _____

Document #	Revision	Date	Document Title/Description	Generator SME(s)/POC(s) ^a	Verification Date ^b	AK Source Document Tracking #

POC/SME Contact Information

Contact Name	Organization/Company Affiliation	Title/Position/Description	Phone Number(s)	Email

^a For active procedures POCs must include representatives directly involved with waste generation, characterization, certification, and verification activities described in the procedure. This may include responsible generator site contractor/subcontractor personnel.^b Enter verification date or date procedure added to this attachment (date on the revised Attachment 3).Acceptable Knowledge Expert: _____ / _____ Date: _____
Print SignSite Management Representative: _____ / _____ Date: _____
Print Sign

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Attachment 10 – Acceptable Knowledge Re-evaluation Checklist – Example Form

Page 1 of 1

Site(s): _____
Waste Stream Number(s): _____
Waste Stream Description: _____
NCR numbers(s) if applicable: _____
Inconsistency between waste characterization and acceptable knowledge information (describe): _____

Requirements	Completed? Yes/No	Additional Documentation ^a
Review existing information based on the container identification number and document all differences in EPA Hazardous Waste Number assignments. ^c		
If differences exist in the EPA Hazardous Waste Numbers that were assigned, reassess and document all required AK information associated with the new designation. ^{b,c}		
Reassess and document all testing data associated with the waste. ^c		
Verify and document that the reassigned Waste Matrix Code was generated within the specified time period, area and buildings, waste generating process, and that the process material inputs are consistent with the waste material parameters identified during RTR or VE.		
If NDA results indicate the presence of additional or different radionuclides in the waste, reassess and document AK and characterization information associated with the new information. ^c		
Record all changes to the AK records on the appropriate Attachments and resubmit to the CCP Facility Records Custodian.		
If unresolved discrepancies exist in the AK information for the reassigned Waste Matrix Code, EPA Hazardous Waste Numbers, or radionuclides, document the segregation of this container, and define the actions necessary to fully characterize the waste.		

a. Cite the source document, nonconformance report number, attachment, or other documentation used to support a change or no change.

b. If a toxicity characteristic contaminant is identified, it is not included as a listed waste, and analytical data regarding the concentration are not available, the corresponding EPA Hazardous Waste Number is applied.

c. Not applicable for LANL sealed source waste stream.

Acceptable Knowledge Expert:

Print Sign

Date: _____

Site Project Manager:

Print Sign

Date: _____

Page 1 of 1

Waste Stream Description: _____

[illegible]

Attachment 12 – Example Form and Content Guide for AK Summary Reports

CCP-AK-SITE-XXX

**Central Characterization Program
Acceptable Knowledge Summary Report
For**

**NAME OF THE SITE
NAME OF THE PROCESS**

**REVISION NUMBER
DATE**

Printed Name

APPROVED FOR USE

Attachment 12 – Example Form and Content Guide for AK Summary Reports (Continued)

TABLE OF CONTENTS
LIST OF TABLES
LIST OF FIGURES
LIST OF ATTACHMENTS
LIST OF ACRONYMS AND ABBREVIATIONS

Attachment 12 – Example Form and Content Guide for AK Summary Reports (Continued)

1.0 EXECUTIVE SUMMARY

This Acceptable Knowledge (AK) Summary Report has been prepared for the Central Characterization Program (CCP) for Contact-Handled (CH) (Remote-Handled [RH]) Transuranic (TRU) waste generated and managed by *(NAME THE SITE[s])*. The waste described in this report was generated by *(Building/Facility)*, (and the waste will be repackaged in *[Building/Facility]*). This report was prepared in accordance with CCP-TP-005, *CCP Acceptable Knowledge Documentation* (Reference 1), to implement the AK requirements of **(RH only)** -DOE/WIPP-02-3214, *Remote-Handled TRU Waste Characterization Program Implementation Plan* [WCPIP] [Reference ____]; *Waste Isolation Pilot Plant Hazardous Waste Facility Permit, Waste Analysis Plan* (WIPP-WAP) (Reference ____); and DOE/WIPP-02-3122, *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant* (WIPP-WAC) (References ____).

The WIPP WAP AK requirements are addressed in CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan* (Reference ____). The WIPP-WAC AK requirements are addressed in CCP-PO-002, *CCP Transuranic Waste Certification Plan* (Reference ____). Additionally, this report provides the AK information required by **(CH only)** - CCP-PO-003, *CCP Transuranic Authorized Methods for Payload Control* [CCP CH-TRAMPAC] [Reference ____] **OR (RH only)** - CCP-PO-505, *CCP Remote-Handled Transuranic Waste Authorized Methods for Payload Control* [CCP RH-TRAMPAC] [Reference ____].

The CCP is tasked with certification of TRU waste for transportation to and disposal at the Waste Isolation Pilot Plant (WIPP). This report was developed in accordance with CCP-TP-005 (Reference 1) and describes how AK is collected, reviewed, and managed by the CCP. The CCP is responsible for collection, review, and management of AK documentation in accordance CCP-TP-005 and reviews and approves this AK Summary Report. CCP maintains responsibility for this AK Summary Report and all CCP-TP-005 generated forms and records as quality assurance (QA) records. In addition, CCP maintains a copy of the “historical source documents” as non-QA records.

(Brief description of the waste stream, facility[ies], and generating process/activity).

Attachment 12 – Example Form and Content Guide for AK Summary Reports (Continued)

This AK Summary Report, along with referenced supporting documents, provides a defensible and auditable record of AK for designated waste streams from the *NAME THE (FACILITY/PROCESS/ACTIVITY)*. The references and AK source documents used to prepare this report are listed in Sections 7.0 (8.0 for RH) and 8.0 (9.0 for RH). The source documents cited throughout this report are identified by alphanumeric designations corresponding to a unique Source Document Tracking Number (i.e., C001, D001, DR001, M001, P001, and U001 (as applicable to match Section 3)).

This AK report includes information relating to the facility's history, mission, process operations, waste identification, characterization, and waste management practices. Information contained in this report was obtained from numerous sources, including facility safety basis documentation, historical document archives, generator and storage facility waste records and documents, and interviews with cognizant personnel.

This report and supporting source documentation provide the mandatory waste program and waste stream-specific information required by the WIPP-WAP (Reference 3). **(RH only** - This report also compiles data relevant to the applicable U.S. Environmental Protection Agency [EPA] requirements and presents the documentation necessary to satisfy each WCPIP data quality objective [DQO] and quality assurance objective [QAO] for RH TRU waste streams [Reference 2]).

Attachment 12 – Example Form and Content Guide for AK Summary Reports (Continued)

2.0 WASTE STREAM IDENTIFICATION SUMMARY

Site Where TRU Waste Was Generated and Stored: *SITE ADDRESS and EPA ID*

Facility Where TRU Waste Was Generated: *NAME OF FACILITY*

Facility Mission: *DESCRIBE THE MISSION AND HOW THE WASTE WAS GENERATED*

2.1 Waste Stream #1 (Identifier and Name)

2.2 Waste Stream #2 (Identifier and Name) (repeat following for each waste stream)

Summary Category Group: (Assign per Section 4.4.11)

Waste Matrix Code Group: (Assign per Section 4.4.10)

Waste Matrix Code: (Assign per section 4.4.9)

TRUPACT-II Content Code (TRUCON): (Obtain TRUCON Code(s) from SPM)

TRUPACT-III Content Code (TRUCON): (Obtain TRUCON Code(s) from SPM)

Waste Stream Description:

As described in Section 5.4.1, waste stream (number) is comprised primarily of (describe type of waste).

(Describe any other specific waste items in the waste stream, equipment, items not included above, secondary waste/chemicals introduced during packaging/repackaging.)

This waste stream was determined to contain Resource Conservation and Recovery Act (RCRA)-regulated constituents and is assigned the following EPA hazardous waste numbers (HWNs): (list HWNs) (Refer to Section 5.4.3).

(Identify the two predominant radionuclides by mass and activity for waste characterized using NDA techniques) (Refer to Section 5.4.2)

(Identify potential prohibited items and characterization method[s] selected to ensure the absence of these items in the final packaging) (Refer to Section 5.4.5).

(Describe waste packaging/repackaging and final waste container configuration) (Refer to Section 5.5).

Attachment 12 – Example Form and Content Guide for AK Summary Reports (Continued)

For CH - Waste Stream (number) meets the WIPP-WAP waste stream definition. The waste stream consists of waste materials that have common physical form, that contain similar hazardous constituents, and that are generated from a single process or activity.

For RH - Waste Stream (number) meets the WIPP-WAP and the WCPIP waste stream definitions. The waste is similar in material, physical form, hazardous constituents, and radiological properties and generated from a single process or activity.

3.0 ACCEPTABLE KNOWLEDGE DATA and INFORMATION

TRU waste destined for disposal at the WIPP must be characterized prior to shipment. Development of knowledge of the waste materials and processes that generate and control the waste is required to provide a clear and convincing argument about the characteristics of each waste stream. The AK characterization documented herein complies with the requirements of the WIPP-WAP (Reference __) (**RH only** - and the WCPIP [Reference 1]) and was developed in accordance with of CCP-PO-001, (Reference __), and CCP-TP-005 (Reference 1).

RH only - The WCPIP identifies waste characterization requirements and methods to satisfy requirements in:

- 40 Code of Federal Regulations (CFR) Part 191, *Environmental Radiation Protection Standards for the Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes* (Reference __).
- 40 CFR Part 194, *Criteria for the Certification and Re-Certification of the Waste Isolation Pilot Plant's Compliance with the 40 CFR 191 Disposal Regulations* (Reference __).
- *Criteria for the Certification and Re-Certification of the Waste Isolation Pilot Plant's Compliance with the 40 CFR Part 191 Disposal Regulations: Certification Decision* (Reference __).

Public Law 102-579, *The WIPP Land Withdrawal Act (LWA)* (Reference __).

[Include a summary of the types and sources of AK information used].

Attachment 12 – Example Form and Content Guide for AK Summary Reports (Continued)

The references and AK sources used to prepare this report are listed in Sections 7.0 (8.0 for RH) and 8.0 (9.0 for RH), respectively. The AK sources referenced within this report by alphanumeric designations (e.g., C001, D001, DR001, M001, P001, and U001) correspond to the Source Document Tracking Number using the following convention: (include as applicable)

- C – Correspondence
- D – Documents
- DR – Discrepancy resolution
- M – Miscellaneous
- P – Procedures and Published documents
- U – Unpublished documents

Attachment 12 – Example Form and Content Guide for AK Summary Reports (Continued)

4.0 REQUIRED PROGRAM INFORMATION

This section presents the mandatory TRU waste program information required by the WIPP-WAP and the WCPIP for waste stream (number)(References __ and __). This section provides a description of the facility and operations associated with the generation of (facility/building/operation) TRU waste. Included is a description of the (facility/building/operation), summary of the mission, defense determination, and descriptions of (other operations including D&D, maintenance, repackaging, etc.) operations associated with the generation of waste stream (number) are provided.

- 4.1 Facility Location
- 4.2 Facility Description
- 4.3 Facility Mission
- 4.4 Defense Waste Assessment
- 4.5 High-Level Waste and Spent Nuclear Fuel Assessment
- 4.6 TRU Waste Management
 - 4.6.1 Types and Quantity of TRU Waste Generated
 - 4.6.2 Correlation of Waste Streams Generated from the Same Building and Process
 - 4.6.3 Waste Stream Identification, Categorization, and Delineation
- 4.7 Description of Waste Generating Process
- 4.8 Waste Certification Procedures

5.0 REQUIRED WASTE STREAM INFORMATION

(Repeat the following information in additional waste stream sections, as needed)

This section presents the mandatory TRU waste stream specific information required by the WIPP-WAP (**RH only** - and the WCPIP) for waste stream (number) (References __ and __). The area of generation, waste stream volume, period of generation, prohibited items, waste packaging, and the physical, chemical, and radiological composition of the waste stream are described.

- 5.1 Area and Building of Generation
- 5.2 Waste Stream Volume and Period of Generation
- 5.3 Waste Generating Activities

Attachment 12 – Example Form and Content Guide for AK Summary Reports (Continued)

5.4 Type of Waste Generated

5.4.1 Materials Related to Physical Form

5.4.1.1 Waste Matrix Code

5.4.1.2 Waste Material Parameters

5.4.2 Radiological Characterization

5.4.3 Chemical Content Identification - Hazardous Constituents

5.4.3.1 F-Listed Constituents

5.4.3.2 Toxicity Characteristic Constituents

5.4.3.3 U- and P-Listed Constituents

5.4.3.4 K-Listed Constituents

5.4.3.5 Ignitables, Reactives, and Corrosives

5.4.3.6 State Hazardous Waste Code or Number Assignment (if applicable)

5.4.4 Polychlorinated Biphenyls

5.4.5 Prohibited Items

5.5 Waste Packaging

6.0 QUALIFICATION OF AK – (RH Only)

As stated in CCP-PO-002, *CCP Waste Certification Plan*, (Reference ___), this AK Summary Report provides a description of the characterization of this RH waste stream.

CCP-AK-ORNL-XXX, *CCP RH TRU Waste Certification Plan for 40 CFR 194 Compliance and Confirmation Test Plan for Waste Stream (number)* (Reference ___), describes how each DQO and QAO is met along with the rationale for selection of the AK qualification methods used. As required by the WCPIP (Reference ___), the description of waste stream (number) is provided in Sections 4.0 and 5.0. The description of the confirmatory testing process, the percentage of containers that are subjected to the process, a discussion of why the process is considered representative of the waste stream, and quantitative acceptance criteria is presented in CCP-AK-ORNL-XXX (Reference ___).

The CCP intends to use a combination of methods to qualify the AK information associated with the [site/facility/building] waste stream because this will make the best use of the information available (such as existing sampling and analytical data). Table XX, Waste Stream (number) Determination Summary, lists the DQOs to be addressed using AK associated with waste stream [number] relating to the defense waste, radiological, and physical waste stream determinations. The location (page number, section, etc.) of the relevant information is identified in the AK source identified in Table XX.

Table XX. Waste Stream (number) DQO Determination Summary

(Provide a summary of the AK and identify the AK sources and the characterization method for each WCPIP DQO).

Attachment 12 – Example Form and Content Guide for AK Summary Reports (Continued)

6.0 CONTAINER-SPECIFIC INFORMATION (**Section 7.0 for RH**)

(Provide a list of the container-specific documentation generated by the procedures reviewed during the AKA performed in Section 4.13 that will be reviewed and maintained in the AK Record as containers are added to the waste stream).

In accordance with procedure CCP-TP-005 (Reference 1), a CCP Waste Containers List (Attachment 8 of the procedure) is completed and maintained as a quality record for waste tracking purposes. Information tracked includes container identification number, waste stream number, and the closure date for each container.

Attachment 12 – Example Form and Content Guide for AK Summary Reports
(Continued)

7.0 REFERENCE INFORMATION [Section 8.0 for RH]

1. CCP-TP-005, *CCP Acceptable Knowledge Documentation*, Carlsbad, New Mexico, Nuclear Waste Partnership, LLC.
2. DOE/WIPP-02-3214, *Remote-Handled TRU Waste Characterization Program Implementation Plan*, Carlsbad, New Mexico, U.S. DOE Carlsbad Field Office
3. *Waste Isolation Pilot Plant Hazardous Waste Facility Permit, Waste Analysis Plan*, New Mexico Environment Department, Santa Fe, New Mexico
4. DOE/WIPP-02-3122, *Transuranic Waste Acceptance Criteria For the Waste Isolation Pilot Plant*, Carlsbad, New Mexico, U.S. DOE Carlsbad Field Office
5. CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*, Carlsbad, New Mexico, Nuclear Waste Partnership, LLC.
6. CCP-PO-002, *CCP Transuranic Waste Certification Plan*, Carlsbad, New Mexico, Nuclear Waste Partnership, LLC.
7. CCP-PO-003, *CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC)*, Carlsbad, New Mexico, Nuclear Waste Partnership, LLC.
8. CCP-PO-505, *CCP Remote-Handled Transuranic Waste Authorized Methods for Payload Control (CCP RH-TRAMPAC)*, Carlsbad, New Mexico, Nuclear Waste Partnership, LLC.
10. DOE/LLW-217, *DOE Waste Treatability Group Guidance*, Idaho Falls, Idaho, INEL-Lockheed Idaho Technologies
11. 40 CFR Part 191, *Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes*, Washington, D.C., U.S. EPA
12. 40 CFR Part 194, *Criteria for the Certification and Re-Certification of the Waste Isolation Pilot Plant's Compliance with the 40 CFR Part 191 Disposal Regulations*, Washington, D.C., U.S. EPA

Attachment 12 – Example Form and Content Guide for AK Summary Reports (Continued)

13. *Criteria for the Certification and Re-Certification of the Waste Isolation Pilot Plant's Compliance with the 40 CFR Part 191 Disposal Regulations: Certification Decision*, Washington, D.C., U.S. EPA
14. Public Law 102-579, *The Waste Isolation Pilot Plant Land Withdrawal Act*, October 30, 1992 as amended by Public Law 104-201
15. 42 U.S.C 10101, *Nuclear Waste Policy Act of 1982*, U.S. Congress

Attachment 12 – Example Form and Content Guide for AK Summary Reports
(Continued)

8.0 AK SOURCE DOCUMENTS [Section 9.0 for RH]

Document Number	Title

[INSERT ALL REFERENCED FIGURES]

Attachment 13 – CCP Waste Stream Characterization Checklist – Example Form

Page 1 of 2

CCP Waste Stream Characterization Checklist

Site(s):

Waste Stream Number:

Lot # (if applicable)

Waste Stream Description:

Acceptable Knowledge Information or other data points ^a	Characterization Method(s)	Acceptable Knowledge Re-evaluation Required? Yes/No ^{b?}	Comments ^c
Physical waste form/description			
Waste material parameters weights			
Waste percent volume consistent with nondestructive examination or visual examination data and audio/video tapes or equivalent media			
Summary Category Group assignment			
Waste Matrix Code assignment			
Absence of prohibited items			
EPA Hazardous Waste Number assignment ^d			
Toxicity characteristic code assignment			
VOCs from packaging materials or radiolysis present			
State Hazardous Waste Number assignment			
Radionuclides present			
Other radiological parameters: (specify)			

Attachment 13 – CCP Waste Stream Characterization Checklist – Example Form (Continued)

Page 2 of 2

CCP Waste Stream Characterization Checklist

Additional Comments: _____

- a. Identified in the AK Summary Report or included in the in-process record documentation (e.g., BDR's)
- b. If "yes," AKE completes an *Acceptable Knowledge Re-evaluation Checklist*.
- c. Identify the source of the waste testing information (e.g., VE or RTR batch data reports). Note if an AK Sufficiency Determination has been approved to meet any characterization parameter.
- d. Ensure that, if a toxicity characteristic contaminant is identified, it is not included as a listed waste, and if analytical data regarding the concentration are not available, the corresponding EPA Hazardous Waste Number is applied.

Site Project Manager:

_____ Date: _____
Print Sign

Acceptable Knowledge Expert:

_____ Date: _____
Print Sign

CCP-TP-005, Rev. 27
CCP Acceptable Knowledge Documentation**Effective Date: 08/26/2015**
Page 92 of 93

Attachment 14 – CCP Acceptable Knowledge Accuracy Report – Example Form

Page 1 of 1

CCP Acceptable Knowledge Accuracy Report

Site(s): _____

Waste Stream Number(s): _____

Waste Stream Description: _____

Waste Containers:	Waste Matrix Code Reassigned? (Y/N)	EPA Hazardous Waste Number Reassigned? (Y/N)	Radiological Data Consistent with AK? (Y/N)

* The WCIIP does not require the evaluation of AK accuracy relating to EPA Hazardous Waste Number assignment; however, the reassignment of a container to another RH waste stream or new RH waste stream based on CCP testing or Permittee confirmation testing results will count against the AK accuracy for TRU (RH and CH) waste streams.

Total containers in this report: _____

Total containers consistent with AK: _____

Percent containers consistent with AK: _____

Site Project Manager:

_____/_____
Print Sign Date:

Acceptable Knowledge Expert:

_____/_____
Print Sign Date:

Page 1 of 1

CCP TRU Waste Correlation and Surrogate Summary Form

Generator/Storage Site(s): _____

Waste Stream(s):

Waste Used to Correlate:

Waste Used as Surrogate:

Information	Y/N	Source of Information
Is physical form identified?		
Are chemicals identified?		
Is the absence of prohibited items confirmed?		
Are radiological data described?		

Explain/Justify the Use of Correlating/Surrogate Waste Stream Information:
(Attach additional supporting information, as applicable)

[illegible]

ATTACHMENT 43
CBFO MP 10.3, REV 8, AUDITS

36 PAGES

**U. S. Department of Energy
Carlsbad Field Office**

CBFO MP 10.3, Rev. 8

Effective: 11/12/2015

SUBJECT: AUDITS

Procedure Approver: //signature on file// Date: 10/21/2015
Michael R. Brown

CHANGE HISTORY

REVISION:	REASON FOR REVISION:
8	<ul style="list-style-type: none">• Updated procedure to current CBFO procedure format requirements.• Aligned procedure with the current CBFO QAPD and Organization Chart, and clarified requirements.• Incorporated general editorial changes.• Deleted outdated information regarding audit interface with the EPA.• Revised required scope for TRU waste site certification audits to address Judgement of need #2 from Accident Investigation Board Radiological release Phase II Report, and issues identified in NMED Compliance Order HWB-14-21.

1.0 PURPOSE

The purpose of this procedure is to define the process, responsibilities, and controls for planning and conducting independent announced and unannounced audits by the Carlsbad Field Office (CBFO).

2.0 SCOPE

This procedure specifies the methods for the scheduling, selection of personnel, planning, performing, reporting, and closure of independent CBFO audits, both internal and external, performed by or for the CBFO. This procedure does not apply to management assessments or self-assessments. It is not applicable to administrative audits, such as financial or accounting audits. Audits of transuranic (TRU) waste sites may be either announced or unannounced. This procedure supersedes management procedure (MP) 10.3, Revision 7, *Audits*.

3.0 REFERENCES AND DEFINITIONS

3.1 References

- 3.1.1 DOE-CBFO-94-1012, *CBFO Quality Assurance Program Document (QAPD)*
- 3.1.2 CBFO MP 3.1, *Corrective Action Reports*
- 3.1.3 CBFO MP 3.2, *Deficiency Trending and Reporting*
- 3.1.4 CBFO MP 4.9, *Quality Assurance Records*
- 3.1.5 CBFO MP 5.2, *TRU Waste Site Certification/Recertification*

AVAILABLE ONLINE AT:
<http://bellview/cbfo/procedures.html>

PROCEDURE OWNER:
Director, CBFO Office of Quality Assurance

- 3.1.6 CBFO team procedure (TP) 10.1, *Qualification of Audit Personnel and Certification of Lead Auditors*
- 3.1.7 CBFO OP 10.4, *Surveillances*
- 3.1.8 CBFO MP 10.10, *Technical Review of TRU Waste Generator Site Processes*
- 3.1.9 Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (HWFP)

3.2 Definitions

- 3.2.1 **Adequacy** – Addresses the flow-down or incorporation of requirements from upper-tier program documents (e.g., CBFO QAPD) into implementing procedures.
- 3.2.2 **Assessment** – The act of reviewing, inspecting, testing, checking, conducting surveillances, auditing, or otherwise determining and documenting whether items, processes, or services meet specified requirements. Assessments are performed by or for management.
- 3.2.3 **Audit** – A planned and documented independent assessment to determine by investigation, examination, or evaluation of objective evidence the adequacy of, and compliance with, established procedures, instructions, drawings, and other applicable documents, and the effectiveness of implementation. An audit should not be confused with surveillance or inspection activities performed for the sole purpose of process control or product acceptance.
- 3.2.4 **Auditor** – An individual who is qualified to perform assigned portions of an audit.
- 3.2.5 **Audit Team** – An audit team consists of an audit team leader and may include one or more auditors or technical specialists who have been assigned to participate in an audit.
- 3.2.6 **Audit Team Leader** – A lead auditor who is assigned to direct the efforts of an audit (or assessment) team.
- 3.2.7 **Condition Adverse to Quality (CAQ)** – An all-inclusive term used in reference to any of the following: failures, malfunctions, deficiencies, defective items, nonconformances, and technical inadequacies. A CAQ is considered significant when:
 - A. If uncorrected, the CAQ could have a serious effect on safety, operability, waste isolation, TRU waste site certification, regulatory compliance demonstration, or effective implementation of the quality assurance (QA) program.
 - B. The CAQ requires immediate notification of regulatory entities (e.g., 10 Code of Federal Regulations Part 21, WIPP HWFP Part 1.7.13).
 - C. The CAQ indicates a significant failure or breakdown in the implementation of QA program requirements.
 - D. Repeated attempts to resolve a CAQ have been unsuccessful.
 - E. The CAQ is identified in items or activities important to safety or waste isolation and compromises the ability to prevent or mitigate the consequences of an accident, thereby presenting a significant hazard to safety and health of workers and/or the public.

- 3.2.8 **Corrective Action Report (CAR)** – A document used to identify and rectify CAQs and track the associated corrective actions. CARs address CAQs that are primarily programmatic in nature, as opposed to nonconformance reports (NCRs), which address CAQs relating to a specific item such as a piece of hardware or data. The category of CARs includes corrective action reports or corrective action requests, nonconformance corrective action reports (NCARs), management corrective action reports (MCARs), deficiency reports (DRs), process deficiency reports (PDRs), audit findings, condition adverse to quality reports (CAQR), etc.
- 3.2.9 **Deficiency** – Any failure to comply with an applicable requirement.
- 3.2.10 **Effectiveness** – A determination of whether the controls established in the implementing procedure produce the desired results or end product.
- 3.2.11 **External Audit** – An audit conducted of those portions of an organization's QA program not under the direct control of CBFO or within CBFO's organizational structure.
- 3.2.12 **Implementation** – The extent of compliance with procedures.
- 3.2.13 **Independent Assessment** – An assessment of activities, conducted by a group or organization having authority and freedom from the line organization, to evaluate the scope, status, adequacy, programmatic implementation, or effectiveness of a program or process which they do not currently perform, supervise, or have direct responsibility for performing. Independence is determined based on an individual having no bias, rather than on organizational affiliation.
- 3.2.14 **Internal Audit** – An audit of those portions of CBFO's QA program retained under CBFO's direct control and within the CBFO's organizational structure.
- 3.2.15 **Lead Auditor** – An individual trained, qualified, and certified to organize and direct an audit, report audit findings, and evaluate corrective actions.
- 3.2.16 **Marginal** – A characteristic of a program, product, or activity that is close to the lower limit of satisfactory adequacy, implementation, or effectiveness. Barely exceeding the minimum requirements.
- 3.2.17 **Objective Evidence** – Any statement of fact, information, or record, either quantitative or qualitative, pertaining to the quality of an item, service, process, or end-product and based upon direct observation, measurement, test, or documentation that can be verified.
- 3.2.18 **Observation** – Documentation of marginally acceptable conditions that, if not controlled, might later escalate into a deficiency. Observations are not deficiencies and do not require a response.
- 3.2.19 **Observer** – An individual who observes the audit process, but does not directly participate in the audit.
- 3.2.20 **Recommendation** – Suggestions that are directed toward identifying opportunities for improvement and enhancing methods of implementing process or quality program requirements.
- 3.2.21 **Satisfactory** – Characteristic of a program, product, or activity that meets or exceeds the minimum applicable requirements for adequacy, implementation, or effectiveness.

- 3.2.22 **Technical Specialist** – An individual assigned to an assessment team when the scope, complexity, or special nature of the work to be examined warrants assessment of the technical adequacy of the work or effectiveness of the technical processes.
- 3.2.23 **Unsatisfactory** – Characteristic of a program, product, or activity that fails to meet the minimum applicable requirements for adequacy, implementation, or effectiveness.
- 3.2.24 **WAP (Waste Analysis Plan) Related** – An audit of a TRU waste generator site for purposes of compliance with the audit requirements contained in the WIPP HWFP.

4.0 **RESPONSIBILITIES**

4.1 CBFO Manager/Deputy Manager

Maintain overall responsibility for the CBFO QA program.

4.2 CBFO Assistant Managers and Division/Office Directors

- 4.2.1 Coordinate with the CBFO Office of Quality Assurance (OQA) Director to plan and schedule internal audits in applicable area of responsibility and to facilitate the performance of internal audits.
- 4.2.2 Coordinate the scheduling of external audits with the appropriate Assistant Manager (AM) or Division/Office Director (if applicable) and the OQA Director.
- 4.2.3 Coordinate with the OQA Director to provide auditor resources.
- 4.2.4 Coordinate personnel interfaces and access, as required, for audit performance.
- 4.2.5 Process CARs in accordance with MP 3.1.
- 4.2.6 Respond to formally submitted Observer Inquiries in applicable area of responsibility.

4.3 CBFO OQA Director

- 4.3.1 Maintain the overall CBFO independent assessment program, including maintenance of this procedure.
- 4.3.2 Coordinate with the AM or Division/Office Director in scheduling audits for the CBFO.
- 4.3.3 Review and approve CBFO audit plans.
- 4.3.4 Review and approve CBFO audit reports.
- 4.3.5 Issue approved final audit reports.
- 4.3.6 Process and maintain QA records created through this procedure in accordance with MP 4.9.
- 4.3.7 Transmit Observer Inquiries to the responsible AM or Division/Office Director.
- 4.3.8 Report the results of QA audits to the CBFO Manager/Deputy Manager as requested.

4.4 Audit Team Leader

- 4.4.1 Prepare the audit plan and notification letter.

- 4.4.2 Select personnel for the audit team and verify that audit team members are properly qualified and trained in accordance with TP 10.1, and are independent of the activity being audited.
- 4.4.3 Coordinate with audit observers.
- 4.4.4 Approve the audit checklist.
- 4.4.5 Conduct the pre- and post-audit conferences.
- 4.4.6 Coordinate the conduct of the audit.
- 4.4.7 Coordinate the resolution of emergent issues and provide guidance to the audit team as necessary during the performance of the audit.
- 4.4.8 Determine and report the adequacy, implementation, and effectiveness of the processes audited, in accordance with the audit scope.
- 4.4.9 Prepare the audit report and any CARs.
- 4.4.10 Collect and package audit records.

NOTE: When the audit team leader is a contractor, preliminary draft documents will be provided to the CBFO for finalization and issuance. Personnel to conduct the audit will be selected by the contractor. Coordination with regulators will be conducted through the CBFO OQA Director. Guidance for coordination with WIPP regulators participating in the audits of TRU waste generator sites is contained in Attachment XII.

4.5 Audit Team

- 4.5.1 Prepare audit checklists.
- 4.5.2 Attend audit-related meetings.
- 4.5.3 Conduct assigned portions of the audit.
- 4.5.4 Assist in the preparation of the audit report and any CARs.

5.0 **PROCEDURE**

5.1 Scheduling

- 5.1.1 The CBFO OQA Director will prepare a three-year rolling assessment schedule (Attachment I) that lists all assessment activities for the CBFO. This schedule shall be updated monthly. These activities shall include:
 - A. Internal and external audits
 - B. Internal and external surveillances to be performed per OP 10.4.
- 5.1.2 Audits shall be scheduled to begin as early in the life of a project or activity as practicable and continue at intervals consistent with the schedule for accomplishing the work and commensurate with the assigned control level. The following should be considered when scheduling:
 - A. Work activities, level of effort, risk, and importance to regulatory compliance, safety, TRU waste site certification, or waste isolation issues.

- B. A review of documentation furnished by, or regarding the work of, the organization or supplier (such as certificates of conformance, nonconformance notices, and corrective actions).
- C. Consideration of previous assessment results, trends, corrective actions, effectiveness, and ancillary information (e.g., information from other sources such as industry or other U.S. Department of Energy (DOE) organizations, regulating bodies, etc.).
- D. A review of previous assessments from identical or similar products or services furnished by the same organization or supplier.
- E. Results of surveillance activities.

5.1.3 Annual certification audits shall address contact-handled (CH) and remote-handled (RH) waste characterization activities if the site has approval or is seeking approval for such wastes. At a minimum, the audit shall evaluate acceptable knowledge (AK) documentation for CH and RH waste separately by summary category group, as applicable.

5.1.4 Scheduled audits shall be supplemented, as necessary, to provide continuing coverage of work activities that relate to regulatory compliance, safety, TRU waste site certification, or waste isolation for any of the following reasons:

- A. Determine the adequacy, implementation, and effectiveness of DOE contractor activities after contract award.
- B. When significant changes have been made to a program or organization.
- C. When declining trends in quality performance have been observed or are suspected.
- D. When it is necessary to verify implementation of extensive, large-scale corrective action activities.

5.1.5 Copies of the monthly updates will be forwarded to the NMED. The monthly updates should also be forwarded to the U.S. Environmental Protection Agency (EPA).

5.2 Personnel Selection

5.2.1 The audit team leader shall be selected by the CBFO OQA Director (or designee) from a list of lead auditors. Audit team members shall be selected by the audit team leader.

5.2.2 The members of the audit team shall be independent from the organization or activities being audited and shall have sufficient authority and organizational freedom to objectively identify problems.

5.2.3 The audit team leader shall:

- A. Review the training and qualifications of prospective audit team personnel and concur that they have the collective experience and training commensurate with the scope, complexity, or special nature of the activities to be audited. For WAP-related audits, the auditors/technical specialists shall have expertise in the Resource Conservation and Recovery Act (RCRA) requirements and knowledge of the analysis and documentation methods required to verify the hazardous waste characterization performed by the sites. For WAP-related audits of AK, the auditors/technical specialists shall understand the required AK

information, RCRA regulations, and EPA guidance regarding the use of AK for waste characterization, RCRA hazardous waste characterization, and the WAP. Audit team members will be independent of all TRU mixed waste management operations at the site being audited. The auditors/technical specialists shall have expertise in the specific audit areas to which they are assigned.

- B. Use technical specialists, as applicable, when assessing the effectiveness of technical processes and the acceptability of technical end-products.

- 5.2.4 For WAP-related audits, the CBFO OQA Director shall identify all audit team members to the NMED prior to the audit and shall provide the qualifications of all audit team members upon request.

5.3 Planning

NOTE: When the audit team leader or auditor is a contractor, preliminary draft documents will be provided to the CBFO for finalization and issuance. Coordination with regulators will be conducted through the CBFO OQA Director. Guidance for coordination with WIPP regulators participating in the audits of TRU waste generator sites is contained in Attachment XII.

- 5.3.1 The audit team leader shall develop an audit plan, similar to Attachment II, that identifies the following:

- A. Scope, schedule, and the procedures or checklists to be used.
- B. Names of the audit team leader and audit team members.
- C. Applicable requirements documents.
- D. Activities/contracts/tasks to be audited.
- E. Corrective action follow-up for previous audit(s), if applicable.
- F. Organizations to be notified.
- G. NMED and EPA approval status for equipment and processes to be audited. (This applies only to audits of TRU waste generator sites.)

- 5.3.2 The audit team leader shall prepare an audit notification letter addressed to the key individual of the organization to be audited. The letter shall contain the name of the audit team leader, the audit plan (as an attachment), a list of required documents for pre-audit review (if any), and any other items needed to facilitate the audit.

- 5.3.3 The audit plan and audit notification letter shall be forwarded to the CBFO OQA Director for review and concurrence. The audit notification letter should arrive at the organization to be audited at least 10 working days prior to the scheduled audit. For WAP-related audits, the audit plan shall be provided to NMED at least 30 days prior to the audit.

- 5.3.4 The audit team leader shall prepare the audit team for the audit using an orientation including the following items, as appropriate:

- A. Audit objectives and the audit scope
- B. Procedures and other documents that apply to the activities being audited

- C. Previous assessment results and completed or in-process corrective actions
- D. New programs or activities being audited
- E. Changes in programs or operations
- F. Changes in key personnel
- G. Current status of the work
- H. Role of the auditors in conducting the audit
- I. Role of the observers

5.3.5 The audit team shall develop audit checklists using a format similar to Attachment III. Checklists shall be based upon applicable QA and technical procedures and regulatory and contractual requirements, as specified in the audit plan. The checklists shall be reviewed and approved by the audit team leader to assure complete coverage of assigned scope and should be forwarded to the audited organization before the pre-audit meeting. The audit checklists for WAP-related audits should be forwarded to NMED before the pre-audit meeting. The audit checklists shall be used by the audit team to:

- A. Guide the audit.
- B. Record objective evidence such as activities, procedures, instructions, records, and personnel interviewed. (The forms in Attachment VI, Audit Summary Table Format, as needed, and Attachment VII, Personnel Contacted During the Audit, or similar forms, may be used.)
- C. Review corrective actions taken since the last audit.
- D. Document adequate and inadequate conditions and procedural implementation.

5.3.6 For WAP-related audits, the checklists shall include, at a minimum, the appropriate checklists found in WIPP HWFP Tables C6-1 through C6-6 for the waste summary category group undergoing audit.

5.3.7 For WAP-related AK audits, the checklist shall include Table C6-3 of the permit, and will include, but not be limited to, the following elements for review during the audit:

- A. Documentation of the process used to compile, evaluate, and record AK is available and implemented.
- B. Personnel qualifications and training are documented.
- C. All of the required AK documentation specified in section C4-2 of the WIPP HWFP has been compiled in an auditable record.
- D. All of the required procedures specified in section C4-3 of the WIPP HWFP have been developed and implemented, including but not limited to:
 - A procedure for assigning hazardous waste codes to waste streams in accordance with section C4-3 of the WIPP HWFP
 - A procedure for resolving discrepancies in AK documentation in accordance with section C4-3 of the WIPP HWFP

- A procedure for confirming AK information through: (a) radiography or visual examination, (b) headspace gas sampling and analysis, and (c) homogeneous waste sampling and analysis in accordance with section C4-3 of the WIPP HWFP

E. Results of other audits of the TRU mixed waste characterization programs at the site are available in site records.

5.3.8 Audits of generator sites for purposes of certification for characterization, certification, and/or shipment of TRU waste to WIPP will also include in the scope, as applicable:

- A. Verification that a technical review of the generator site's processes has been performed per MP 10.10.
- B. Verification that issues identified during the technical review have been resolved per MP10.10, if applicable.

5.4 Performance

5.4.1 The audit team leader shall conduct a pre-audit conference with the appropriate personnel within the audited organization. Meeting attendance will be documented, using an attendance record similar to Attachment IV, Attendance Record. The purpose of this meeting is to:

- A. Introduce the audit team, participants, and observers.
- B. Obtain additional information on the organization and status of work being done.
- C. Discuss the audit objectives, scope, and conduct.
- D. Identify the specific areas to be audited.
- E. Identify the processes or functions to be observed.
- F. Provide information on the audit activities and schedule.
- G. Arrange for contacts and escorts, when needed.
- H. Discuss logistics and meeting schedules.
- I. Arrange for site participation required, including site interfaces.

5.4.2 Audits shall include personnel interviews, document and record reviews, observations of operations, and any other activities deemed necessary by the auditors to meet the objectives of the audit. Observations or deficiencies identified during the audit will be investigated or evaluated, as necessary, to determine if they are isolated conditions or represent a general breakdown of the QA program.

5.4.3 Audited personnel will be given the opportunity to correct any CAQs that can be corrected during the audit period. CAQs and observations will be documented and included as part of the audit report. Those items that have been resolved during the audit (isolated deficiencies that do not require a root cause determination, actions to preclude recurrence, or non-editorial procedure revisions) will be verified prior to the end of the audit, and the resolution will be described in the audit report. Those items that affect the quality of the program and/or the data generated by that program, which are required by the WAP, will be documented on a CAR and included as a part of the final audit report. For WAP-related audits, RCRA-related CARs identified by the site during self-audits will be evaluated during the audit.

- 5.4.4 Objective evidence shall be examined to the detail necessary to determine whether QA and technical program requirements are adequately documented and are being implemented, and that the associated work processes are effective.
- 5.4.5 For WAP-related audits, the C6 checklist must indicate that the objective evidence observed verifies that the site has met the quality assurance objectives (QAOs) for the program elements, methods, and activities being audited.
- 5.4.6 RCRA-related site-generated CARs shall be evaluated annually during WAP-related audits. Copies of RCRA-related site-generated CARs, relevant corrective action documentation, and site-generated CAR closures shall be obtained during the audit, if applicable. Copies of these CARs shall be provided to the CBFO CAR Coordinator for tracking in accordance with MP 3.1.
- 5.4.7 In cases where discrepancies exist between the audit checklists and requirements documents, the requirements documents take precedence.
- 5.4.8 CAQs that, in the auditor's judgment, require prompt corrective action shall be reported immediately to the management of the audited organization and the audit team leader.
- 5.4.9 CAQs shall be documented on a CAR (MP 3.1) or a Corrected During the Audit (CDA) Form (see Attachment X). The audit team member who identifies each CAQ must participate in the preparation of the CAR or CDA to the extent necessary to identify relevant issues. CARs associated with the audit shall be prepared in accordance with MP 3.1.
- 5.4.10 The audit team leader should conduct daily team caucuses to gather details of the audit results as they occur and to summarize the audit results in preparation for the daily meetings with the management of the audited organization. Attachment IX, Audit Concern Form, may be used to document items for the team caucus.
- 5.4.11 The audit team leader should conduct daily meetings with the management of the audited organization during the course of the audit to provide feedback relative to audit concerns, results, and progress.
- 5.4.12 If audit observers identify issues that cannot be resolved through the audit process, these issues should be documented by the observer on an Observer Inquiry Form. An Observer Inquiry Form and the instructions for completing it are contained in Attachment XI.
- 5.4.13 The audit team leader shall conduct a post-audit conference with the management of the audited organization. Meeting attendance shall be documented using Attachment IV. The post-audit conference discussion shall include the following, as applicable:
 - A. Audit results, including deficiencies that will be documented on CARs, and those corrected during the audit
 - B. Observations
 - C. Improvement recommendations
 - D. Probable schedule for issuance of the audit report and any CARs
 - E. Feedback from the audited organization and observers regarding the conduct of the audit
 - F. A statement of the overall adequacy, implementation, and effectiveness of the audited processes within the scope of the audit

5.5 Reporting

NOTE: When the audit team leader or auditor is a contractor, preliminary draft documents will be provided to the CBFO QA organization for finalization and issuance.

- 5.5.1 An audit report (see Attachment V) shall be prepared and signed by the audit team leader, then sent to the CBFO OQA Director for review and approval.
- 5.5.2 The audit report shall be reviewed, approved, and issued by the CBFO OQA Director. Audit reports shall be issued within 30 days of the completion of the audit. The report distribution shall include the CBFO Manager, the appropriate management of the audited organization, and the responsible AM or Division/Office Director(s). WAP-related audit reports will be transmitted to NMED.
- 5.5.3 For WAP-related audits, a final audit report shall be prepared after all WAP-related CARs are closed. The final audit report shall be reviewed, approved, and issued by the CBFO QA Director. One formal final audit report shall be submitted to NMED in hard copy, but any additional copies may be submitted in electronic format. One copy shall be submitted to the WIPP management and operating contractor for retention in the operating record. The WIPP Webmaster shall be notified that the final audit report must be posted to the internet and an email notification must be distributed to the personnel on the distribution list. The report shall contain information related to WAP implementation. This shall include:
 - A. The WAP-related portions of the audit report
 - B. Completed C6 checklists
 - C. WAP-related audited procedures
 - D. Documentation from all associated WAP-related CARs including the CAR, description of all corrective actions taken, and actions taken to close out the CAR
 - E. Documentation supporting all corrective actions taken on WAP-related CARs
 - F. Other applicable documents that provide evidence of WAP implementation
 - G. Procedure Revision Matrix (site recertification audits only) (see example in Attachment XIII)
- 5.5.4 The audit team leader shall forward Observer Inquiry Forms generated during the audit to the responsible AM or Division/Office Director(s) for resolution.
- 5.5.5 The AM or Division/Office Director is responsible for submitting a written response to Observer Inquiries. Observer Inquiries to NMED require response within 30 days of inquiry submission. NMED will examine the response and consider this information as part of the audit review and approval process.

5.6 Audit Response, Follow-up, and Close-Out

- 5.6.1 The audit is considered to be closed upon issuance of the audit report.
- 5.6.2 Response, follow-up, verification, and closure of CARs issued during the audit shall be in accordance with the requirements of MP 3.1.

5.7 Dispute Resolution to NMED

- 5.7.1 If there is a disagreement with an action on a final audit report by NMED, a dispute resolution may be invoked within seven calendar days of receipt of the action on the final audit report.
- 5.7.2 If a dispute resolution is invoked, an email notification shall be sent to the WIPP Webmaster for posting to the internet and an email notification must be distributed to the personnel on the distribution list.

6.0 RECORDS

- 6.1 The following documentation generated as a result of implementing this procedure shall be processed when the audit report is issued and maintained as QA records in accordance with MP 4.9, *Quality Assurance Records*.
 - 6.1.1 Audit Plan
 - 6.1.2 Audit Report (section 5.5.2)
- 6.2 Copies of the following documentation generated as a result of implementing this procedure shall be transmitted to the WIPP management and operating contractor for retention in the facility operating record:
 - 6.2.1 WAP-related audit plans
 - 6.2.2 WAP-related audit notification letters
 - 6.2.3 WAP-related audit reports (section 5.5.2)
 - 6.2.4 WAP-related final audit reports and supporting documentation (section 5.5.3)

7.0 ATTACHMENTS

- Attachment I: Assessment Schedule Format (example)
- Attachment II: Audit Plan Format (example)
- Attachment III: Audit Checklist Format (example)
- Attachment IV: Attendance Record (example)
- Attachment V: Audit Report Format (example)
- Attachment VI: Audit Summary Table Format (example)
- Attachment VII: Personnel Contacted During the Audit (example)
- Attachment VIII: Objective Evidence Reviewed (example)
- Attachment IX: Audit Concern Form (example)
- Attachment X: Corrected During the Audit (CDA) Form (example)
- Attachment XI: Observer Inquiry Form (example)
- Attachment XII: Guidance for Coordination of TRU Waste Site Audits
- Attachment XIII: Procedure Revision Matrix (example)

**CBFO ASSESSMENT SCHEDULE FORMAT
CARLSBAD FIELD OFFICE
ASSESSMENT SCHEDULE
(Example)**

ORGANIZATION/ SCOPE	CBFO ORGANIZATION	REMARKS & SCHEDULE												JAN YEAR	FEB YEAR	MAR YEAR	APR YEAR	MAY YEAR	JUN YEAR	JUL YEAR	AUG YEAR	SEP YEAR	OCT YEAR	NOV YEAR	DEC YEAR

Approved by:

Name: _____
Director CBFO Office of Quality Assurance

_____ Date

Approved by:

Name: _____
CBFO Manager

_____ Date

Audit Number: _____

Organization: _____

Date and Location of Audit: _____

<u>Name</u>	<u>Role</u>	<u>Company</u>

A post-audit conference is scheduled for (date, time, and location)

Prepared By: _____ Audit Team Leader _____ Date _____

Concurrence: CBFO OQA Director _____ Date _____

ATTACHMENT II

Page 2 of 2

Processes and Equipment to be Reviewed During Audit A-XX-XX of XX Site

Process/Equipment Description	WWIS Unique Equipment ID	Applicable to the Following Waste Streams/Groups of Waste Streams	Currently Approved by NMED	Currently Approved By EPA
NEW PROCESSES OR EQUIPMENT				
RTR – Unit #4	Not Assigned	Debris (S5000)	No	No
RTR – Pad 15	Not Assigned	Debris (S5000)	No	No
Prohibited Item Removal	Not Assigned	Debris (S5000)	No	No
PREVIOUSLY APPROVED PROCESSES OR EQUIPMENT				
Acceptable Knowledge	Not Applicable	Debris (S5000)	Yes	Yes
Data Verification and Validation	Not Applicable	Debris (S5000)	Yes	Yes
NDA – Image Passive/Active Neutron – Gamma Energy Analysis (IPAN-GEA)	1IP1	Debris (S5000)	NA	Yes
IQ3 Mobile Gamma Assay System	1IQ1	Debris (S5000)	NA	Yes
RTR – Unit #1	1RR1	Debris (S5000)	Yes	Yes
Visual Examination	VISUAL	Debris (S5000)	Yes	Yes
Headspace Gas Sampling and Analysis – NFT Unit VOCs	1HG1	Debris (S5000)	Yes	NA
Headspace Gas Sampling and Analysis – NFT Unit H2/CH4	1HG1	Debris (S5000)	NA	NA
PDP (HSG)	Not Applicable	Debris (S5000)	Yes	NA
PDP (NDA)	Not Applicable	Debris (S5000) Solids (S3000)	NA	Yes
WWIS	Not Applicable	Debris (S5000)	Yes	Yes
Quality Assurance Program	Not Applicable	Debris (S5000), Homogeneous Solis (S3000), Soils and Gravel (S4000)	NA	Yes

NOTE: This table format may be modified by the ATL as required.

**CBFO AUDIT CHECKLIST FORMAT
(Example)
CBFO AUDIT CHECKLIST**

Organization Evaluated: _____ Audit Number: _____

Activities Evaluated: _____ Date of Evaluation: _____

Controlling Document(s): _____

Item No.	Requirement(s) and/or Characteristic(s)	Objective Evidence	*Results

Prepared by: _____ Approved by: _____ Page ____ of ____

*Indicate Results: Satisfactory (SAT), Unsatisfactory (UNSAT), Not Applicable (NA), Indeterminate (I)

CBFO AUDIT CHECKLIST FORMAT
(Continuation Sheet)
(Example)

Organization Evaluated: _____ Audit Number: _____
Activities Evaluated: _____

Item No.	Characteristic(s)	Objective Evidence	*Results

ATTENDANCE SHEET

Other ☐

[illegible]

**AUDIT REPORT FORMAT
(Example)**

**U.S. DEPARTMENT OF ENERGY
CARLSBAD FIELD OFFICE**

AUDIT REPORT

OF

(AUDITED ORGANIZATION)

(ORGANIZATION LOCATION)

AUDIT NUMBER A-YY-XX

(DATE OF THE AUDIT)

(PRIMARY ACTIVITY EVALUATED)



Prepared By:

Audit Team Leader

Date

Approved:

CBFO OQA Director

Date

1.0 EXECUTIVE SUMMARY

Audit A-YY-XX was conducted to evaluate the *(adequacy, implementation, and/or effectiveness)* of *(describe the primary activity evaluated)*. The audit was conducted at *(location)* from *(dates)*. The audit team concluded that *(provide statements on adequacy, implementation and/or effectiveness)*. The audit team identified *(number)* conditions adverse to quality resulting in the issuance of *(number of)* Corrective Action Report(s) (CAR's) that require corrective action in the areas of *(identify deficient audited areas)*. *(Number of)* isolated deficiencies requiring only remedial actions were corrected during the audit (CDA's). *(Number of)* observations and *(number of)* recommendations are being offered for management consideration. CAR's, CDA's, Observations, and Recommendations are described in Section 6.0.

2.0 SCOPE

The scope of this *(internal/external)* Audit A-YY-XX, conducted at *(the location of the audit)*, was to evaluate the adequacy, implementation, and/or effectiveness of *(describe the subject/activities evaluated)*. The following elements were evaluated in accordance with the CBFO QAPD *(list the appropriate elements)*. The following CBFO technical characterization elements were evaluated in accordance with the WAP *(list the appropriate elements)*. The following transportation technical elements were evaluated in accordance with the CBFO TRAMPAC *(list the appropriate elements)*. Evaluation of the *(describe the primary activity evaluated)* was based on current revisions of the following documents *(generally state the basis of the audit)*.

3.0 AUDIT TEAM AND OBSERVERS

The audit team consisted of the following personnel: *(List name, title and organization.)*
The following inspectors were present during the audit: *(List name, title, and organization.)*
The following observers were present during the audit: *(List name, title and organization.)*

4.0 AUDIT PARTICIPANTS

The following individuals were involved in the audit: *(List name, title and organization. If a substantial number of personnel are contacted, a table may be developed as an attachment to the audit report)*.

5.0 AUDIT RESULTS

5.1 Program Adequacy, Implementation, and Effectiveness

The audit team concluded that *(provide statements on the adequacy, implementation, and effectiveness of the QA program)*.

5.2 QA Program Audit Activities

Describe the results of the QA portion of the audit in concise terms. Sufficient detail must be provided for QA activities to support the effectiveness determination. The quality assurance program procedures evaluated during this audit are provided in Attachment *(number)*.

5.3 Technical Activities

Describe the results of the audit in concise terms. Sufficient detail must be provided for technical activities to demonstrate that the technical processes used and the objective evidence reviewed, supports the effectiveness determination. If information is extensive, consider the use of attachments for audit details and identification of the objective evidence reviewed.

6.0 CARS, CDAs, OBSERVATIONS, AND RECOMMENDATIONS

6.1 CARs

6.1.1 CARs From Previous Audits

The following CARs were reviewed to ensure the corrective actions were complete and continued to be effectively implemented: *(discuss each CAR evaluated)*.

6.1.2 CARs Initiated as a Result of CBFO Audit (*number*)

The following (*number*) CARs, initiated as a result of Audit (*number*), have been transmitted to (*organization audited*) under separate cover. A brief description of each CAR is provided below. *(Provide summary details of any CARs.)*

6.2 Deficiencies Corrected During the Audit (CDA)

During the audit, (*organization audited*) was able to correct (*number*) isolated conditions adverse to quality identified in the (*areas audited*). A description of these items and their resolution is given below: *Briefly describe the CDAs and their resolutions.*

6.3 Observations

The following (*number*) Observations were identified during the audit. *Briefly describe the Observations.*

6.4 Recommendations

The following (*number*) Recommendations are presented for (*audited site*) management consideration. *Briefly describe the Recommendations.*

7.0 ATTACHMENTS

List the Attachments. Normal attachments are: 1) Personnel Contacted During the Audit and 2) Table of Procedures Audited. For audits of TRU waste generator sites, attach a table showing the processes and equipment reviewed during the audit.

[illegible]

PROCEDURES AUDITED

NUMBER	PROCEDURE NUMBER AND REVISION	TITLE
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
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21.		
22.		
23.		
24.		
25.		
26.		
27.		
28.		
29.		

Processes and Equipment Reviewed During Audit A-XX-XX of XX Site

Process/Equipment Description	WWIS Unique Equipment ID	Applicable to the Following Waste Streams/Groups of Waste Streams	Currently Approved by NMED	Currently Approved By EPA
NEW PROCESSES OR EQUIPMENT				
RTR – Unit #4	Not Assigned	Debris (S5000)	No	No
RTR – Pad 15	Not Assigned	Debris (S5000)	No	No
Prohibited Item Removal	Not Assigned	Debris (S5000)	No	No
PREVIOUSLY APPROVED PROCESSES OR EQUIPMENT				
Acceptable Knowledge	Not Applicable	Debris (S5000)	Yes	Yes
Data Verification and Validation	Not Applicable	Debris (S5000)	Yes	Yes
NDA – Image Passive/Active Neutron – Gamma Energy Analysis (IPAN GEA)	1IP1	Debris (S5000)	NA	Yes
IQ3 Mobile Gamma Assay System	1IQ1	Debris (S5000)	NA	Yes
RTR – Unit #1	1RR1	Debris (S5000)	Yes	Yes
Visual Examination	VISUAL	Debris (S5000)	Yes	Yes
Headspace Gas Sampling and Analysis – NFT Unit VOCs	1HG1	Debris (S5000)	Yes	NA
Headspace Gas Sampling and Analysis – NFT Unit H2/CH4	1HG1	Debris (S5000)	NA	NA
PDP (HSG)	Not Applicable	Debris (S5000)	Yes	NA
PDP (NDA)	Not Applicable	Debris (S5000) Solids (S3000)	NA	Yes
WWIS	Not Applicable	Debris (S5000)	Yes	Yes
Quality Assurance Program	Not Applicable	Debris (S5000), Homogeneous Solis (S3000), Soils and Gravel (S4000)	NA	Yes

NOTE: This table format may be modified by the ATL as required.

**AUDIT SUMMARY TABLE FORMAT
(Example)**

(1) Program Element	(2) Audited Activity	(3) CAR	(4) CDA	(5) Obs	(6) Rec	(7) Adq	(8) Imp	(9) Eff
	TOTAL							

Legend:

Adq = Adequacy Statement

Eff = Effectiveness Statement

M = Marginal

Rec = Recommendation Offered

Shaded = None

CAR = Corrective Action Report Issued

Imp = Implementation

NA = Not Applicable

S = Satisfactory

CDA = Corrected During the Audit

IND = Indeterminate

Obs = Observation

U=Unsatisfactory

COMPLETION INSTRUCTIONS FOR THE AUDIT SUMMARY TABLE

The audit summary table is used to identify the details and overall status of the audit results. Completion of the audit summary table provides a summary of the quality and technical activities reviewed by audit checklists and the level of program procedure compliance and effectiveness. The following instructions provide guidance on what information is required for completing each column of the audit summary table:

First Column (Optional)

"Program Element," the program area or criteria (e.g., organization, design control, procurement document) being evaluated should be identified in this column. Generally these are arranged in NQA-1 or QAPD element sequence. Complete this column for each area or criteria being examined.

Second Column

"Audited Activity," description of activity being audited.

Third Column

"CAR," the identification number of any CAR(s) related in this "audited activity," if any, are identified in this column.

Fourth Column

"CDA," any deficiency or deficiencies identified during the audit of a specific area in which the deficiency or deficiencies were corrected and verified during the audit, should be identified in this column. The entry should correlate with the CDA number in Section 6 of the audit report.

Fifth Column

"Observation," any observation(s) noted during the audit of a specific area, should be identified in this column. The entry should correlate with the observation number in Section 6 of the audit report.

Sixth Column

"Recommendation," any recommendation(s) offered during the audit which address a specific activity or area, should be identified in this column. The entry should correlate with the recommendation number in Section 6 of the audit report.

COMPLETION INSTRUCTIONS FOR THE AUDIT SUMMARY TABLE (Continued)**Seventh Column**

"Adequate," the adequacy of the procedure being evaluated for a specific activity or area, should be identified in this column. A procedure is either "satisfactory" (contains all the applicable requirements) "marginally satisfactory" or is "unsatisfactory."

Eighth Column

"Implementation," the status of implementation of the program document for the specific activity or area being evaluated, should be identified in this column. Implementation is either "satisfactory," "marginally satisfactory," or "unsatisfactory."

Ninth Column

"Effectiveness," the effectiveness of the process described in the procedure being evaluated relative to the achievement of desired results or end product, should be identified in this column. Effectiveness is either "satisfactory," "marginally satisfactory," or "unsatisfactory."

The last row of the Table

Summarize columns 3 through 10. Note the total number of CARs, CDAs, Obs, Rec, are entered into the appropriate column in the "total" row. Under the Adq, Imp, and Eff columns, enter the overall results of the audit.

Note: The table may be altered, depending upon the scope of the audit. For example, if effectiveness is not part of the audit scope, that column is eliminated.

Page ____ of ____

[illegible]

[illegible]

Audit Number: _____

Date: _____

AUDIT CONCERN FORM
(Example)

AUDITOR: _____

Checklist Activity (Item No): _____

CONCERN NO. _____

I WHAT IS THE CONCERN:

CONCERN DISCUSSED WITH WHOM: _____

Sample size _____

Population Size (If known) _____

II DOCUMENT REQUIREMENTS (Name, Revision, Paragraph):

III CONCERN DISPOSITION:

CDA _____

REC _____

CAR _____

Exem. Prac. _____

OBS _____

NONE _____

IV VERIFICATION OF ACTIONS TAKEN DURING THE AUDIT:

V If the concern is a deficiency (CAR or CDA), the ATL must answer the following questions:

1. Does this deficiency affect waste already shipped to WIPP? Yes _____ No _____

Why?

2. Does this deficiency affect waste that the site is currently certified to ship? Yes _____ No _____

Why?

If the answer to question 1 or 2 is "Yes," TRU Sites and Transportation Division (TSTD) must be notified immediately.

Name of TSTD person notified: _____

Time and Date of notification: _____

CORRECTED DURING THE AUDIT (CDA) FORM
(Example)

CORRECTED DURING THE AUDIT			
1.0 CDA #	2.0 Audit Number	3.0 Responsible Organization	4.0 Identified By/Date
<div>5.0 Description of Condition Adverse to Quality:</div> <div style="text-align: center; font-size: 48px; opacity: 0.2; transform: rotate(-15deg); position: absolute; top: 50%; left: 50%;">EXAMPLE</div>			
<div>6.0 Requirements not met (include document number, revision number, and paragraph):</div>			
<div>7.0 Actions Taken By Auditee:</div>			
<div>Verified By:</div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"><div style="border-bottom: 1px solid black; width: 150px; text-align: center;">Auditor</div><div style="border-bottom: 1px solid black; width: 100px; text-align: center;">Date</div></div>		<div>Trend Cause Code</div>	

* Note: 1) All blocks are to be filled out by the audit team member who identified the deficiency.
2) Trend Cause Codes are provided in Attachment I of MP 3.2.

Date

Observer Inquiry Form Instructions

During audits, observers may identify issues that cannot be resolved through the audit process. Examples of these types of issues include, but are not limited to:

- Concerns regarding the validity of requirements
- Concerns regarding the interpretation of requirements by the audit team or CBFO
- Process concerns regarding efficiency, priority of work being done, and approach to work accomplishment
- Concerns regarding CBFO policy or objectives
- Concerns that are outside the scope of the audit

If the observer does not believe that a concern can be resolved with the assigned auditor or technical specialist, the next communication should be with the Audit Team Leader (ATL). It is the responsibility of the ATL to serve as a catalyst for resolution of problems and concerns. In the event that the ATL believes that the observer has a request or a concern that will require extensive investigation or that the concern is a matter better resolved between the observer and CBFO, the ATL should request that the observer document the issue or concern on an Observer Inquiry Form in the "Description of Inquiry" section.

The ATL should then complete the "ATL Response" section of the Observer Inquiry Form. Because of the nature of observer inquiries, the normal response will be that the inquiry will be forwarded to the appropriate CBFO Assistant Manager or Office/Division Director for resolution.

The ATL should request that the observer accept the response, or if the response is not acceptable the observer should document the reason why the response is not acceptable.

The ATL should then sign the "Inquiry Closed" line on the Observer Inquiry Form. This indicates that for purposes of the audit, the inquiry has been completed. The ATL will transmit the Observer Inquiry Form to the responsible CBFO Assistant Manager or Office/Division Director for further action, if applicable, to the CBFO QA Director for information, and to the CBFO CAR coordinator for tracking in the CBFO CAR Reporting and Tracking System.

GUIDANCE FOR COORDINATION OF TRU WASTE SITE AUDITS

Activities (Responsible Party)	Schedule	Comments
Update and Transmit Assessment Schedule to EPA and NMED (CBFO OQA Director)	Monthly	
Enter audit/approval information into the CBFO audit/certification database (CBFO OQA Director)	As new information becomes available	
Prepare Audit Plan Audit Team Leader (ATL)	45 days prior to audit	The audit plan is signed by the Audit Team Leader and the CBFO OQA Director. The audit plan will include a matrix identifying summary category groups, processes, and equipment to be evaluated during the audit. This will also indicate what has been previously approved by EPA and NMED, and those summary category groups, processes, and equipment for which regulatory approval is being sought.
Prepare/issue site notification letter including audit plan. (ATL)	30 days prior to audit	EPA notification is via cc on the TRU waste site notification letter. At a minimum, EPA WIPP QA Lead and the EPA WIPP Waste Characterization Lead will receive the notification letter. The cognizant QA specialist may sign the TRU waste site notification letter.
Prepare/issue NMED notification letter including audit plan. (ATL)	30 days prior to audit	NMED is notified via a separate letter from the CBFO Manager to NMED Hazardous Waste Bureau Project Manager (WIPP Project).

Activities (Responsible Party)	Schedule	Comments
Send procedures to be audited to NMED. (ATL)	14 days prior to audit	Coordinate with NMED and transmit procedures to NMED consultants if requested.
Transmit interim audit report to EPA and NMED. (CBFO OQA Director)	within 30 days after the audit	
Issue Final Audit Report (CBFO OQA Director)	Upon CAR Closure	The Final Audit Report is transmitted to the NMED Hazardous Waste Bureau Project Manager (WIPP Project), the Operating Record, and the M&RC.
Obtain NMED approval of the Final Audit Report (NMED)	When Completed	NMED responsibility.
Obtain EPA review and concurrence on the TRU waste site certification letter. (TSTD)	When Completed	Performed in accordance with MP 5.2, <i>TRU Waste Site Certification/Recertification</i>

Note: This table provides guidance only. Activities and schedules may be changed with mutual agreement between CBFO, NMED, and/or EPA.

EXAMPLE PROCEDURE REVISION MATRIX

INL/CCP Labs Recertification Annual Audit A-XX-XX

Previous INL/CCP Labs Recertification Annual Audit A-XX-XX

No.	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
1	CCP-PO-001	CCP Transuranic Waste Characterization Quality Assurance Project Plan	R14	R16	<p>15 - Revised to remove Visual Examination Expert (VEE) decisions and signature and date from Table B3-11, Testing Batch Data Report Contents. Added the Idaho National Laboratory (INL) procedures to Attachment 1, Implementing Procedures.</p> <p>16 - Revised to incorporate statistical terminology and Text changes included in September 2007 Class 1 Permit Notifications and update Attachment 1, Implementing Procedures.</p>
2	CCP-PO-002	CCP Transuranic Waste Certification Plan	R18	R20	<p>19 - Revised to change the references for quality planning, list Central Characterization Project (CCP) special processes, and add a new Section 5.7 addressing configuration management of CCP equipment.</p> <p>20 - Revised for the addition of Remote-handled waste shipments.</p>
3	CCP-PO-030	CCP/Battelle Energy Alliance Analytical Chemistry & Instrument Department Interface Document	R0	R0	Revised to address Corrective Action Report (CAR) SRS-0002-XX.
4	CCP-PO-031	CCP/Idaho Cleanup Project Analytical Laboratories Department Interface Document	R0	R0	26 - Revised to address U.S. Department of Energy (DOE) Carlsbad Field Office (CBFO) Corrective Action Report (CAR) 08-XXX.

ATTACHMENT 44
CBFO MP 10.10, REV. 0, TECHNICAL REVIEW OF TRU WASTE
GENERATOR SITE PROCESSES

11 PAGES

U.S. Department of Energy
Carlsbad Field Office

MANAGEMENT PROCEDURE

CBFO MP 10.10, Rev. 0

Effective: 10/27/2015

SUBJECT: TECHNICAL REVIEW OF TRU WASTE GENERATOR SITE PROCESSES

Procedure Approver: //signature on file//
Roger A. Nelson

Date: 10/27/2015

CHANGE HISTORY

REVISION:	REASON FOR REVISION:
0	Initial Issue

1.0 PURPOSE

This management procedure (MP) defines the process and responsibilities for performance of Carlsbad Field Office (CBFO) transuranic (TRU) waste technical reviews. Technical reviews are performed to evaluate processes that can affect the integrity of the TRU waste certification program to ensure adequate controls are in place to protect the national asset of the Waste Isolation Pilot Plant (WIPP) facility from an event occurring within TRU waste containers at WIPP. These reviews are not intended to duplicate or replace TRU waste certification audits, but rather are focused on processes not included in the TRU certification program.

2.0 SCOPE

This procedure applies to those activities performed by CBFO, Los Alamos National Laboratory-Carlsbad Office (LANL-CO), and affiliated organizations. This procedure describes the activities required to conduct formal reviews of processes and procedures that generate, package, repackaging, remediate, or treat TRU waste at TRU waste generator sites that ship or plan to ship TRU waste to the WIPP for disposal.

3.0 REFERENCES

- 3.1 ASME NQA-1-1989, *Quality Assurance Program Requirements for Nuclear Facilities*
- 3.2 U.S. DOE Order 226.1B, *Implementation of Department of Energy Oversight Policy*
- 3.3 *Waste Isolation Pilot Plant Hazardous Waste Facility Permit, Waste Analysis Plan (WIPP WAP)*
- 3.4 DOE/CBFO-14-3533, *ICE User's Manual*
- 3.5 DOE/CBFO 15-3545, *Technical Review Program Plan*
- 3.6 DOE/WIPP-02-3122, *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant (WIPP WAC)*
- 3.7 LCO-QP2-3, *LANL-CO Qualification and Training*

AVAILABLE ONLINE AT:
<http://bellview/cbfo/Procedures.html>

PROCEDURE OWNER:
Assistant Manager of the Office of Program
Management National TRU Program

4.0 **RESPONSIBILITIES**

- 4.1 CBFO Manager/Deputy Manager
 - 4.1.1 Ensure site technical reviews are conducted.
 - 4.1.2 Approve final technical review report.
 - 4.1.3 Transmit final technical review report to generator site DOE Manager.
- 4.2 CBFO Office of Program Management (OPM) National TRU Program (NTP) Assistant Manager (AM)
 - 4.2.1 Assign the CBFO technical review team leader.
 - 4.2.2 Ensure establishment of a system for tracking technical review issues.
 - 4.2.3 Approve team participants external to the CBFO or LANL-CO organizations (i.e., generator site observers/participants from generator sites other than the one being reviewed).
- 4.3 CBFO TRU Sites and Transportation Division (TSTD) Director
 - 4.3.1 Ensure resources are provided for the technical review activity.
 - 4.3.2 Provide supervisory support for the CBFO technical review team leader.
- 4.4 LANL-CO Program Director
 - 4.4.1 Select the LANL-CO technical review team leader.
 - 4.4.2 Ensure selected LANL-CO review team members have skills and qualifications commensurate to assigned review areas in compliance with LCO-QP2-3, *Qualification and Training*.
 - 4.4.3 Ensure the LANL-CO technical review team has received training or briefings on required programmatic documents (i.e., DOE/CBFO-02-3122, the WIPP WAP, CBFO MP 10.10, DOE-CBFO 15-3545, and protocols associated with assessments), and ensure that training and briefings are documented in LCO-QP2-3, Attachment 1, LANL-CO Qualification and Training Record.
 - 4.4.4 Consistent with NQA-1 requirements, ensure that selected review personnel are independent of the functional areas being reviewed (i.e., not directly responsible for performance of the activities that will be reviewed).
- 4.5 CBFO Technical Review Team Leader
 - 4.5.1 Responsible for the overall technical review process.
 - 4.5.2 Responsible for ensuring the Memorandum of Agreement (MOA) between CBFO and the generator site contains requirements that allow the technical review to be completed as specified in this procedure and for ensuring that the MOA has been signed prior to the site visit.
 - 4.5.3 Ensure technical reviews are conducted in accordance with this procedure and DOE/CBFO 15-3545, *Technical Review Program Plan*.

- 4.5.4 Track technical review issues in the CBFO Issue Collection and Evaluation (ICE) system as described in DOE/CBFO-14-3533, *ICE User's Manual*.
- 4.5.5 Submit the list of potential external review team participants to the CBFO OPM NTP AM for approval.
- 4.5.6 Review scope, plan, and checklists.
- 4.5.7 Participate in the technical review.
- 4.5.8 Submit the technical review report documenting the results of the technical review to the CBFO Manager, and brief the CBFO Manager, OPM NTP AM, TSTD Director, and the generator site DOE Manager (if applicable) on the technical review activities and results.
- 4.5.9 At the direction of the CBFO Manager, brief the corporate board on the results of the technical review.
- 4.6 LANL-CO Technical Review Team Leader
 - 4.6.1 Provide overall direction to the review team.
 - 4.6.2 Select team members and submit to LANL-CO Program Director for approval.
 - 4.6.3 Assign review responsibilities to the team members.
 - 4.6.4 Notify the CBFO technical review team leader of the team members and assigned areas of review.
 - 4.6.5 Request and disseminate site documentation and information.
 - 4.6.6 Prepare and approve the technical review scope, plan, and report.
 - 4.6.7 Approve checklists prepared by team members.
 - 4.6.8 Serve as logistics coordinator with the sites and review team.
 - 4.6.9 Manage the report writing process.
 - 4.6.10 Assist the CBFO technical review team leader in the technical review process.
 - 4.6.11 Ensure the identified issues are documented.
 - 4.6.12 Submit the report to the CBFO technical review team leader.
 - 4.6.13 Manage the technical review team contractor personnel.
 - 4.6.14 Coordinate the technical review with the host site.
- 4.7 Review Team Members
 - 4.7.1 Review assigned site documentation.
 - 4.7.2 Prepare checklists.
 - 4.7.3 Attend conference calls, meetings, and the site review at the direction of the LANL-CO technical review team leader.

- 4.7.4 Document technical review results on checklists.
- 4.7.5 Provide detailed narrative of the specified areas of review to the technical review team leader within the scheduled timeframes.
- 4.7.6 Review and provide comments on the draft technical review report.

5.0 **PROCEDURE**

5.1 Technical Review Planning

5.1.1 CBFO Technical Review Team Leader

Select the site that will be subject to the technical review based on the TRU waste shipping schedule, TRU Waste Corporate Board recommendations, current waste processing activities, and LANL-CO technical review team leader input.

5.1.2 LANL-CO Technical Review Team Leader

At the direction of the CBFO technical review team leader, contact the generator site DOE TRU waste management representative to inform the site of the planned technical review and establish lines of communication and points-of-contact.

5.1.3 CBFO Technical Review Team Leader

- A. Verify that the agreements specific to conducting the technical review are contained in the MOA.
- B. Ensure the MOA is in place prior to the on-site technical review.

5.1.4 LANL-CO Technical Review Team Leader

- A. Transmit Attachment I, General Lines of Inquiry (LOIs) (from DOE/CBFO 15-3545, *Technical Review Program Plan*) and/or previously developed checklists to the identified generator site point-of-contact.
- B. Once lines of communication are established, arrange a conference call or site visit. The following items should be addressed:
 - Scope of the technical review in terms of facilities to be visited and waste processes to be reviewed.
 - General LOIs as they apply to the scope of the technical review.
 - Previous assessments the site believes should be considered before the review.
 - Documentation to address the general LOIs or previously developed checklists, as appropriate with an understanding that documents need to be provided prior to final review-specific checklists being developed by the technical review team.
 - Understanding that based on results of this meeting or call, the site will collect documentation addressing the general LOIs and provide it to the review team

- Potential dates for the technical review.
 - Names and contact information for site personnel that will be assigned to the review team.
 - Outstanding issues that have not been resolved.
- C. Provide a list of review team members to the LANL-CO Program Manager and the CBFO technical review team leader.

5.1.5 LANL-CO Program Manager

- A. Ensure the LANL-CO technical review team has received training or briefings on required programmatic documents (i.e., DOE/CBFO-02-3122, the WIPP WAP, CBFO MP 10.10, DOE/CBFO 15-3545, and protocols associated with assessments), and ensure that training and briefings are documented in LCO-QP2-3, Attachment 1, LANL-CO Qualification and Training Record.
- B. Ensure that the selected LANL-CO review team members have skills and qualifications commensurate to assigned review areas in compliance with LCO-QP2-3.
- C. Consistent with NQA-1 requirements, ensure that selected review personnel are independent of the functional areas being reviewed (i.e., not directly responsible for performance of the activities that will be reviewed).

5.1.6 CBFO Technical Review Team Leader

Using Attachment II, External Generator Site Participant Skills Guide, evaluate requests for external generator site participation and submit to the CBFO OPM NTP AM for concurrence.

5.1.7 CBFO OPM NTP AM

- A. Approve external generator site team member participation.
- B. Provide concurrence for LANL-CO team members.

5.1.8 LANL-CO Technical Review Team Leader

- A. Arrange for conference calls with the site as necessary. Determine appropriate participants and ensure participation. Items to discuss include:
- Status of document collection and status of any ongoing comments/questions regarding the LOIs
 - Schedule
 - Status of site logistical support such as training, badging, safety requirements, office space, and hotel accommodations
 - Identification of team members and specific areas that they will be reviewing
- B. Ensure CBFO technical review team leader and review team members have access to documents transmitted by the site.

5.1.9 Review Team Members

- A. Review relevant assessments provided by the site to determine if those assessments meet or are useful in meeting the scope of the technical review.
- B. Review site-specific documents.
- C. If necessary, notify the LANL-CO technical review team leader of additional documentation needed prior to the on-site technical review.

5.1.10 LANL-CO Technical Review Team Leader

- A. Request additional documentation from the generator site point-of-contact.
- B. Provide the additional documentation to the review team.

5.1.11 Review Team Members

- A. Review the additional site documentation and finalize the technical review checklists for the area assigned.
- B. Draft checklist questions that address the LOIs identified in DOE/CBFO 15-3545, *Technical Review Program Plan*.
- C. Submit the checklist to the LANL-CO technical review team leader.

5.1.12 LANL-CO Technical Review Team Leader

- A. Review the checklists to ensure the technical review scope will be met.
- B. If revisions to the checklist are necessary, return the checklist to the review team member for revision.

5.1.13 Review Team Members

Revise the checklist as necessary and return to the LANL-CO technical review team leader.

5.1.14 LANL-CO Technical Review Team Leader

- A. Approve the checklists.
- B. Submit the checklists to the CBFO technical review team leader.

5.1.15 CBFO Technical Review Team Leader

Review and approve checklist.

5.1.16 LANL-CO Technical Review Team Leader

Forward completed checklists to the site.

5.2 Conduct Technical Review

5.2.1 CBFO Technical Review Team Leader

Conduct an in-brief meeting at the site to include:

- Purpose and scope of the technical review
- Introduction and roles of the team members
- Protocols for interactions and reporting
- Opportunity for site participants to address the team

5.2.2 Review Team Members

- A. Conduct the technical review using the checklists. Additional questions may be asked and documented as necessary. Additional documentation may be requested as necessary.
- B. Conduct observations of work activities as necessary. Video of actual work may also be used if the CBFO technical review team leader agrees that it is appropriate to the scope of the technical review.
- C. Conduct interviews with the generator site workers and managers.
- D. Provide the LANL-CO technical review team leader with a daily summary of the review results.
- E. Participate in the daily team caucus.

5.2.3 CBFO Technical Review Team Leader

Once the on-site portion of the technical review is complete, conduct an out-brief meeting with the site to communicate any issues identified during the on-site technical review.

5.3 Technical Review Reporting

5.3.1 Review Team Members

- A. Document the results of the technical review on the assigned checklist.
- B. Document issues identified during the technical review and provide to the LANL-CO technical review team leader.
- C. Provide completed checklists and detailed narrative (for inclusion in the technical review report) to the LANL-CO technical review team leader.
- D. If any additional concerns are identified, immediately notify the LANL-CO technical review team leader.

5.3.2 LANL-CO Technical Review Team Leader

- A. If a team member identifies any new concerns, immediately notify the CBFO technical review team leader.
- B. If a team member identifies data gaps, the LANL-CO technical review team leader will work with the CBFO technical review team leader to resolve the data gap issue by contacting the site for additional information.
- C. Review the narratives and checklists and provide comments, if necessary.

- D. Using the review team's narratives and checklists, prepare the technical review report using Attachment I, Example Format of Review Report as a template.
- E. Provide the draft technical review report to the CBFO technical review team leader for concurrence.

5.3.3 CBFO Technical Review Team Leader

Review draft report and provide approval for the report to be prepared for generator site factual accuracy check.

5.3.4 LANL-CO Technical Review Team Leader

- A. Prepare final report to be transmitted to site for factual accuracy.
- B. Provide report to CBFO Technical Review Team Leader for transmittal to the site.

5.3.5 CBFO Technical Review Team Leader

Submit the draft report to the site point-of-contact for a factual accuracy review.

5.3.6 LANL-CO Technical Review Team Leader

- A. Once the site has performed the factual accuracy review and has responded with comments, complete the technical review report.
- B. Submit the report to the CBFO technical review team leader.
- C. Submit any additional concerns to the CBFO technical review team leader.

5.3.7 CBFO Technical Review Team Leader

- A. If any additional concerns are reported by the LANL-CO technical review team leader, notify the site.
- B. Review report, and ensure the report is reviewed at the appropriate levels within CBFO.
- C. Document any concerns or issues in the CBFO ICE system.
- D. Inform the CBFO QA manager of documented issues or concerns for the purposes of scoping for the next generator site certification audit.
- E. Provide comments to the LANL-CO technical review team leader for resolution.

5.3.8 LANL-CO Technical Review Team Leader

- A. Resolve comments with the CBFO technical review team leader.
- B. Finalize report and provide to the CBFO technical review team leader.

5.3.9 CBFO Technical Review Team Leader

- A. Arrange a briefing for the CBFO Manager, OPM NTP AM, TSTD Director, LANL-CO technical review team leader, and the generator site DOE Manager (if applicable).
- B. Submit the report to the CBFO Manager for signature.

5.3.10 CBFO Manager

Sign the report and transmit it to the site.

5.4 Technical Review Follow-Up

5.4.1 CBFO Technical Review Team Leader

- A. Contact the site periodically to track the site's progress on issue resolution.
- B. Document the completion or lack of progress on issue resolution in the ICE system.
- C. Report the final results of issue resolution to the CBFO Manager and the TRU Waste Corporate Board as directed by the CBFO Manager.

6.0 RECORDS

- 6.1 Records generated by this procedure are QA records and will be handled in compliance with requirements identified in current CBFO records management procedures.
- 6.2 Records packages shall contain the final site technical review report.
- 6.3 Training and qualification records shall be maintained by the LANL-CO office in accordance with approved procedures.

7.0 ATTACHMENTS

Attachment I. Example Technical Review Report Format

Attachment II. External Generator Site Participant Skills Guide

Example Technical Review Report Format

- 1.0 Executive Summary
 - 2.0 Technical Review Scope/Activities Reviewed
 - 3.0 Identification of Team Members
 - 4.0 Personnel Contacted/Interviewed
 - 5.0 Documents Reviewed (may be included as an attachment)
 - 6.0 Activities/Work Performance Observed
 - 7.0 Technical Review Process and Criteria
 - 8.0 Conclusions/Results of Review/Issues Remaining to be Resolved
- Attachment 1 References

External Generator Site Participant Skills Guide

Education and Experience

Any prospective external generator site technical review team participants should be selected based on these suggested guidelines.

The CBFO technical review team leader shall review the education and experience of the suggested external generator site technical review team participant and make recommendations to the CBFO OPM NTP AM regarding possible team participation.

Education/Training

Education/training shall be commensurate with review area to be assigned.

Experience

In general, experience in one of the general areas described in DOE/CBFO 15-3545, *Technical Review Program Plan*, would be beneficial when acting as a participant.

The five general areas of review include:

- Work Execution
- Treatment, Remediation, Packaging and Repackaging Processes and Procedures
- Records/Procurement/Training
- Configuration Management and Change Control
- Federal and Contractor Oversight

Examples of education and/or experience that would be considered advantageous include:

- Engineering
- Chemistry
- Nuclear Quality Assurance program experience
- Nuclear operations experience
- Glovebox nuclear operations experience
- Hazardous waste operations experience
- Hands-on work in manufacturing, construction, operations, laboratory operations, waste packaging, nuclear materials packaging, TRU Waste Packaging, or maintenance

ATTACHMENT 45
CARLSBAD FIELD OFFICE (CBFO) MEMORANDUM TO THE LANL
CARLSBAD DIFFICULT WASTE TEAM DEFINING THEIR ROLE

2 PAGES



Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221

OCT - 8 2015

Dr. Ned Z. Elkins, Manager
Los Alamos National Laboratories
Carlsbad Operations
115 N. Main
Carlsbad, NM 88220

Subject: Role of the Los Alamos National Laboratory Carlsbad Office Difficult Waste Team

Dear Dr. Elkins,

The purpose of this letter is to document the role of the Difficult Waste Team. The Difficult Waste team provides support to the CBFO National TRU Program (NTP) through the Los Alamos National Laboratory Carlsbad Office (LANL-CO). As the manager of LANL-CO and of the Difficult Waste Team, CBFO has provided you a Work Authorization document defining your offices roles, including the roles of the Difficult Waste Team. As stated in the Work Authorization document, the "Difficult Waste" section includes the following:

Provide WIPP and the CBFO NTP with the technical expertise to solve challenging waste issues in the packaging, certification, transportation, and emplacement of defense TRU waste. Provide logistics planning for the packaging, certification, and transportation of challenging waste streams for integration with the WIPP recovery schedule. Develop efficient disposition options for surplus plutonium from the National Nuclear Security Administration (NNSA) nuclear weapons complex reconfiguration. Technically evaluate new or proposed waste streams for treatment and final disposal at WIPP. Provide team members as needed to assist the CBFO Corrective Action Plan Manager in the development and tracking of corrective actions to address judgments of need from the DOE accident investigations for the Salt Haul Truck Fire and the Radiological Release Event at WIPP. Support development of new TRU packaging instructions to account for HWFP modifications and support CBFO oversight of waste packaging, repackaging, and remediation activities at the generator sites. Provide resources to directly support the DOE Accident Investigation Board. Provide technical resources, through CBFO, to assist in the identification and stabilization planning for nitrate salt containing wastes stored throughout the DOE complex and Waste Control Specialists (WCS). Provide a review of procedure and program documents supporting restart at the WIPP site as requested by CBFO. Provide two team members to the Disposal Operations Enhancement Integrated Project Management team.

Milestones and Deliverables include, but are not limited to:

- Support to the Accident Investigation Board for the Radiological Release Event at WIPP.
- Support to the CBFO Corrective Action Plan Manager with development and tracking of corrective actions.

- Organize and facilitate workshops at generator sites as requested by CBFO; work directly with generator sites to ensure waste streams identified meet requirements for safe and compliant handling, transportation and emplacement.
- Provide support to oversight of WIPP infrastructure development, as requested by CBFO.
- Update CH Packaging Instructions to account for HWFP modifications and support CBFO oversight activities.
- Finalize analysis tools for evaluating site inventories for efficient packaging, certification, and transportation of defense TRU waste for logistics planning.
- Provide support to the CBFO customer in their initiative to pursue activities that will facilitate the disposition of classified waste.

As technical support for CBFO as described above, the Difficult Waste Team's role is to inform CBFO, provide solutions and recommendations to CBFO, and assist where needed. This does not include providing any specific instructions or guidance directly to any TRU waste management entities.

If you have any questions concerning this letter, please contact me at (575) 234-7313.

Sincerely,



J.R Stroble, Director
TRU Sites and Transportation Division

cc:

A. Stone, CBFO	*ED
G. Hellstrom, CBFO	ED
R. R. Chavez, RES	ED
D. Snow, CBFO	ED

*ED denotes electronic distribution

ATTACHMENT 46
CCP-PO-012, REV 16, CCP/LOS ALAMOS NATIONAL LABORATORY
(LANL) INTERFACE DOCUMENT AND OTHER INTERFACE
DOCUMENTS

269 PAGES

CCP-PO-012

Revision 16

CCP/Los Alamos National Laboratory (LANL) Interface Document

EFFECTIVE DATE: 02/26/2016

Mike Ramirez

PRINTED NAME

APPROVED FOR USE

RECORD OF REVISION

Revision Number	Date Approved	Description of Revision
0	10/21/2003	Initial Issue.
1	12/16/2003	Revised the Scope of the document. Updated Section 2.1 References. Updated Section 3.0, steps 3.7 VPM responsibilities and inserted step 3.10 LANL SPQAO responsibilities. Corrected referenced section in step 4.14.4. Updated Figure 1.
2	04/20/2004	Interface Document updated to reflect changes in work scope and joint organizational responsibilities.
3	04/26/2004	Incorporated CBFO Adequacy Review Comment resolutions to Section 1.0 and inserted step 4.17.
4	03/31/2006	Revised to make organizational changes, changes to be consistent with Statement of Work (SOW) clarifications, and changes to reflect coordination details learned during Fiscal Year (FY) 2004. Revised based on the Implementation Plan for CCP Characterization Operations Improvements.
5	11/16/2006	Revised to incorporate controls in the Central Characterization Project (CCP) Basis for Interim Operation (BIO) for the Waste Isolation Pilot Plant (WIPP) Mobile Characterization Units and to provide notifications between the Host site, CCP, and WIPP site. Revised to implement the Waste Isolation Pilot Plant Hazardous Waste Facility Permit requirements resulting from the Section 311/Remote-Handled (RH) Permit Modification Request (PMR).
6	08/06/2007	Revised to clarify Authorization Basis and Configuration Management requirements and editorial changes.
7	05/08/2008	Revised to reflect corrective actions identified during accident investigation and follow-up safety assessments.
8	12/29/2010	Minor revision to update references to the <i>Waste Isolation Pilot Plant Hazardous Waste Facility Permit</i> .
9	01/04/2012	Revised to incorporate box line operating procedures, CCP-TP-059, <i>CCP Operating the Super High Efficiency Neutron Counter (SuperHENC) Using NDA 2000</i> , and CCP-TP-198, <i>CCP HE-RTR Operating Procedure</i> , and make any editorial changes necessary.
10	07/09/2012	Procedure is being revised to correctly describe the process for receiving Central Procurement Project supplied commodities at Los Alamos National Laboratory.

RECORD OF REVISION (Continued)

Revision Number	Date Approved	Description of Revision
11	10/01/2012	Revised to incorporate Nuclear Waste Partnership (NWP) transition changes.
12	11/05/2012	In response to CAR-LANL-0003-12, revised to clarify roles associated with providing measuring and testing equipment (M&TE) Certificates of Calibration to Central Characterization Program (CCP).
13	06/25/2013	Incorporate the Gas Generation Testing (GGT) process, In Situ Object Counting Systems (ISOCS) process, and editorial changes. Revised to implement the Permit Modification Request Class 2 approved by New Mexico Environment Department (NMED) dated March 13, 2013.
14	10/30/2013	Incorporate CCP-TP-068, <i>CCP Standardized Container Management</i> for container management and incorporate additional responsibility titles for operations at Technical Area (TA)-55.
15	01/23/2014	Revised to provide the allowance to use either CCP-TP-120, <i>CCP Container Management</i> or CCP-TP-068, <i>CCP Standardized Container Management</i> , for container management.
16	02/26/2016	Revised format and content to better align with standardized Central Characterization Program (CCP) interface document format and to address enhancements pertaining to the Acceptable Knowledge (AK) process, and to realign responsibilities based on Host site reorganization.

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1.0 PURPOSE

Through the Performance Management Plan (PMP) of July 2002, the U.S. Department of Energy (DOE) Carlsbad Field Office (CBFO) designated the Central Characterization Program (CCP) to provide assistance to the waste processing portion of the Transuranic (TRU) Program at the Los Alamos National Laboratory (LANL) site. This document establishes the CCP/LANL interfaces between CCP and Los Alamos National Security, LLC (LANS) necessary to implement the requirements of the TRU Waste Program. All activities discussed in this document apply to the TRU Waste Program whether identified, conducted or implemented by CCP or LANS personnel.

1.1 Scope

LANS is responsible to provide the infrastructure and associated programs necessary to support all activities described in this Interface Document. CCP will assist LANS by (a) providing a Waste Isolation Pilot Plant (WIPP)-certified program for the characterization, certification, and shipment of LANL TRU wastes, (b) training and qualifying personnel so that they can perform activities under the CCP WIPP-certified program in compliance with DOE Orders relevant to nuclear facilities, (c) providing services, personnel, and equipment to augment LANS required activities.

These services will be performed with CCP and/or Host site equipment operated with appropriate DOE/CBFO certified procedures. CCP may train Host site personnel to perform CCP characterization activities as needed and agreed to by the Host site.

Host site maintains ownership of the waste and responsibility for its disposal. This responsibility includes additional chemical sampling and analysis deemed necessary by the WIPP Co-Permittees.

The Host site has primary responsibility for assuring that requirements for safety (including Radiological Control, Emergency Management, Industrial Hygiene and Safety), security, safety basis, environmental protection, compliance, and other areas are met for CCP activities.

CCP will work under LANS' approved Environment, Safety, and Health (ES&H) Program. On-site CCP personnel will be trained to and comply with LANL hazardous and solid waste regulatory requirements. LANS is responsible for supervising and overseeing the implementation of LANS' ES&H Program, including compliance with Federal, State, and Local regulations protecting workers, the environment, waste management/disposal, and chemical usage. LANS has responsibility for taking such action as is deemed necessary to ensure compliance with Resource, Conservation and Recovery Act (RCRA), and Toxic Substances Control Act (TSCA), DOE Orders and LANS' requirements related to environmental compliance and waste management within LANL.

CCP has responsibility for the safety of CCP employees, CCP subcontractors, and its lower-tier subcontractors as defined in this document. LANS is responsible for reporting conditions or concerns that may have safety, health, quality assurance (QA), security, operational or environmental implications; and therefore, LANS will provide oversight to this scope as set forth in Section 6.0. TRU Program activities, whether performed by CCP personnel or CCP activities performed by LANS personnel at LANL will be under the control of the CCP LANL Project Manager/Designee and Responsible Division Leader/Designee except for the Nuclear Waste Partnership (NWP) Assurance Programs Manager (See Figure 2, Nuclear Waste Partnership – LANL), and CCP activities at LANL will be directly under the control of the CCP LANL Project Manager/Designee. In turn, the CCP LANL Project Manager/Designee will report through the specific Responsible Division Leader/Designee for the program/project being supported.

This document applies to all personnel identified on the detailed LANS/CCP organization charts shown in Figures 2 through Figure 5.

This document addresses responsibilities associated with TRU waste characterization and certification as well as other characterization support provided to LANL by CCP. This document also defines interface requirements for the following areas:

- Initial Setup for Operations
- Routine Operations
- Training
- Container Management
- Deficiencies
- Visual Examination (VE) and Prohibited Item Disposition (PID)
- Filter Inspection/Filter Change out
- Real-Time Radiography
- Nondestructive Assay (NDA) (certified and non-TRU waste data)
- Source Control
- Flammable Gas Analysis (FGA)
- Acceptable Knowledge (AK)
- Off-Site Source Recovery Program (OSRP)
- Project Office Certification Activities
- Transportation
- Measurement and Test Equipment (M&TE)
- Procedures
- Documents/Records
- Procurement
- Oversight
- QA
- Price-Anderson Amendments Act (PAAA)
- 10 Code of Federal Regulations (CFR) Part 851, *Worker Safety and Health Program*
- Gas Generation Test (GGT)

2.0 REQUIREMENTS

2.1 This document implements the applicable requirements of the following:

- CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- CCP-PO-002, *CCP Transuranic Waste Certification Plan*
- CCP-PO-003, *CCP Transuranic Authorized Methods For Payload Control (CCP CH-TRAMPAC)*
- CCP-PO-005, *CCP Conduct of Operations*
- CCP-PO-026, *CCP Configuration Management*
- DOE/WIPP-02-3183, *CH Packaging Program Guidance*
- DOE/WIPP-06-3345, *Waste Isolation Pilot Plant Flammable Gas Analysis*
- DOE/WIPP-94-1012, *Quality Assurance Program Document*, Carlsbad New Mexico, U.S. DOE Carlsbad Field Office
- WP 13-1, *Nuclear Waste Partnership LLC, Quality Assurance Program Description*
- PD103, *Worker Safety and Health Program*
- P121, *Radiation Protection*

2.2 Acronyms and Key Definitions

Attachment 1, Acronyms and Key Definitions, lists acronyms and key definitions used in this Interface Document.

2.3 Criteria

The CCP Certified Program will be used to characterize, certify, and ship LANL's TRU waste to WIPP. The specific requirements documents to ensure compliance with the certified program are listed in Attachment 2, Reference Documents.

There are Host site documents used that are not part of the CCP Certified Program. These documents are listed in Attachment 3, LANS Host Site Required Documents.

3.0 RESPONSIBILITIES

CCP has primary responsibility for performing TRU waste characterization, certification, and transportation activities in accordance with governing requirements described herein. CCP services include compilation, reporting, and confirmation of acceptable knowledge (AK), nondestructive examination (NDE), which includes real-time radiography (RTR), and visual examination (VE), nondestructive assay (NDA), Flammable Gas Analysis (FGA) for transportation, data validation and verification, waste certification, WIPP Waste Information System/Waste Data System (WWIS/WDS) data entry, and transportation activities. Through the characterization activities performed, CCP provides support to LANL in demonstrating compliance with Policy P409, *LANL Waste Management*, and the *LANL Hazardous Waste Facility Permit*.

The Host site's responsibilities are limited to the CCP activities described herein being performed on their behalf and for performing TRU waste management activities in accordance with Host site/generator documents provided to CCP.

NOTE

The titles for LANL personnel delineated throughout the document are generic. Communications paths are depicted on Figure 1, CCP-LANL Communications Flow Chart.

3.1 CCP LANL Project Manager/Designee

- 3.1.1 Confirms that waste characterization activities are conducted at LANL per the Interface Document.
- 3.1.2 Provides primary oversight for project safety, and compliance of CCP personnel at LANL to CCP's certified program requirements.
- 3.1.3 Requests personnel and equipment from the Responsible Division Leader/Designee to support characterization, certification, and transportation, as required.
- 3.1.4 Provides support to the CCP Site Project Manager (SPM).
- 3.1.5 Receives documentation of required and completed LANL site-specific training.

- 3.1.6 Provides weekly production reports to the DOE/CBFO and LANS Responsible Division Leader/Designee.
- 3.1.7 Receives reports of LANS oversight activities from Facility Operations Director (FOD) and Responsible Division Leader/Designee and formally responds, as required.
- 3.1.8 Interfaces with DOE/CBFO through the CCP Project Office.
- 3.1.9 Requests special nuclear material sources from LANS Responsible Division Leader/Designee.
- 3.1.10 Ensures CCP personnel comply with LANS integrated work management, environmental, safety, and security requirements.
- 3.1.11 Ensures CCP procedures are approved by Host site.
- 3.1.12 Manage CCP support within agreed to funding and scope.
- 3.1.13 Function as the point of contact to coordinate CCP reviews of LANL procedures and waste processing plans by appropriate CCP SMEs. The review will analyze impacts on the CCP characterization process as well as requirements specified in DOE/WIPP 02-3122, *Transuranic Waste Acceptance Criteria For The Waste Isolation Pilot Plant (WIPP-WAC)*; *Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC)*; *Waste Isolation Pilot Plant Hazardous Waste Facility Permit, Waste Analysis Plan (WIPP-WAP)*.
- 3.1.14 Participate on the Waste Processing Integrated Process Control Teams (IPCTs) for waste that will be shipped to WIPP.
- 3.1.15 Interface with the Waste Characterization and Processing Review Board.
- 3.1.16 Ensure that characterization data generated by CCP in the process of waste characterization including RTR, VE, NDA and FGA is available to the Responsible Division Leader/Designee.

3.2 LANS Program Manager

3.2.1 Negotiate with CCP Project Manager to establish scope of work, needed resources and associated funding required to complete the agreed to scope.

3.2.2 Ensure agreed to funding is provided to CCP to support onsite activities in support of LANS.

3.3 Responsible Division Leader/Designee

3.3.1 Formally designate LANS personnel responsible for performing key responsibilities and communicate Designees to CCP LANL Project Manager.

3.3.2 Ensures LANS completes performance measures/metrics as established by appropriate local DOE office.

3.3.3 Functions as the point of contact with CCP LANL Project Manager for coordination and review of CCP procedures, plans, waste stream profile forms, AK Summary Reports, CCP Interface Waste Management Document Lists (IWMDL) and CCP Acceptable Knowledge Assessments (AKAs) and configuration management documents.

3.3.4 Ensures cognizant Host site and generator Point of Contacts/Subject Matter Experts (SMEs) are identified and available as necessary to support the review of CCP documents defined in step 4.24.5.

3.3.5 Coordinates review, provides comments, and approves comment resolutions on documents listed in Section 4.24.5. This includes facilitating generator document review and comment resolution as necessary. The review and comment resolution will be documented in accordance with CCP-QP-010, *CCP Document Preparation, Approval, and Control*.

3.3.6 Ensures CCP personnel have access to facilities to observe operations and interview personnel associated with generation, packaging, repackaging, or treatment of TRU waste.

3.3.7 Interfaces with DOE/CBFO through the appropriate local DOE office.

- 3.3.8 Coordinates all LANS activities in support of TRU Programs working with CCP LANL Project Manager/Designee.
- 3.3.9 Manages the control, and tracking of containers through the CCP characterization process utilizing the CCP SPM-designated container selection list (AK Tracking Spreadsheet).
- 3.3.10 Ensures that applicable container tracking information is maintained and kept current as required to LANL site requirements.
- 3.3.11 Generates and submits regular, periodic production reports.
- 3.3.12 Ensures Unreviewed Safety Question Determinations (USQD) are completed to ensure that CCP operations and activities are performed in accordance with the applicable Safety Basis Documents.
- 3.3.13 Ensures modifications to CCP procedures, equipment, and facilities undergo Host site review and USQD.
- 3.3.14 Responsible for ensuring project compliance with LANS Waste Management and Environmental Compliance requirements.
- 3.3.15 Ensures that containers are processed in conjunction with the CCP SPM or CCP Vendor Project Manager (VPM).
- 3.3.16 Ensures Material at Risk (MAR) inventory limits established by the Documented Safety Analysis (DSA) for each facility, are not exceeded.
- 3.3.17 Approves CCP health and safety-specific documents, including Integrated Work Documents (IWDs), as the Responsible Line Manager (RLM).
- 3.3.18 Ensures Facility Service Requests submitted by CCP are completed within a time frame agreed to by the LANL CCP Project Manager/Designee.

- 3.3.19 Provides temperature-controlled environment for staging waste containers prior to RTR when temperatures are below freezing.
- 3.3.20 Provides Lockout/Tagout (LO/TO) support for work performed on the CCP equipment.
- 3.3.21 Provides work control resources for corrective or preventive maintenance on LANS-owned utilities or equipment or on CCP-owned equipment, as requested.
- 3.3.22 Ensures facility-specific training requirements for CCP operations at LANL are defined, training plans are established and implemented, and information on training status is provided to CCP Training.
- 3.3.23 Ensures notification is made to CCP of any new training requirements.
- 3.3.24 Coordinates Radiological Control Technician support and dosimetry for characterization and transportation operations.
- 3.3.25 Coordinates Industrial Hygiene support for characterization and transportation operations.
- 3.3.26 Participates in Readiness Assessments or surveillances, as required.
- 3.3.27 LANS personnel perform waste handling operations in support of CCP as assigned by LANS supervision.
- 3.3.28 Provides Source Custodian support to maintain nuclear material source control in accordance with LANS requirements.
- 3.3.29 Designates LANL Cognizant Host site/Generator Personnel (CP) to interact with the CCP Acceptable Knowledge Expert (AKE) and assist the AKE with AK collection.
- 3.3.30 Ensures that AK Summary Reports, AKA, and Waste Stream Profile Forms are routed to the Waste Management Division Leader for approval.
- 3.3.31 Distributes results of the AKA to designated CPs for review and comment.
- 3.3.32 Concurs with final AKA in writing.

3.3.33 Works with the Waste Management Coordinator to comply with Policy P409 and update the operating record for waste activities performed by CCP.

3.3.34 Provides Waste Management Division Leader/Designee with the results of Acceptable Knowledge Assessments (AKA), surveillances and other assessments for the determination of accurate, sufficient, and up-to-date waste characterization.

3.3.35 Provides leadership and direction to ensure that LANL waste is compliantly characterized, managed, stored, and transported.

3.3.36 Engages Waste Management Division Leader in the review and comment resolution of AK Summary Reports and CCP AKAs.

3.3.37 Ensures that characterization information collected by CCP including RTR, NDA, FGA, and VE gets captured in WCATs as required by Policy P409.

3.3.38 Provides documentation of surveillances and audits, applicable to CCP, to the CCP LANL Project Manager/Designee.

3.4 Facilities Operations Director (FOD)/Designee

3.4.1 Provides documentation of surveillances and audits, applicable to CCP, to the CCP LANL Project Manager/Designee.

3.4.2 Ensures that new and/or modifications to documents or equipment for work performed in support of TRU waste activities at nuclear facilities are approved prior to implementation.

3.4.3 Ensures configuration management of LANS-owned equipment is maintained.

[A] Ensures that adequate information is provided to CCP on LANS-owned equipment prior to acceptance and turnover of equipment to CCP.

3.4.4 Ensures CCP/LANS personnel comply with LANS integrated work management, environmental, safety, and security requirements through document reviews, emergency drills, monitoring, surveillances and audits.

3.4.5 Ensures new CCP activities follow the LANL readiness review requirements.

3.4.6 Ensures Technical Safety Requirements (TSR) surveillances are conducted as required.

3.4.7 Ensures Fire Protection and other facility surveillances, are performed when required.

3.4.8 Releases approved CCP Integrated Work Documents (IWDs).

3.5 CCP Site Project Manager (SPM)

3.5.1 Functions as CCP's primary interface and point-of-contact between CCP and LANS for certification activities (e.g., data management).

3.5.2 Ensures the AK Summary Reports and container lists for LANL waste streams are prepared, approved, and issued.

3.5.3 Ensures the preparation and approval of waste stream profile forms (WSPFs), as required.

3.5.4 Provides evidence to the CCP LANL Project Manager/Designee and Responsible Division Leader/Designee of the DOE/CBFO Performance Demonstration Program (PDP) participation and successful completion for each operating system.

3.5.5 Responsible for project level verification and validation of batch data reports (BDRs).

3.5.6 Provides support to the CCP LANL Project Manager/Designee.

3.5.7 Ensures that software used by CCP at LANL is controlled in accordance with CCP-QP-022, *CCP Software Quality Assurance Plan*. LANL retains ownership and licenses of LANL developed/procured software.

3.5.8 Confirms that in-process documents are transmitted to the CCP Project Office as soon as practicable.

3.5.9 Provides Responsible Division Leader/Designee with the results of Acceptable Knowledge Assessments (AKA).

3.5.10 Coordinate presentation of AK briefings to CCP characterization personnel POCs/SMEs and cognizant Host site/generator SMEs and CPs.

- 3.5.11 Provide AKE and Responsible Division Leader/Designee quarterly notifications that the IWMDL are current.
- 3.5.12 Transmit the AKA to the Responsible Division Leader/Designee for distribution to SME to verify accuracy and completeness and obtain concurrence signature from the Responsible Division Leader/Designee.
- 3.6 Acceptable Knowledge Expert (AKE)
 - 3.6.1 Collect, compile, and review AK documentation in accordance with CCP-TP-005, *CCP Acceptable Knowledge Documentation*.
 - 3.6.2 Ensures CCP has obtained necessary container information prior to characterization.
 - 3.6.3 Interacts directly with the Responsible Division Leader/Designee to ensure accurate, sufficient, and up-to-date waste characterization information is provided.
 - 3.6.4 Work in conjunction with Responsible Division Leader/Designee to develop an IWMDL for each waste stream.
 - 3.6.5 Work with cognizant Host site/generator personnel to resolve comments and questions.
 - 3.6.6 Submit IWMDL and associated quarterly Responsible Division Leader/Designee notification to the SPM to submit to records.
 - 3.6.7 Performs an AKA for each waste stream.
- 3.7 NWP QA Engineer/Designee
 - 3.7.1 Reports to the NWP QA Assurance Programs Manager to maintain functional authority and independence from cost and schedule considerations.
 - 3.7.2 Functions as CCP's primary interface and point-of-contact for QA issues between the CCP and LANS.
 - 3.7.3 Validates Nonconformance Reports (NCRs).
 - 3.7.4 Provides semi-annual trending summary reports to the CCP SPM.

- 3.7.5 Ensures surveillances of waste characterization activities at LANL are performed on a periodic basis and surveillance reports are provided to the CCP SPM, the CCP LANL Project Manager/Designee, and the Responsible Division Leader/Designee.
- 3.7.6 Performs receipt inspection of procured items in accordance with CCP and Host site requirements.
- 3.7.7 Provides assistance in generation, disposition, and closure of NCRs and WIPP Forms.
- 3.7.8 Coordinates with the CCP LANL Project Manager/Designee for any potential Noncompliance Tracking System-Reportable PAAA issues or any occurrence reports resulting from activities under the CCP Certified Program.
- 3.8 CCP Vendor Project Manager (VPM)/Designee
 - 3.8.1 Obtains Host site management daily release/approval prior to performing CCP operations.
 - 3.8.2 Responsible for safety and health of CCP personnel at LANL.
 - 3.8.3 Monitors the List of Qualified Individuals (LOQI) daily to confirm that only qualified personnel perform waste characterization and transportation activities.
 - 3.8.4 Controls access of CCP personnel including its subcontractors to the field. Request site access for visitors and provide full-time escorts.
 - 3.8.5 Functions as CCP's primary interface and point-of-contact between CCP and LANL for characterization activities (operations).
 - 3.8.6 Supports training and briefing of personnel in regards to procedural changes by scheduling training sessions, as required.
 - 3.8.7 Coordinates the daily operations of CCP operations personnel, and its subcontractors.
 - 3.8.8 Works in conjunction with Responsible Division Leader/Designee to manage the control, movement, and tracking of waste containers through the CCP characterization process.

3.8.9 Coordinates with the Responsible Division Leader/Designee, and CCP LANL Project Manager/Designee for any potential Noncompliance Tracking System-Reportable PAAA issues or any occurrence reports resulting from activities under the CCP Certified Program.

3.8.10 Ensures operability and availability of CCP-provided characterization equipment.

3.8.11 Ensures that CCP-provided equipment is maintained under a CCP approved Configuration Management Program.

3.8.12 Ensures that new additions to and/or modifications made to CCP-provided facilities and/or equipment are submitted to Responsible Division Leader/Designee as soon as practicable and approvals are received prior to implementation.

3.8.13 Ensures applicable manufacturers Safety Data Sheets (SDSs) for products brought to the facility by the CCP are provided to the Operations Center.

3.9 LANL Environment, Safety, and Health (ES&H) Support

3.9.1 Responsible for workplace monitoring, as applicable to the hazards associated with the work and workplace.

3.9.2 Responsible for safety and health compliance reviews, for reviewing and approving IWDs, and for assuring compliance with the LANL safety and health requirements applicable to the CCP operations at LANL.

3.9.3 Responsible for supporting compliance with the LANL Hazardous Waste Facility permit, and all other environmental compliance requirements.

3.9.4 Responsible for supporting compliance with Waste Management Division requirements. And providing support for environmental compliance reviews and audits as a Responsible Division Leader resource.

3.10 LANS QPA Division Leader/Designee

- 3.10.1 Reports to the Quality & Performance Assurance Division Leader to maintain functional authority and independence from cost and scheduled considerations.
- 3.10.2 Functions as LANLs primary interface and point-of-contact for QA issues between LANS and CCP.
- 3.10.3 Provides copies of documentation of assessment activities (including audits and surveillances) to the CCP LANL Project Manager/Designee.
- 3.10.4 Provide oversight of activities performed in support of this interface agreement using LANS programs and procedures.

3.11 CCP Operations

- 3.11.1 Performs system start-up and calibration of characterization equipment at the Host site.
- 3.11.2 Operates CCP equipment in accordance with approved procedures including CCP-PO-005, *CCP Conduct of Operations*.
- 3.11.3 Performs safety walk-downs prior to operation.
- 3.11.4 Demonstrates CCP operations during DOE/CBFO certification/recertification audits.

3.12 Waste Certification Official (WCO)

- 3.12.1 Obtains approved Waste Stream Profile Form (WSPF) for containers to be certified.
- 3.12.2 Will document and certify that all TRU waste payload containers meet the requirements of the WAC, and submit the data to the WWIS/WDS for approval.

3.13 Transportation Certification Official (TCO)

- 3.13.1 Ensures CCP Transportation personnel are trained and qualified to perform WIPP-compliant CH and RH TRU waste packaging and loading operations at the Host site prior to starting work activities and are listed on the current LOQI.

- 3.13.2 Provides oversight of CCP Transportation personnel for payload and Overpack assembly and loading.
- 3.13.3 Builds payloads from certified containers and Overpacks provided by WCOs in WWIS/WDS.
- 3.13.4 Certifies payloads for transportation to and disposal at WIPP.
- 3.13.5 Builds shipments from approved payloads in WWIS/WDS.

4.0 INTERFACE

4.1 Initial Setup for Operations

4.1.1 The initial setup and startup of CCP characterization operations have been completed. In addition, the initial certification audit is complete and operations have commenced.

4.1.2 The Host site will provide infrastructure support as additional pieces of equipment or operations are added to the LANL scope.

4.2 Routine Operations

NOTE

Working shifts will be established by the CCP VPM and approved by the Responsible Division Leader/Designee prior to implementation.

4.2.1 The Host site has the overall responsibility for the management of the nuclear materials and operations of the nuclear facilities.

4.2.2 Work performed by CCP personnel (including subcontractors) will be in compliance with Host site and CCP requirements.

4.2.3 CCP personnel will STOP WORK (or Pause), as appropriate and will notify the FOD/Designee and the CCP VPM in the event of a safety concern or suspected environmental impact concern.

4.3 Work Standards

4.3.1 CCP VPM or Designee will perform the following activities to support daily operations:

[A] Ensure that work is performed in accordance with LANL requirements (e.g., LO/TO, Work Control, IWD) by trained and qualified personnel in accordance with approved work documents.

[B] In the event of abnormal condition or occurrence, support an investigation, as required.

[C] Accept custody of waste containers delivered by LANL personnel and control approved waste characterization activities.

- [D] Disposition NCRs and WIPP Forms as required, and communicate progress to the CCP LANL Project Manager/Designee and Responsible Division Leader/Designee.
- [E] **IF** after Expert Analyst (EA) review, the NDA results indicate greater than 200 Fissile Gram Equivalent (FGE) (measured value plus two times the counting statistics) for a 55-gallon container, or greater than 325 FGE (measured value plus two times the counting statistics) for a standard waste boxes (SWB),
THEN notify the Operations Center and provide results.
- [F] Ensure that equipment calibration is performed on CCP operated equipment, in accordance with Section 4.23.
- [G] Attend pre-operations briefings performed for all on-site waste characterization personnel and attend the LANS Plan of the Day/Week briefings, as appropriate.
- [H] Ensure the safe operation and maintenance of all CCP instruments and equipment.
- [I] Ensure the safe operation of equipment by CCP personnel by performing periodic oversight.
- [J] Ensure that CCP-provided equipment is properly maintained.
- [K] Provide a copy of SDSs to the Operations Center, the CCP LANL Project Manager/Designee, Responsible Division Leader/Designee, and others as appropriate.
 - [K.1] When new chemicals are to be used, the SDS will be provided to FOD prior to bringing the chemicals on site to ensure that the Chemical Inventory requirements are updated.

4.3.2 Responsible Division Leader/Designee will ensure the following radiological control support is provided for CCP activities:

- [A] Maintain radiological postings.

- [B] Perform an initial and periodic radiation protection surveys on NDA and RTR equipment and provide an approved survey report to the NDA Team Leader or RTR Team Leader, and the VPM.
- [C] Perform radiation protection surveys and monitoring as necessary.
- [D] Provide thermoluminescent dosimeters (TLDs) for CCP personnel.
- [E] Provide calibrated and source checked survey instrumentation as required.
- [F] Issue and/or modify Radiation Work Permits (RWPs) to support CCP activities as needed.

4.3.3 CCP personnel will work under the LANL requirements for LO/TO.

4.3.4 CCP personnel will perform work in accordance with CCP-approved procedures for waste characterization and certification activities and LANS-approved work packages and procedures for non-waste characterization activities (e.g., equipment repairs). Both CCP-approved and LANS-approved processes will comply with LANL requirements.

4.3.5 CCP personnel will operate in accordance with CCP-PO-005, *CCP Conduct of Operations*.

4.3.6 CCP personnel with assistance from LANL Environment, Safety and Health (ES&H) personnel will develop IWDs or other applicable documents for all CCP activities performed at LANL in accordance with LANS policies and submit to the Responsible Division Leader/Designee for approval.

4.4 Training

4.4.1 CCP personnel or Host site personnel who perform work under CCP procedures will be trained and qualified to WIPP requirements in accordance with CCP-QP-002, *CCP Training and Qualification Plan* and/or CCP-QP-040, *Support Training*, as applicable.

4.4.2 CCP and Host site personnel assigned to field operations must complete the Host site-specific training. The Responsible Division Leader/Designee will ensure the Host site-specific training documentation is sent to CCP Training.

4.4.3 Both the CCP training and Host site-specific training must be completed prior to the individual being assigned to perform independent work at the Host site.

4.4.4 Administrative work, such as BDR reviews requiring no access to the characterization activities or processes at the Host site, may be completed by personnel who have not completed the required Host site-specific training. Personnel who have not completed Host site-specific training will not be allowed unescorted access to the characterization activities.

4.4.5 A LOQI will be monitored daily by the CCP VPM to confirm CCP personnel and Host site personnel assigned to CCP are qualified.

4.5 Employee Monitoring

4.5.1 CCP will participate in the LANL radiological monitoring program as required by the radiological work permit process governing work performed.

4.5.2 The CCP LANL Project Manager or CCP VPM will be notified if any bioassay sample provided by CCP personnel indicates that an uptake of material/waste may have occurred or if CCP personnel are required to resubmit bioassay samples as soon as is reasonably possible.

4.5.3 LANS Radiation Protection personnel will perform routine surveys and monitoring for contamination and radiation as specified in LANS policies or procedures. The CCP LANL Project Manager/Designee or CCP VPM and appropriate LANL management personnel will be notified immediately upon the discovery of any loose surface contamination on any CCP-operated characterization equipment. Access to copies of routine survey results will be made available to CCP upon request.

4.5.4 LANS will provide “upon request” the CCP LANL Project Manager/Designee or CCP VPM with the results of continuous or fixed air sample filter analysis as soon as the analysis is complete but not more than 21 days following the removal of the filter from the sampler head, in any monitored area routinely occupied by CCP personnel.

4.6 Container Management

4.6.1 LANS will provide waste to the characterization facilities, depending upon certification and characterization capabilities. All CH containers delivered for characterization will be approved by the CCP VPM as prescribed in CCP-TP-068, *CCP Standardized Container Management* or CCP-TP-120, *CCP Container Management*.

4.6.2 Responsible Division Leader/Designee is responsible for providing documented information to the CCP SPM/Designee on any modification to the container or contents of the container after the AK has been completed by CCP.

4.6.3 The CCP SPM/Designee will review the documented information for modified containers and will notify the Responsible Division Leader/Designee when the containers are approved for entrance into the characterization process.

4.6.4 LANS is responsible for movement of containers and implementing vehicle access controls, from characterization through shipment, including control of containers requiring remediation (prohibited items).

[A] Subcontractor support for container movement and management may be provided through CCP, provided personnel meet LANS training requirements.

[B] LANS and CCP will perform site container management in accordance with the applicable LANL and CCP procedures. This includes verification that the containers are included in the AK Tracking Spreadsheet for characterization by CCP and ensuring that the LANL operating record is kept up to date with container movements by LANS.

- 4.6.5 CCP is responsible for administratively tracking the containers throughout the CCP characterization processes. Personnel will perform container management in accordance with CCP-TP-068 or CCP-TP-120.
- 4.6.6 LANS will provide the necessary dose rate and surface contamination information to CCP to certify the containers for disposal (e.g., survey results). All containers will have a Health Physics Materials Survey tag attached to the container prior to movement to CCP for characterization.
- 4.6.7 If a nonconformance is identified with a container, during the characterization or certification process, the container will be controlled in accordance with CCP-QP-005, *CCP TRU Nonconforming Item Reporting and Control*.

4.7 Deficiencies

- 4.7.1 If either LANS or CCP personnel, identify a nonconformance condition associated with a waste container during the characterization or certification process, personnel will initiate an NCR in accordance with CCP-QP-005.
- 4.7.2 The CCP LANL Project Manager/Designee will notify the Responsible Division Leader/Designee of nonconformances by the distribution of NCRs. The Responsible Division Leader/Designee may request any supporting documentation needed by LANS.

NOTE

In some cases, LANS will perform the work required to resolve deficiencies identified in CCP NCRs and will initiate internal documentation as required by the LANL program. However, the CCP NCRs will remain open and CCP NCR Hold Tags will remain on the affected containers until resolution of the NCR condition has been confirmed by CCP under its program. At that point, CCP will close the NCRs and remove the NCR Tags.

- 4.7.3 If the nonconformance can **NOT** be resolved by CCP (e.g., certain prohibited items or non-certifiable container types), CCP will coordinate with the Responsible Division Leader/Designee to determine the actions to be taken.

- 4.7.4 CCP will notify the FOD, Responsible Division Leader/Designee, and the CCP LANL Project Manager/Designee immediately of occurrence reports or potential PAAA issues resulting from the CCP scope of work.
- 4.7.5 The NWP QA will confirm appropriate closure of deficiencies.
- 4.8 Visual Examination (VE), Repackaging, and Prohibited Item Disposition (PID)
 - 4.8.1 Glovebox operations will have oversight by CCP qualified VE Personnel, as required.
 - 4.8.2 The CCP training programs for VE and VE technique will include OJT training. Personnel performing VE are instructed in the waste generating processes, typical packaging configurations, and waste material parameters expected to be in each Waste Matrix Code at LANL.
 - 4.8.3 PID will be conducted on containers in accordance with approved Host site procedures with oversight by CCP VE trained personnel, as required.
- 4.9 Filter Inspection/Filter Changeout
 - 4.9.1 LANL/CCP personnel will inspect the filters on containers as part of the container acceptance and will document whether the filter is a WIPP-approved filter. This information will be transmitted to the CCP VPM.
 - 4.9.2 If filter change out is performed on containers that do not require repackaging, the operation will be documented and the information transmitted to the CCP VPM.
 - 4.9.3 LANL/CCP personnel also inspect and verify filter models on containers as part of the FGA sampling process.
- 4.10 Prescreen Real-Time Radiography (RTR)
 - 4.10.1 CCP personnel will perform prescreening for RTR to identify potentially certifiable containers that can be sent to RTR, as determined by LANL and agreed to by the CCP LANL Project Manager/Designee. This information will be documented and provided to the Responsible Division Leader/Designee.

4.10.2 Using funding provided by LANS, CCP will perform additional pre-screening as requested by LANS to support LANS waste characterization activities (e.g., low-level waste and mixed low-level waste).

4.11 Prescreen Nondestructive Assay (NDA)

4.11.1 CCP personnel will perform prescreening for NDA as determined by LANL and agreed to by the CCP LANL Project Manager/Designee. This information will be documented and provided to the Responsible Division Leader/Designee.

[A] Containers that are less than 100 nanocuries per gram (nCi/g) will be returned to the Host site for disposition. BDR information on these containers will be provided as part of the process of returning the container to LANL.

4.12 Real-Time Radiography (RTR)

4.12.1 RTR will be performed by personnel trained under the CCP Certified Program.

4.12.2 Containers found with prohibited items or conditions requiring remediation (e.g., unvented container liner, liquids not meeting permit requirements) will be flagged, an NCR initiated, and staged for remediation at a later date.

[A] RTR Operators will notify the Operations Center if containers are found to contain compressed gas cylinders.

4.12.3 If a container is found during RTR that is suspected to contain a classified shape, it will be segregated and handled in accordance with LANL procedures.

[A] The information generated during the RTR of the container will be subject to control of potentially classified information. This media will be redacted by LANS, as possible, to remove the potentially classified portion and the revised media will be returned to CCP to complete the associated BDR.

4.12.4 CCP RTR Operators may provide additional interpretation of scans to support other LANS repackaging activities and waste characterization/re-characterizations determined by LANS and agreed to by the CCP LANL Project Manager/Designee.

4.13 Nondestructive Assay (NDA)

4.13.1 NDA will be conducted using certified equipment with personnel trained under the CCP Certified Program.

4.13.2 **IF** assay results are greater than facility AB limits for Plutonium Equivalent Curies (PE-Ci),
THEN NDA personnel will immediately notify the Operations Center, the CCP LANL Project Manager/Designee, the CCP VPM, and the Responsible Division Leader/Designee.

4.13.3 **IF** assay results are greater than the following criticality spacing limitations,
THEN the EA will notify the Operations Center, the CCP LANL Project Manager/Designee and the CCP VPM.

- [A] Individual 55-gallon drums or Pipe Overpack Container (POC) of waste exceeding 200 FGE (measured value).
- [B] Containers found to exceed the calibration range of the NDA machine.
- [C] Individual SWBs, TDOPs or SLB2s of waste exceeding 325 FGE (measured value).
- [D] Criticality Control Overpacks (CCO) of waste exceeding 380 FGE (measured value).

4.13.4 If assay results indicate that a container exceeds the Waste Acceptance Criteria (WAC) limits for plutonium equivalent activity, criteria, CCP personnel will issue an NCR in accordance with CCP-QP-005.

4.13.5 For any containers that exceed the shipping limit for FGE, an NCR will be generated in accordance with CCP-QP-005 to return the containers to LANL for repackaging.

4.13.6 For any containers that are less than 100 nCi/g, an NCR will be generated in accordance with CCP-QP-005 to return the containers to LANS.

4.13.7 LANS will provide/refill the cylinder required for the liquid nitrogen for NDA.

4.14 Source Control

4.14.1 LANS will be responsible for NDA sources used for both calibration (reference sources) and for the DOE/CBFO PDP. Responsibilities include inventory control, storage, inspection and handling. Responsibilities include ensuring radiological control support associated with sources is provided, maintaining the Radioactive Materials Area (RMA) postings and periodic surveys, and performing a semi-annual leak check on the reference sources.

4.14.2 LANS will provide support for the participation in the NDA PDP. This support includes training PDP coordinators, preparation of the test matrix containers, delivery of the containers to the NDA equipment, and responsibility for PDP source control. LANS support will be coordinated by the Responsible Division Leader/Designee.

4.14.3 LANS, as custodian of the sources, will provide to CCP the necessary reference sources for calibration in accordance with CCP NDA calibration procedures.

4.15 Waste Sampling and Analysis Methods

4.15.1 If the WIPP Permittees determine that additional characterization is necessary using chemical sampling and analysis, the Permittees shall direct generator/storage site to provide the Permittees with the following documentation:

- Sampling and analysis plan
- U.S. Environmental Protection Agency (EPA) SW-846 test method(s), or functionally equivalent test method(s), to be used
- Identification of the laboratory(ies) that will be performing the test(s)

4.15.2 Upon the Permittees written approval of the sampling and analysis plan, the generator/storage site shall implement the sampling and analysis plan.

4.16 Gas Generation Testing (GGT)

4.16.1 CCP will perform GGT sampling and analysis using GGT canisters in accordance with CCP-TP-083, *CCP Gas Generation Testing*, and CCP-PO-016, *CCP Gas Generation Testing Quality Assurance Project Plan*.

4.17 Flammable Gas Analysis (FGA)

4.17.1 FGA is for transportation only and will be performed using approved DOE/WIPP procedures by personnel trained under the CCP Qualification Program. This includes OSRP containers, as required.

4.17.2 The Operations Center, the CCP LANL Project Manager/Designee, and the CCP VPM will be notified if after completion of the analysis, the containers exceed the facility designated limits.

4.18 Acceptable Knowledge (AK)

4.18.1 CCP records personnel in Carlsbad will maintain the auditable AK record necessary to support the AK Summary Report in accordance with CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*, and CCP-QP-008, *CCP Records Management*.

4.18.2 CCP AK personnel collect, compile, and review AK documentation in accordance with CCP-TP-005 and/or DOE/WIPP-02-3214, *Remote-Handled TRU Waste Characterization Program Implementation Plan* (WCPIP).

[A] Host site/generator personnel assist CCP AK personnel with AK collection.

[B] CCP AK personnel and host site/generator personnel will cooperate fully with each other in the sharing and exchange of any and all AK information that is collected for or incorporated into IWMDL or AK Summary Reports.

- [C] The Responsible Division Leader/Designee will provide assistance by coordinating potential interviewees for CCP. The Responsible Division Leader/Designee will ensure Competent Host Site/Generator Personnel (CP) are available to serve as an intermediary and an active listener to support effective generator questioning.

4.18.3 CCP AK personnel and Host site/generator personnel develop an IWMDL that includes facility processes, plans, and procedures, waste profile forms, and Waste Compliance and Tracking System records that control the following waste management activities as applicable:

- Waste generating activities
- Waste retrieval activities
- Waste packaging/repackaging
- Waste treatment/processing (e.g., neutralization, deactivation, and solidification/immobilization)
- Waste inspection, testing, and characterization
- Decontamination and Decommissioning operations
- Any other activity that changes the physical, chemical, or radiological properties of waste to be characterized by CCP

4.18.4 The AKE develops the new or revised IWMDL in accordance with CCP-TP-005 using the existing body of AK documentation.

- [A] The Responsible Division Leader/Designee ensures CP are assigned to review the new or revised IWMDL for accuracy and completeness and provide written comments as appropriate.
- [B] The AKE and CP resolve comments and questions.
- [C] CCP posts the new revised IWMDL on the CCP secure file transfer protocol (sftp) site.

NOTE

This note applies to step 4.18.5. The activities of step 4.18.5 may be initiated as necessary by the AKE for existing waste streams, new waste streams, or during AK revisions/updates.

4.18.5 AKA are performed in accordance with CCP-TP-005.

- [A] SPM provides Responsible Division Leader/Designee with the AKA results.
- [B] Responsible Division Leader/Designee distributes results of the AKA to designated CPs for review and comment.
- [C] AKE resolves comments with Responsible Division Leader/Designee and CPs.
- [D] Responsible Division Leader/Designee concurs with final AKA in writing.

4.18.6 CCP submits new or revised AK Summary Reports to the Responsible Division Leader/Designee for review and concurrence.

- [A] The Responsible Division Leader ensures CP review the AK Summary Report for accuracy and completeness providing comments in accordance with CCP-QP-010.

4.18.7 A Host site/generator CP attends a briefing on new or revised AK Summary Reports.

4.18.8 Responsible Division Leader/Designee notifies the SPM and AKE in writing of any new revised waste management activities that would necessitate a change to the IWMDL.

4.18.9 The SPM and AKE evaluate new or revised waste management activities and determine if revision to the IWMDL and/or AK Summary Report is needed.

4.18.10 The Host site will not provide any waste container to CCP for characterization until the AKE has received the latest version of the work document (including field changes, other immediate procedure changes, Timely Orders/Standing Order, Operator Aids, etc.) used to generate, package, and/or repackage the container.

[A] The work document(s) provided to the AKE will contain the following information at a minimum:

- Identification (including revision) of the work document(s) used to generate the container
- Type of activity (e.g., packaging/repackaging only, remediation, treatment)
- Amount (estimated) and type (if known) of liquids
- Type and quantity (estimated) of absorbents used
- Type and quantity (estimated) of neutralization agents used
- Any unexpected conditions or reactions encountered
- General description of waste items
- Packaging configuration (e.g., 55-gallon drum with 20 mil liner bag)
- Filter data including model and quantity used
- Parent container identification

4.18.11 The AKE will ensure they have obtained and reviewed the correct version of IWMDL documentation used to generate/manage a container before adding it to the AK Tracking Spread Sheet.

4.18.12 At a minimum of once per calendar quarter, Responsible Division Leader/Designee will review the current IWMDL and provide written assurance to the CCP SPM that the list is up to date OR provide necessary documentation to revise the list.

4.19 Off-Site Source Recovery Program

4.19.1 OSRP VE and Radiological Characterization will be conducted using certified equipment with personnel trained under the CCP Certified Program.

4.19.2 The OSRP uses a separate procedure for VE and packaging. In addition, it uses AK documentation in combination with calculations, in lieu of NDA.

4.19.3 Prior data for Off-Site Source Recovery (OSR) containers generated under the LANL Certified Program will be evaluated for acceptability into the CCP Certified Program.

[A] The previous BDRs will be reviewed and validated at the CCP Project Office prior to acceptance into the program.

[B] If the data validators at the CCP Project Office are unable to verify the data, the BDRs will not be accepted and will require re-generation under the CCP program.

4.20 CCP Project Office Certification Activities

4.20.1 CCP Project Office certification activities consist of project-level review of BDRs, lot evaluations, data validation, and WIPP Waste Information System/Waste Data System (WWIS/WDS) data entry. CCP Project Office certification activities will be conducted using personnel trained under the CCP Certified Program.

4.20.2 Data validators are responsible for completing the required checklists, resolving comments, and ensuring records are complete.

4.20.3 WWIS/WDS personnel will ensure information is entered into WWIS in accordance with CCP-TP-030, *CCP CH TRU Waste Certification and WWIS/WDS Data Entry*, and CCP-TP-530, *CCP RH TRU Waste Certification and WWIS/WDS Data Entry*.

4.20.4 The Waste Certification Official (WCO) will certify and transmit characterization and certification data using the WWIS/WDS and approved procedures.

4.20.5 The WCO will document and certify that all TRU waste payload containers prepared from the certified process for WIPP meet all of the requirements of DOE/WIPP-02-3214, CCP-PO-001, CCP-PO-002, *CCP Transuranic Waste Certification Plan*, and CCP-PO-003, *CCP Transuranic Authorized Methods For Payload Control (CCP CH-TRAMPAC)* or CCP-PO-505, *CCP Remote-Handled Transuranic Waste Authorized Methods for Payload Control (CCP RH-TRAMPAC)*.

4.20.6 The WCO will transmit information to the CCP Records in accordance with CCP-TP-030 and CCP-TP-530.

4.20.7 The WCO will provide the Transportation Certification Official (TCO) with all certification information necessary to certify the payload for transportation.

4.21 Transportation to WIPP

4.21.1 Transportation certification, preparation of the shipment of certified packages (e.g., Transuranic Package Transporter-II [TRUPACT-II], TRUPACT-III, HalfPact, or RH 72-B Cask), and shipment of the waste will be conducted using personnel trained under the CCP Certified Program.

4.21.2 CCP will provide TRUPACT-II, HalfPACT, CH, and RH loading training to LANL employees, as required, to maintain certifications required for transportation activities.

4.21.3 LANL will provide manifesting, marking, labeling and placarding of the shipments in accordance with Title 40 CFR, *Protection of Environment*, Title 49 CFR, *Transportation* requirements, and site-specific procedures.

4.21.4 LANL will verify and ensure that containers being shipped to Radioassay and Nondestructive Testing (RANT) or the loading area do not exceed AB MAR inventory.

4.21.5 LANL will track MAR inventory at RANT onsite, RANT facility, or other loadout facility.

4.21.6 The TCO will inspect the containers and verify that the filter installed on the containers to be shipped meet WIPP requirements and match information submitted during waste certification.

4.21.7 Waste will be loaded and prepared for transport to WIPP in accordance with DOE-approved operating procedures.

4.21.8 The TCO will provide documentation to the Responsible Division Leader/Designee responsible for certifying the waste for shipment in accordance with CCP procedures.

4.22 Remote-Handled (RH) Waste Program

4.22.1 Specific roles and responsibilities will be established for personnel under the CCP RH Program.

4.23 Measurement and Test Equipment (M&TE)

4.23.1 The CCP M&TE Custodian will provide recall notification for CCP M&TE that requires calibration to the CCP LANL Project Manager/Designee. M&TE requiring calibration will include such things as weight scales, infrared thermometers, temperature data-loggers, electronic calibrators, digital readouts, and pressure transducers.

4.23.2 LANS will provide National Institute of Science and Technology - traceable calibration services for specified M&TE. LANS will maintain records on M&TE calibration in accordance with its Qualified Suppliers List (QSL)-accepted program. LANS will provide copies of the Certificates of Calibration for these items of M&TE to the CCP VPM and the CCP M&TE Custodian via the CCP LANL Project Manager/Designee prior to issuing M&TE to CCP for use.

4.23.3 LANS will notify the CCP M&TE custodian when M&TE are added, deleted, found out-of-tolerance/defective or failed calibration by the Host site.

4.24 Procedures

4.24.1 The Responsible Division Leader/Designee will send LANL procedures and waste processing plans that can impact the CCP characterization process as well as requirements specified in DOE/WIPP 02-3122, Transuranic Waste Acceptance Criteria For The Waste Isolation Pilot Plant (WIPP-WAC); Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC); Waste Isolation Pilot Plant Hazardous Waste Facility Permit, Waste Analysis Plan (WIPP-WAP), to the LANL CCP Project Manager/Designee for review by appropriate CCP SMEs.

[A] As warranted, the LANL CCP Project Manager/Designee will provide written comments from the CCP review of LANL documents to the Responsible Division Leader/Designee for resolution.

[B] Responsible Division Leader/Designee will confirm with the LANL CCP Project Manager/Designee that CCP written comments are resolved and that CCP approves the document prior to proceeding with operations under the scope of the document being reviewed.

[C] LANS, at its discretion, may request objective evidence to support the competency of NWP reviewers.

4.24.2 Editorial or minor changes may be made without the same level of review and approval as the original document as defined in CCP-QP-010.

4.24.3 New Technical Operating Procedures (procedures that operate equipment) developed by CCP scheduled to be used at the Host site, shall be evaluated by the Host site Responsible Division Leader/Designee to determine if the procedure shall be added to the Host site review lists defined in step 4.24.5.

4.24.4 All characterization procedures, which physically manipulate the waste (e.g., VE) or the waste container (e.g., RTR or NDA) and all revisions to these procedures, will be provided to the Responsible Division Leader/Designee, by the CCP LANL Project Manager/Designee for review (e.g., USQD, AK evaluation, Health & Safety Review and Implementation), before approval by DOE/CBFO and implementation by CCP.

4.24.5 The Responsible Division Leader/Designee will designate the appropriate reviews of the documents listed below (which do not meet the criteria of step 4.24.2 and do not affect the AB) and forward written comments to CCP Document Control in accordance with CCP-QP-010 for resolution. For operational procedures that CCP is not currently operating to, the Responsible Division Leader/Designee may waive the review until CCP operations commence on site. When CCP operations return to the site, the Responsible Division Leader/Designee will be provided all procedures listed below for review.

CCP Documents:

- CCP LANL AK Summary Reports
- CCP LANL WSPFs

- CCP Interface Waste Management Document Lists
- CCP AKA
- CCP-CM-003, *CCP High Efficiency Neutron Counter (HENC-01) (Equipment #NDA-HENC-01) Equipment Description*
- CCP-CM-005, *CCP High-Efficiency Neutron Counter (HENC) (Equipment #NDA-HENC-03) Equipment Description*
- CCP-CM-018, *CCP Real-Time Radiography MCS Unit #3 LANL Unit #2 (RTR #2) (Equipment #NDE-RTR-03/ LANL-RTR-02) Equipment Description*
- CCP-CM-024, *CCP High Efficiency Neutron Counter (HENC-02) (Equipment #NDA-HENC-02) Equipment Description*
- CCP-CM-028, *CCP Real-Time Radiography LANL Unit #1 (Equipment #LANL-RTR-01) Equipment Description*
- CCP-CM-029, *CCP High Energy Real-Time Radiography System HE-RTR*
- CCP-CM-032, *CCP Super High-Efficiency Neutron Counter (SuperHENC) Equipment Description*
- CCP-PO-016, *CCP Gas Generation Testing Quality Assurance Project Plan*
- CCP-TP-053, *CCP Standard Real-Time Radiography (RTR) Inspection Procedure*
- CCP-TP-054, *CCP Adjustable Center of Gravity Lift Fixture Preoperational Checks and Shutdown*
- CCP-TP-055, *CCP Varian Porta-Test Leak Detector Operations*
- CCP-TP-059, *CCP Operating the Super High Efficiency Neutron Counter (HENC) Using NDA 2000*

- CCP-TP-063, *CCP Operating the High Efficiency Neutron Counter Using NDA 2000*
- CCP-TP-064, *CCP Calibrating the High Efficiency Neutron Counter and the Super High Efficiency Neutron Counter Using NDA 2000*
- CCP-TP-066, *CCP Radiography Screening Procedure for Prohibited Items*
- CCP-TP-068, *CCP Standardized Container Management*
- CCP-TP-069, *CCP Sealed Source Visual Examination and Packaging*
- CCP-TP-076, *CCP Operating the Mobile ISOCS Large Container Counter Using NDA 2000*
- CCP-TP-077, *CCP Calibrating the Mobile ISOCS Large Container Counter Using NDA 2000*
- CCP-TP-078, *CCP LANL Info Scan Radiography Procedure*
- CCP-TP-082, *CCP Waste Container Filter Vent Maintenance and Operation*
- CCP-TP-083, *CCP Gas Generation Testing*
- CCP-TP-086, *CCP CH Packaging Payload Assembly*
- CCP-TP-101, *CCP Off-Site Source Recovery Project Sealed Source Radiological Characterization*
- CCP-TP-103, *CCP Data Reviewing, Validating, and Reporting Procedure for the NDA Counters at LANL Using NDA 2000*
- CCP-TP-107, *CCP Operating the High Efficiency Neutron Counter #3 (HENC #3) Using NDA 2000*
- CCP-TP-108, *CCP Calibrating the High Efficiency Neutron Counter #3 (HENC #3) Using NDA 2000*

- CCP-TP-113, *CCP Standard Contact-Handled Waste Visual Examination*
- CCP-TP-120, *CCP Container Management*
- CCP-TP-121, *CCP RTR #1 Operating Procedure*
- CCP-TP-122, *CCP RTR #2 Operating Procedure*
- CCP-TP-198, *CCP HE-RTR Operating Procedure*

NOTE

This note applies to step 4.24.6. Examples of cognizant personnel may include, but is not limited to SMEs for the following as applicable to the document reviewed:

- Waste generating/packaging/repackaging processes
- Chemical and physical characteristics of waste streams
- Chemical compatibilities
- Radiological properties of waste streams
- Treatment permits
- Nuclear Safety
- Environmental compliance
- Facility operations

4.24.6 Upon receipt of a document listed in step 4.24.5, the Responsible Division Leader/Designee will ensure the document is reviewed by cognizant personnel responsible for the waste management activities relevant to the scope of the document.

4.24.7 As warranted, the Responsible Division Leader/Designee will provide written comments to CCP using Document Review Record in accordance with CCP-QP-010.

4.24.8 CCP, at its discretion, may request objective evidence to support the competency of Host site/generator reviewers.

4.24.9 The LANL CCP Project Manager/Designee will confirm with the Responsible Division Leader/Designee that LANL written comments are resolved and LANL concurrence is provided prior to proceeding with CCP operations under the scope of the document being reviewed.

4.25 Documents/Records

4.25.1 All AK documents generated at LANL must be reviewed prior to release by an Authorized Derivative Classifier (ADC) as detailed in ADC guidance documents.

4.25.2 In addition, any document created by CCP or LANS that is intended for public release must be reviewed and processed for Unclassified Controlled Nuclear Information (UCNI) review and Public Release review prior to release.

4.25.3 Documents listed in steps 4.25.4 and 4.25.5, which are provided from one organization to the other as information copies, may be transmitted via memo, fax, e-mail, or formal correspondence.

4.25.4 Documents to be provided by LANS after completion of ADC review to CCP personnel include copies of the following:

- [A] Existing AK documentation including, but not limited to: source documents, spreadsheets, NCR, VE, PID information, and characterization raw data.
- [B] Changes to container data information after AK has been collected and/or reconciled.
- [C] Any documentation required for CCP to perform its scope of work, including correspondence pertaining to characterization activities.
- [D] Radiological dose rate and surface contamination results on waste drums as needed to support WDS data entry.
- [E] Copies of calibration certifications for M&TE used by CCP.

4.25.5 Documents to be provided by CCP (No ADC review required) to LANL personnel, as applicable, include copies of the following:

- [A] Completed BDRs for all processes.
- [B] Copy of WSPF for concurrence.
- [C] Copy of AK Summary Reports for concurrence.
- [D] Lot Evaluation documentation.

- [E] Completion of CCP Training/LOQI updates.
- [F] AK Tracking Spreadsheet.
- [G] NCRs and WIPP Forms generated.
- [H] Other reports generated to support a certified program.
- [I] Daily Production Reports.
- [J] CCP Interface Waste Management Document Lists.
- [K] CCP AKA.

4.25.6 Documents that are generated at LANL during the implementation of the TRU waste characterization and disposal at WIPP will be processed through the CCP Records process in accordance with CCP-QP-008. After completion of all activities, these records will be turned over to LANL at the end of the project.

4.26 Quality Assurance (QA)

4.26.1 All quality affecting work performed in the completion of this waste characterization, certification, and transportation scope will be in compliance with applicable DOE/CBFO-certified CCP procedures.

4.26.2 CCP will conduct periodic QA surveillances to assess compliance with applicable WIPP requirements.

4.26.3 The Host site will conduct surveillances to assess compliance with applicable procedures.

4.27 Procurement

4.27.1 Qualified LANS personnel may procure, inspect, and perform receipt inspection of U.S. Department of Transportation (DOT) Type 7A containers, filters, gases and various non-quality affecting items for certified CCP operations in accordance with LANL procurement requirements.

4.27.2 LANS personnel will perform procurement activities in accordance with its QSL-accepted program.

4.27.3 CCP may procure, inspect, and perform receipt inspection of quality-affecting items (e.g., DOE Type 7A containers, filters, and gases) and various nonquality affecting items for certified operation in accordance with CCP procurement requirements. Quality-related procurements ordered by CCP require a CCP receipt inspection only; they **DO NOT** require a LANL QA receipt inspection. Documentation of these inspections will be made available to the LANS QPA Division Leader/Designee upon request.

4.27.4 All procurements for commodities (e.g., Pipe Overpack, and SWB) procured through CBFO's Central Procurement Program (CPP) will require LANL receipt inspection. CPP acceptance is evidenced by the approved data package provided with each shipment.

4.27.5 All HAZMAT packaging procured or leased by CCP or CBFO shall be in accordance with written specification and receipt inspection plans that have been reviewed and approved by LANL Operations Support Packaging and Transportation (OS-PT). These specifications and plans will be provided by OS-PT with the procurement request documents that are provided to CCP or CBFO.

4.28 Notification

4.28.1 The Host site has primary responsibility to notify CCP when there are changes in the Host site facilities used by CCP for characterization activities or changes that may impact operations.

4.28.2 The Host site has primary responsibility to notify CCP when there are changes to policies, processes, or procedures that may affect CCP characterization activities or operations.

4.28.3 The Host site has primary responsibility to notify CCP when repairs or modifications are made to transportation trailers or packaging equipment (TRUPACT-II, HalfPACTs, etc.). CCP will then notify the appropriate cognizant engineer at the WIPP site. The cognizant engineer will verify the modification/repair.

4.28.4 The Host site has primary responsibility to notify CCP of required notifications of various container conditions or changes to the notification requirements.

- 4.28.5 CCP has primary responsibility to ensure changes to equipment are in accordance with CCP-CM-001, *CCP Equipment Change Authorization and Documentation*.
- 4.28.6 CCP has primary responsibility to notify the Host site when there are configuration changes to CCP-provided equipment.
- 4.28.7 CCP has responsibility to notify the Operations Center of various container conditions (e.g., FGE) as identified in the previous sections.
- 4.29 Occurrence Reporting and Processing System (ORPS) and Price-Anderson Amendments Act (PAAA)
- 4.29.1 Both LANS and CCP maintain the responsibility for reporting potential PAAA issues resulting from waste certification or safe operation of characterization activities (e.g., Technical Safety Requirements, Radiation Safety, Industrial Safety, Industrial Hygiene, Maintenance, Lockout/Tagout, Conduct of Operations) of TRU waste by CCP at LANL. This includes filing any Occurrence Reporting and Processing System (ORPS) reports resulting from the characterization activities of TRU waste by CCP.
- 4.29.2 Both LANS and CCP shall invite the other to participate in the investigation of any waste characterization event that results in an ORPS or PAAA report.
- 4.29.3 Both LANS and CCP shall support and participate in investigations when CCP characterization activities result in an ORPS or PAAA report.
- 4.29.4 Within CCP, the NWP Compliance Coordinator serves as the PAAA point-of-contact. Within LANS, the PAAA Coordinator for Quality and Performance Assurance Division Office (QPA-DO) acts as the PAAA point-of-contact, with roles and responsibilities in accordance with the Host site program.
- 4.29.5 In coordination with the CCP LANL Project Manager/Designee and the CCP VPM, the NWP Compliance Coordinator is responsible for notifying the LANS PAAA point-of-contact for any occurrences or conditions related to CCP characterization operations that are an actual or potential noncompliance to the applicable AB, and for any occurrences or conditions that are an actual or potential noncompliance to the CCP Certified Program procedures, implementation of the QA Program (10 CFR Part 830, *Nuclear*

Safety Management) or the Radiation Protection Program (10 CFR Part 835, *Occupational Radiation Protection*) impacting or potentially impacting nuclear safety, or implementation of the Worker Safety and Health Plan (10 CFR Part 851) impacting or potentially impacting personnel safety.

[A] Both parties are responsible for ensuring compliance with their respective programs.

4.29.6 The LANS PAAA point-of-contact will notify the NWP Compliance Coordinator of any PAAA noncompliance with the CCP Certified Program. The CCP LANL Project Manager/Designee is responsible for ensuring that deficiencies identified within the CCP Program are appropriately documented and forwarded to the NWP Compliance Coordinator.

4.30 Authorization Basis (AB) and Configuration Management

4.30.1 The Host site has primary responsibility to ensure that CCP equipment and processes have been appropriately considered within the DOE-approved Host site DSA.

[A] The Host site shall provide to CCP, Host site generated AB documentation concerning CCP related activities and equipment, including USQDs, for CCP's review.

[B] CCP has primary responsibility to control operations and CCP-provided equipment configurations to ensure compliance with CCP and Host site procedures that protect the personnel, the public, and the environment.

[C] For CCP provided equipment, CCP will provide the documentation necessary for the Host site to perform the evaluation against its safety analysis. This documentation may include HSPs, hazard assessments, system descriptions, equipment drawings, or other information deemed necessary through mutual agreement between CCP and the Host site.

[D] For Host site-provided equipment, CCP will review operational and AB documentation, including USQDs, prior to assuming operation of the equipment to ensure the protection of personnel, the public, and the environment.

[E] All changes to equipment operated by CCP will be controlled by the Host site Work Control Program to ensure appropriate AB evaluations are conducted, and associated controls established.

[F] The Host site will make available all changes to AB requirements that affect CCP operations to CCP prior to implementation.

4.31 10 Code of Federal Regulation (CFR) Part 851, *Worker Safety and Health Program*

4.31.1 The requirements of 10 Code of Federal Regulation (CFR) Part 851, *Worker Safety and Health Program* are incorporated at LANL by PD103, *Worker Safety and Health Program*. All work performed by CCP at LANL will be in accordance with PD103, *Worker Safety and Health Program*.

5.0 RECORDS

- 5.1 Records are generated during the implementation of procedures referenced in this Interface Document. These records are maintained as QA records in accordance with CCP-QP-008. No additional records are generated as a result of this Interface Document.

6.0 OVERSIGHT

NOTE

DOE has delegated the authority to CCP to characterize and certify TRU waste to be shipped to the WIPP. Nonetheless, the Host site retains the responsibility for proper disposal as the waste generator on behalf of DOE. Accordingly, the following actions will define the level of oversight of the CCP by Host site personnel.

- 6.1 The Host site will accept successful completion of the CBFO certification audit as adequate evidence that the CCP implementation at the Host site is fully compliant with waste disposal requirements as set forth in the CH and RH WAC and WAP. However, the Host site may conduct, at their discretion, periodic surveillances of CCP operations.
- 6.2 Following successful completion of the CBFO certification audit, the Host site QA will conduct periodic surveillances to ensure CCP work is conducted in accordance with CCP procedures. These surveillances will be conducted in accordance with Host site QA procedures.
- 6.3 The Host site QA will provide copies of its surveillance reports to the CCP SPM. The CCP SPM and NWP QA will take the following actions:
 - 6.3.1 Review the Host site surveillance reports for any finding or other deficiencies against the CCP scope of work.
 - 6.3.2 Document and perform corrective actions in accordance with applicable NWP issues management procedures.
 - 6.3.3 Provide Host site QA with CCP actions to correct the identified deficiencies.
 - 6.3.4 NWP QA will maintain an information file of the Host site surveillance reports conducted on the CCP scope of work.

Attachment 1 – Acronyms and Key Definitions

AB	Authorization Basis
ADC	Authorized Derivative Classifier
ADEP	Associate Directorate of Environmental Programs
ADESH	Associate Directorate, Environment, Safety and Health
ADPSM	Associate Directorate Plutonium Science and Manufacturing
AK	Acceptable Knowledge
AKA	Acceptable Knowledge Assessment
AKE	Acceptable Knowledge Expert
BDR	Batch Data Report
CBFO	Carlsbad Field Office
CCP	Central Characterization Program
CFR	Code of Federal Regulations
CH	Contact-Handled
CP	Cognizant personnel
CPP	Central Procurement Program
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
DSA	Documented Safety Analysis
EA	Expert Analyst
ES&H	Environment, Health, and Safety Plan
FGA	Flammable Gas Analysis
FGE	Fissile Gram Equivalent
FOD	Facility Operations Director
GGT	Gas Generation Testing
HENC	High Efficiency Neutron Counter
Host Site	LANS
IPCT	Integrated Process Control Team
Interface Agreement	An agreement between the CCP and LANL for defining the responsibilities associated with WIPP requirements defined in the reference documents identified in Section 2.1 of the Interface Document.
IWD	Integrated Work Documents
IWMDL	Interface Waste Management Document List
LANL	Los Alamos National Laboratory
LANS	Los Alamos National Security
LO/TO	Lockout/Tagout
LOQI	List of Qualified Individuals
MAR	Material at Risk
M&TE	Measurement and Test Equipment
nCi/g	nanocuries per gram
NCR	Nonconformance Report
NDA	Nondestructive Assay
NDE	Nondestructive Examination

Attachment 1 – Acronyms and Key Definitions (Continued)

NPI	Nuclear Process Infrastructure
NWP	Nuclear Waste Partnership
OJT	On-The-Job-Training
ORPS	Occurrence Reporting and Processing System
OS-PT	Operations Support Packaging and Transportation
OSR	Off-Site Source Recovery
OSRP	Off-Site Source Recovery Program
PAAA	Price-Anderson Amendments Act
PE-Ci	Plutonium Equivalent Curies
PDP	Performance Demonstration Program
PID	Prohibited Item Disposition
PMP	Performance Management Plan
QA	Quality Assurance
QPA-DO	Quality and Performance Assurance Division Office
QSL	Qualified Suppliers List
RANT	Radioassay and Nondestructive Testing
RCRA	Resource Conservation and Recovery Act
RH	Remote-Handled
RLM	Responsible Line Manager
RMA	Radioactive Materials Area
RTR	Real-time radiography
RWP	Radiation Work Permit
SDS	Safety Data Sheet
sftp	secure file transfer protocol
SHENC	Super High Efficiency Neutron Counter
SME	Subject Matter Expert
SPM	Site Project Manager
STR	Subcontract Technical Representative
SWB	Standard Waste Box
TA	Technical Area
TCO	Transportation Certification Official
TLD	Thermoluminescent Dosimeters
TRAMPAC	Transuranic Authorized Methods for Payload Control
TRU	Transuranic
TRUPACT	Transuranic Package Transporter
TRUPACT-II	Transuranic Package Transporter Model II
TRU Waste	Waste containing more than 100 nanocuries (nCi) of alpha emitting Transuranic isotopes per gram of waste with half-lives >20 years (for payload containers)
TSCA	Toxic Substances Control Act
TSR	Technical Safety Requirements
UCNI	Unclassified Controlled Nuclear Information
USQD	Unreviewed Safety Question Determination

Attachment 1 – Acronyms and Key Definitions (Continued)

VE	Visual Examination
VPM	Vendor Project Manager
WAC	Waste Acceptance Criteria
WCO	Waste Certification Official
WCPIP	<i>Remote-Handled TRU Waste Characterization Program Implementation Plan</i>
WCRRF	Waste Characterization, Reduction, and Repackaging Facility
WIPP	Waste Isolation Pilot Plant
WIPP Requirements	Requirements contained in references identified in documents contained in Section 2.1 of the Interface Document
WSPF	Waste Stream Profile Form
WWIS/WDS	WIPP Waste Information System/Waste Data System

| Attachment 2 – Reference Documents (For Information Only)

DOE Carlsbad Documents:

- | • *Waste Isolation Pilot Plant Hazardous Waste Facility Permit, Waste Analysis Plan*
- *DOE/CBFO-94-1012, U.S. Department of Energy Carlsbad Field Office Quality Assurance Program Document*
- *DOE/WIPP-02-3214, Remote-Handled TRU Waste Characterization Program Implementation Plan*
- *DOE/WIPP-02-3122, Transuranic Waste Acceptance Criteria For The Waste Isolation Pilot Plant*
- *DOE/CBFO-01-1005, Performance Demonstration Program Plan for Nondestructive Assay of Drummed Wastes for the TRU Waste Characterization Program*
- *DOE/CBFO-95-1076, Performance Demonstration Program Plan For Analysis Of Simulated Headspace Gases*

First-Tier Coordination Documents:

- *Statement of Work for Characterization of LANL TRU Waste (Contact Handled and Remote Handled)*
- *FTA-WFM-023, Agreement between FWO-Waste Facility Management*
- *First-Tier Coordination Documents for the RH TRU Waste Characterization Program Implementation Plan*

First-Tier Certification Documents:

- *WP 13-1, Nuclear Waste Partnership LLC, Quality Assurance Program Description*
- *CCP-PO-001, CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- *CCP-PO-002, CCP Transuranic Waste Certification Plan*
- *CCP-PO-003, CCP Transuranic Authorized Methods For Payload Control (CCP CH-TRAMPAC)*

Attachment 2 – Reference Documents (For Information Only) (Continued)

- CCP-PO-505, *CCP Remote-Handled Transuranic Waste Authorized Methods for Payload Control (CCP RH-TRAMPAC)*

Lower-Tier Documents:

- CCP-AK-LANL-004, *Central Characterization Program Acceptable Knowledge Summary Report For Los Alamos National Laboratory TA-50 Mixed Transuranic Waste, Waste Streams: LA-MIN03-NC.001, LA-CIN02.001, LA-MHD09.001*
- CCP-AK-LANL-006, *Central Characterization Program Acceptable Knowledge Summary Report For Los Alamos National Laboratory TA-55 Mixed Transuranic Waste, Waste Streams: LA-MHD01.001, LA-CIN01.001, LA-MIN02-V.001, LA-MIN04-S.001*
- CCP-AK-LANL-008, *Central Characterization Project Acceptable Knowledge Summary Report For Los Alamos National Laboratory Off-Site Source Recovery Project Sealed Sources, Waste Streams: LA-OS-00-01.001, LA-OS-00-03, and LA-OS-00-04*
- CCP-AK-LANL-009, *Central Characterization Program Acceptable Knowledge Summary Report For Los Alamos National Laboratory Chemistry and Metallurgy Research (CMR) Facility, Waste Streams: LA-MHD03.001, LA-CIN03.001, LA-MIN05-V.001*
- CCP-AK-LANL-010, *Central Characterization Program Acceptable Knowledge Summary Report For Los Alamos National Laboratory TA-21 DP West Facility Waste Streams: LA-MHD04.001, LA-MSG04.001, LA-CIN04.001*
- CCP-AK-LANL-012, *Central Characterization Program Acceptable Knowledge Summary Report for Los Alamos National Laboratory TA-48 Alpha Facility Waste Stream: LA-MHD08.001*
- CCP-AK-LANL-013, *Central Characterization Program Acceptable Knowledge Summary Report for Los Alamos National Laboratory Lovelace Respiratory Research Institute Waste Stream: LA-MHD05-ITRI.001*
- CCP-CM-001, *CCP Equipment Change Authorization and Documentation*
- CCP-CM-003, *CCP HighEfficiency Neutron Counter (HENC-01) (Equipment #NDA-HENC-01) Equipment Description*
- CCP-CM-005, *CCP High-Efficiency Neutron Counter (HENC) (Equipment #NDA-HENC-03) Equipment Description*

| Attachment 2 – Reference Documents (For Information Only) (Continued)

Lower-Tier Documents (Continued):

- CCP-CM-018, *CCP Real-Time Radiography MCS Unit #3 LANL Unit #2 (RTR #2) (Equipment #NDE-RTR-03/LANL-RTR-02) Equipment Description*
- CCP-CM-024, *CCP High-Efficiency Neutron Counter (HENC-02) (Equipment #NDA-HENC-02) Equipment Description*
- CCP-CM-028, *CCP Real-Time Radiography LANL Unit #1 (Equipment #LANL-RTR-01) Equipment Description*
- CCP-CM-032, *CCP Super High-Efficiency Neutron Counter (SuperHENC) Equipment Description*
- CCP-PO-005, *CCP Conduct of Operations*
- CCP-PO-006, *CCP Conduct of Operations Matrix*
- CCP-PO-012, *CCP/Los Alamos National Laboratory (LANL) Interface Document*
- CCP-PO-016, *CCP Gas Generation Testing Quality Assurance Project Plan*
- CCP-PO-026, *CCP Configuration Management*
- CCP-QP-001, *CCP Graded Approach*
- CCP-QP-002, *CCP Training and Qualification Plan*
- CCP-QP-005, *CCP TRU Nonconforming Item Reporting and Control*
- CCP-QP-008, *CCP Records Management*
- CCP-QP-010, *CCP Document Preparation, Approval, and Control*
- CCP-QP-016, *CCP Control of Measuring and Testing Equipment*
- CCP-QP-022, *CCP Software Quality Assurance Plan*
- CCP-QP-040, *Support Training*

Attachment 2 – Reference Documents (For Information Only) (Continued)

Lower-Tier Documents (Continued):

- CCP-TP-001, *CCP Project Level Data Validation and Verification*
- CCP-TP-002, *CCP Reconciliation of DQOs and Reporting Characterization Data*
- CCP-TP-005, *CCP Acceptable Knowledge Documentation*
- CCP-TP-030, *CCP CH TRU Waste Certification and WWIS/WDS Data Entry*
- CCP-TP-033, *CCP Shipping of CH TRU Waste*
- CCP-TP-053, *CCP Standard Real-Time Radiography (RTR) Inspection Procedure*
- CCP-TP-054, *CCP Adjustable Center of Gravity Lift Fixture Preoperational Checks and Shutdown*
- CCP-TP-055, *CCP Varian Porta-Test Leak Detector Operations*
- CCP-TP-059, *CCP Operating the Super High Efficiency Neutron Counter (HENC) Using NDA 2000*
- CCP-TP-063, *CCP Operating the High Efficiency Neutron Counter Using NDA 2000*
- CCP-TP-064, *CCP Calibrating the High Efficiency Neutron Counter and the Super High Efficiency Neutron Counter Using NDA 2000*
- CCP-TP-066, *CCP Radiography Screening Procedure for Prohibited Items*
- CCP-TP-068, *CCP Standardized Container Management*
- CCP-TP-069, *CCP Sealed Source Visual Examination and Packaging*
- CCP-TP-076, *CCP Operating the Mobile ISOCS Large Container Counter Using NDA 2000*
- CCP-TP-077, *CCP Calibrating the Mobile ISOCS Large Container Counter Using NDA 2000*
- CCP-TP-082, *CCP Waste Container Filter Vent Maintenance and Operation*

| Attachment 2 – Reference Documents (For Information Only) (Continued)

Lower-Tier Documents (Continued):

- CCP-TP-083, *CCP Gas Generation Testing*
- CCP-TP-086, *CCP CH Packaging Payload Assembly*
- CCP-TP-101, *CCP Off-Site Source Recovery Project Sealed Source Radiological Characterization*
- CCP-TP-103, *CCP Data Reviewing, Validating, and Reporting Procedure for the NDA Counters at LANL Using NDA 2000*
- CCP-TP-107, *CCP Operating the High Efficiency Neutron Counter #3 (HENC #3) Using NDA 2000*
- CCP-TP-108, *CCP Calibrating the High Efficiency Neutron Counter #3 (HENC #3) Using NDA 2000*
- CCP-TP-113, *CCP Standard Contact-Handled Waste Visual Examination*
- CCP-TP-120, *CCP Container Management*
- CCP-TP-121, *CCP RTR #1 Operating Procedure*
- CCP-TP-122, *CCP RTR #2 Operating Procedure*
- CCP-TP-198, *CCP HE-RTR Operating Procedure*
- CCP-TP-506, *CCP Preparation of the Remote-Handled Transuranic Waste Acceptable Knowledge Characterization Reconciliation Report*
- CCP-TP-507, *CCP Shipping of Remote-Handled Transuranic Waste*
- CCP-TP-530, *CCP RH TRU Waste Certification and WWIS/WDS Data Entry*
- DOE/WIPP 02-3183, *CH Packaging Program Guidance*
- DOE/WIPP 02-3184, *CH Packaging Operations Manual*
- DOE/WIPP 02-3220, *CH Packaging Operations for High-Wattage Waste*
- DOE/WIPP 02-3283, *RH Packaging Program Guidance*

| Attachment 2 – Reference Documents (For Information Only) (Continued)

Lower-Tier Documents (Continued):

- DOE/WIPP 02-3284, *RH Packaging Operations Manual*
- DOE/WIPP 02-3285, *RH Packaging Maintenance Manual*
- DOE/WIPP 06-3345, *Waste Isolation Pilot Plant Flammable Gas Analysis*
- WP 08-PT.13 *RH-TRU 72-B Cask Uprighting Trailer Operation and Maintenance Manual*
- WP 15-GM1002, *Issues Management Processing of WIPP Forms*

Attachment 3 – LANS Host Site Required Documents (For Information Only)

Upper-Tier LANL Documents:

- Integrated Work Management, P 300
- Verification of Readiness to Start Up or Restart LANL Nuclear Facilities, Activities, and Operations, P 115
- Procedure for Pause/Stop Work, P 101-18
- Cryogenics, P 101-5
- Lockout/Tagout for Hazardous Energy Control, P 101-3
- Personal Protective Equipment, P 101-6
- Cranes, Hoists, Lifting Devices, and Rigging Equipment, P 101-25
- Emergency Management, PD 1200-1
- Waste Management , P 409
- LANL Packaging and Transportation Program Procedure P 151-1
- Integrated Safeguards and Security Management, SD 200
- Nuclear Material Control and Accountability, PD 205
- Performance Improvement from Abnormal Events , P 322-3
- Fire Protection Program, PD 1220
- Radiation Protection, P 121

Lower-Tier LANL Documents:

- EP-DIR-AP-10001, *ADEP Document Control*
- EP-PLAN-3201, *TA-54 Health and Safety Plan*
- PD 1022, *Review and Release of Scientific and Technical Information*
- P204-2, *Classified Matter Protection and Control Handbook*

- Attachment 3 – LANS Host Site Required Documents (For Information Only)
(Continued)

Federal Documents

- 10 CFR Part 830, *Nuclear Safety Management*
- 10 CFR Part 835, *Occupational Radiation Protection*
- 10 CFR Part 851, *Worker Safety and Health Program*
- Title 40 CFR, *Protection of Environment*
- Title 49 CFR, *Transportation*

Figure 1. CCP-LANL Communications Flow Chart

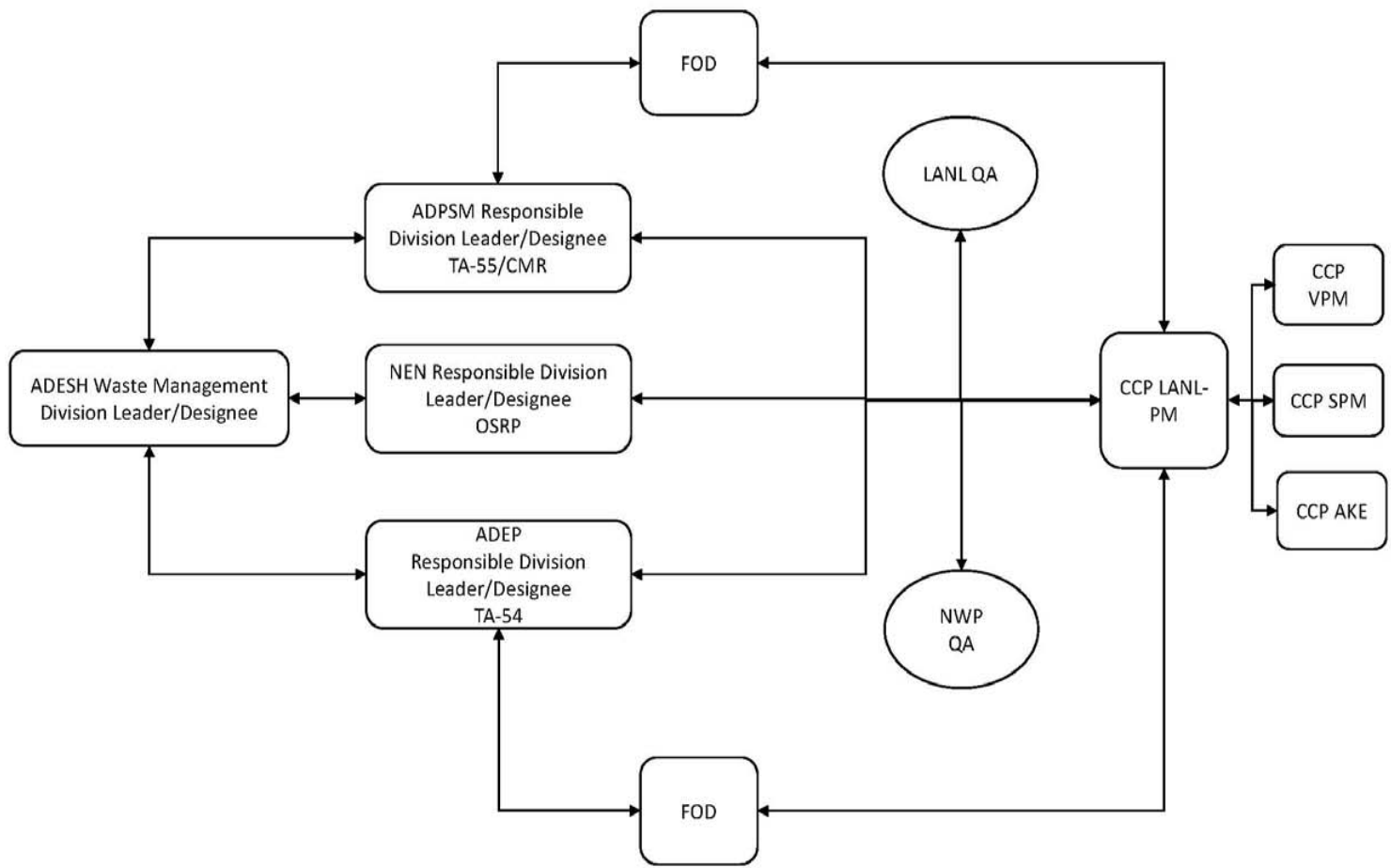


Figure 2. Nuclear Waste Partnership – LANL

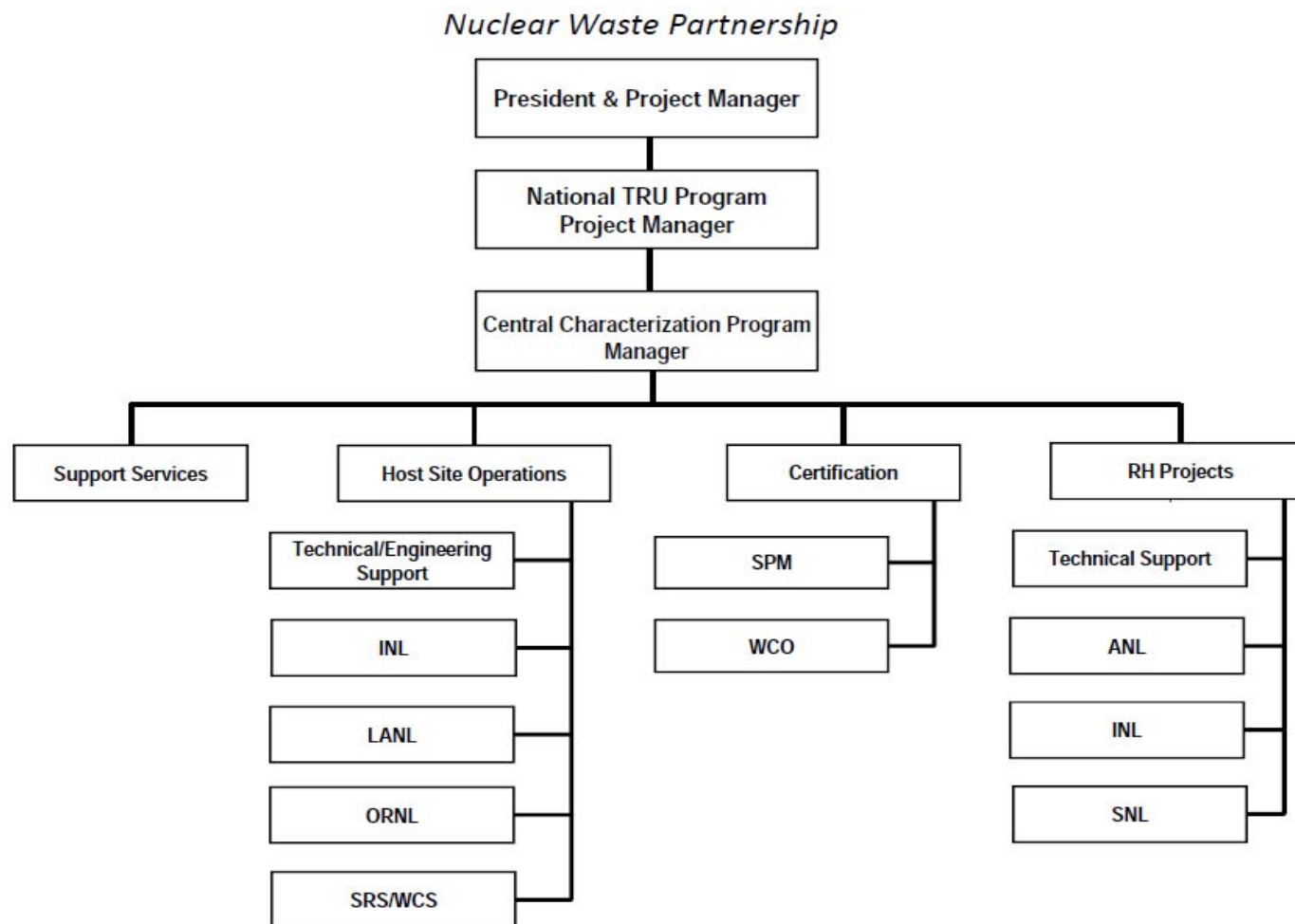
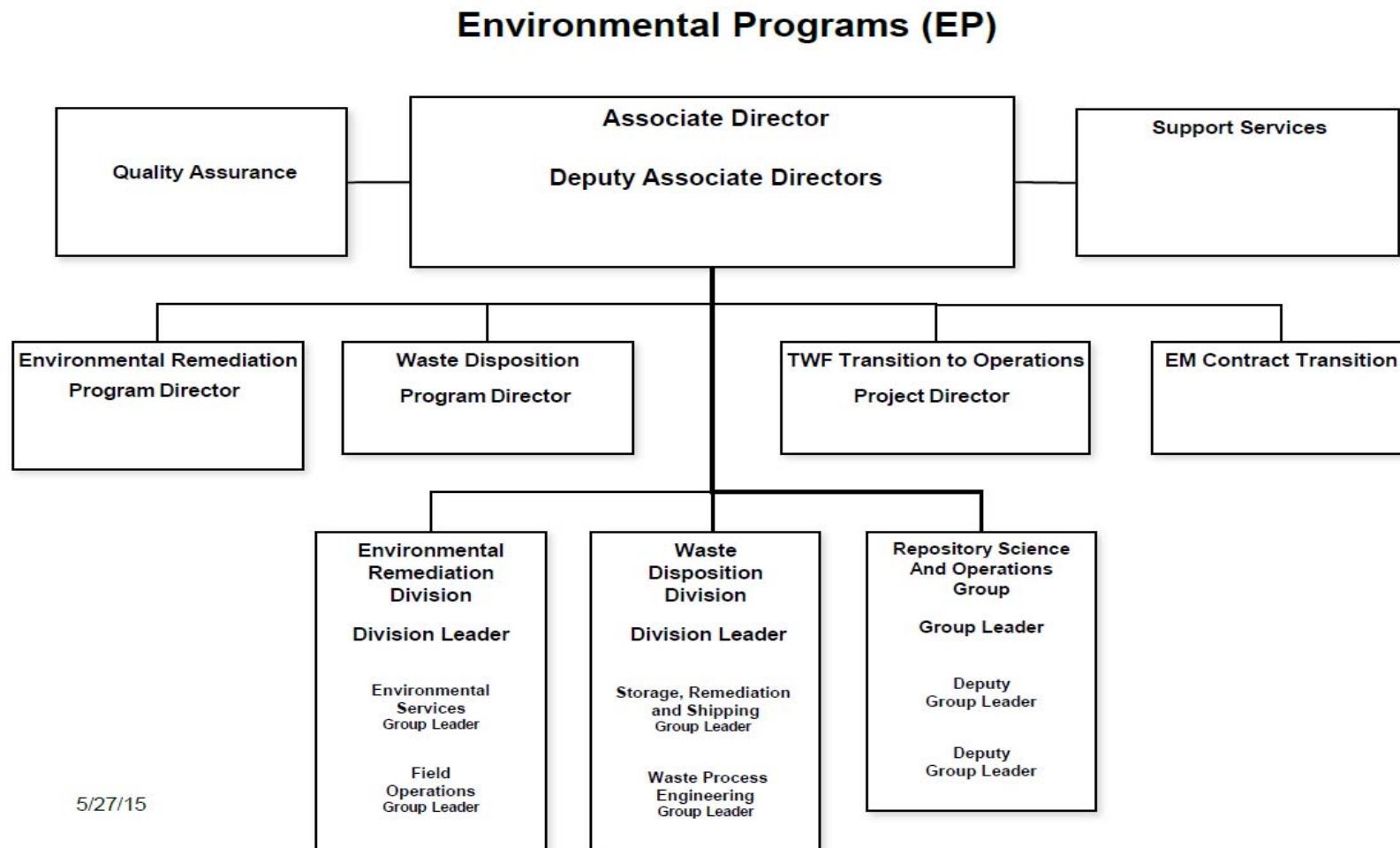


Figure 3. Environmental Programs



5/27/15

Figure 4. ADPSM: Nuclear Process Infrastructure

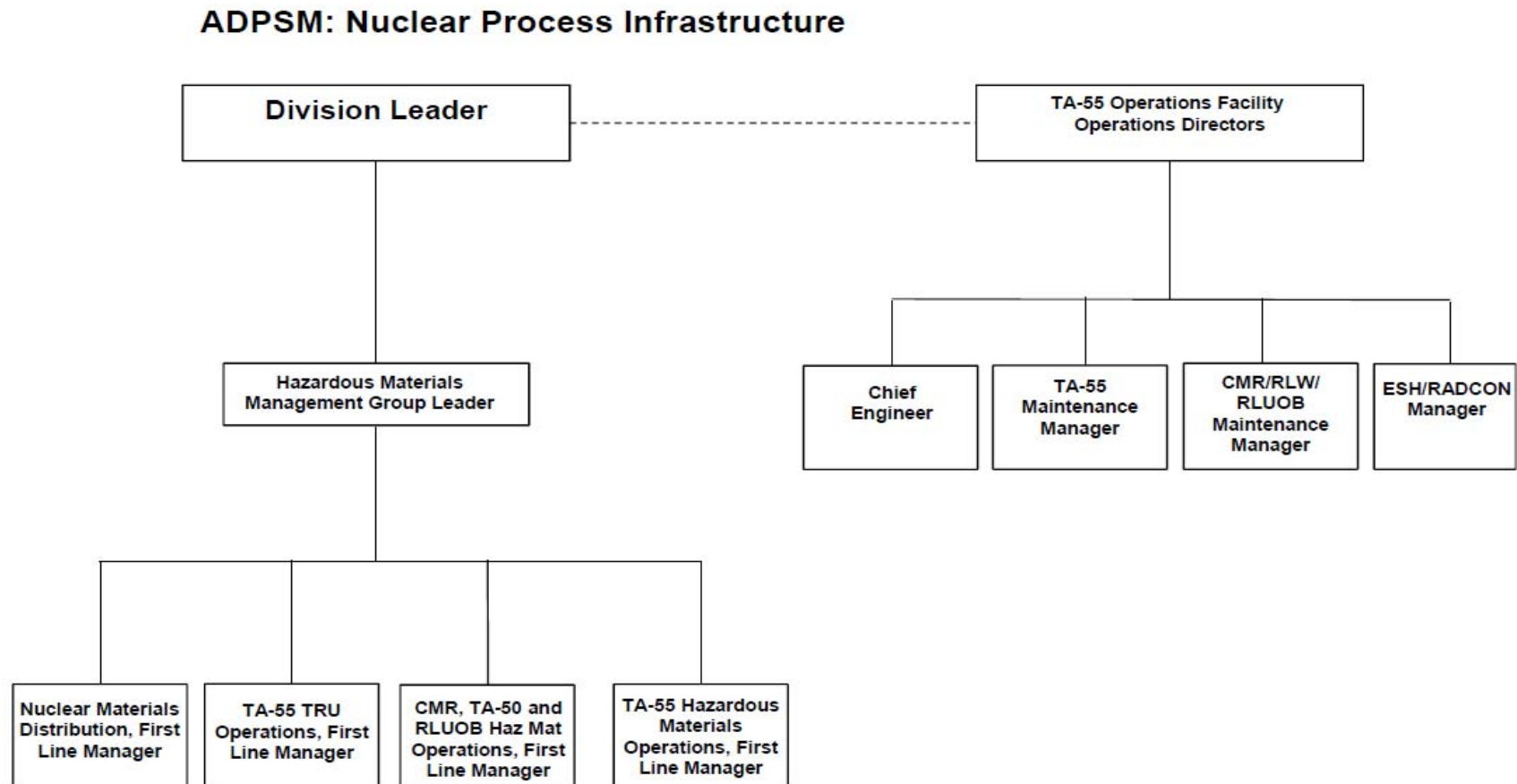
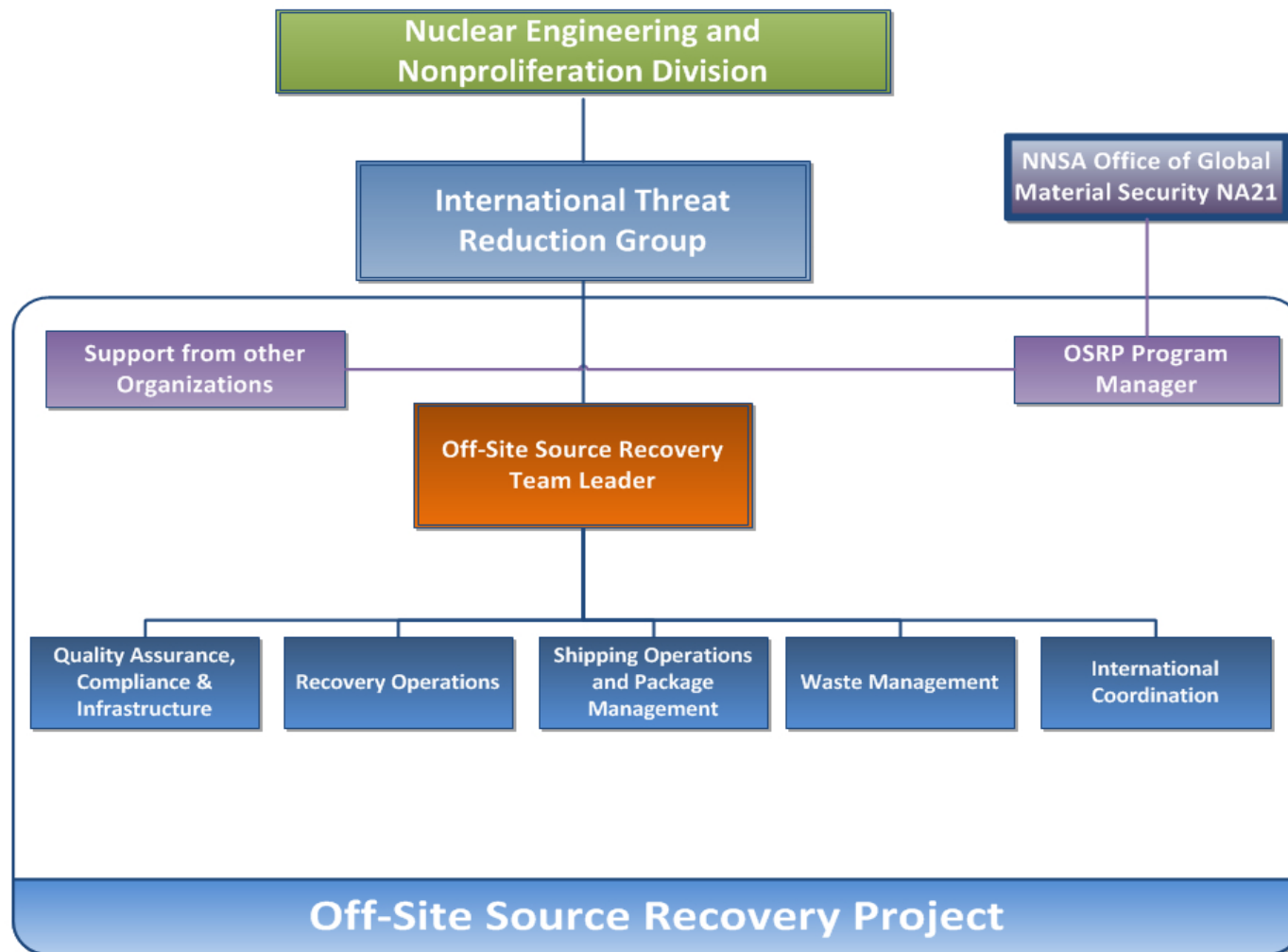


Figure 5. NEN Nuclear Nonproliferation Division



CCP-PO-004

Revision 36

CCP/SRS Interface Document

EFFECTIVE DATE: 02/17/2016

Mike Ramirez

PRINTED NAME

APPROVED FOR USE

RECORD OF REVISION

Revision Number	Date Approved	Description of Revision
8	02/08/2002	Made editorial changes and other clarification to 2.0, 3.2.1, 3.38, 4.3.1, 4.4.2 H-P, 4.15 through 4.15.7 also updated Figure 1 & 2. Complete rewrite of 4.10 Transportation.
9	05/09/2002	This document is being revised to correct errors and update the work chart in Figure 1 and 2; Three additional procedures were added to 4.13.3 for the STR to review; Incorporated changes requested by Programs Industrial Safety and Hygiene Document Review to 3.5.6; Incorporated additional comments and changes to section 4.11.1, 4.11.2, and 4.13; Added additional procedure to 4.13.6
10	06/27/2002	Made changes to 3.2.1, 3.5.3 and 4.6.2, Updated Figure 2
11	09/20/2002	Clarification to sections 1.1, 1.2, 3.2, 4.2, 4.3, 4.5, 4.6 and 4.13; Added additional procedures to 4.13.3 and 4.13.6 for the STR and the FSR review; Added steps 3.2.9, 3.3.10, 3.5.7, and 4.6.3.
12	04/08/2003	Revised Steps 3.2.1, step 4.7.2.[E] and step 4.1.3 rewrote Section 4.10, Transportation, added new procedures to the lists in Steps 4.13.3 and 4.13.6, and deleted CCP-TP-057 from Step 4.13.3 since that procedure has been cancelled.
13	08/04/2003	Revision to incorporate corrective actions for CAR-SRS-0004-03 for modification of drums; adding VE to be performed under CCP and to incorporate changes in response to SRS QA Audit Report 2003-AR-26-0006.
14	10/09/2003	Revision to incorporate changes to referenced documents and to add VE as an activity conducted under CCP program.
15	05/24/2004	Revised steps 3.2.1, 4.2.3, 4.3.1[C], 4.5.1[A], and [C], 4.10.1, 4.12.1, 4.13.3, and Figures 1 and 2.
16	09/20/2004	Clarified FGE reporting in Section 3.5.3 and 3.5.4; Clarification to Section 4.11.2 and 4.6.2; and editorial changes. Updates to Figures 1 and 2 in response to audit observation I04-10-O-03.
17	10/27/2004	Revised step 4.1.1 and 4.1.1[A] during SRS recertification audit.
18	02/09/2005	Revised based on the Implementation Plan for CCP Characterization Operations Improvements.

RECORD OF REVISION (Continued)

Revision Number	Date Approved	Description of Revision
19	03/14/2005	SRS request to reflect facility restrictions within the interface document.
20	11/02/2005	Revised steps 4.13.3 and 4.13.4 to be consistent with step 4.9.1 during CCP SRS Recertification Audit A-06-02.
21	03/31/2006	Revised to formalize process for safety basis interactions with new Section 4.16, Authorization Basis (AB) and Configuration Management. Added new Section 4.17, Procurement and clarified Subcontract Technical Representative (STR)/Facility Safety Representative (FSR) review on documents.
22	11/16/2006	The SRS notification threshold limit for PECi was revised to support a request by SRS. Revised to implement the Waste Isolation Pilot Plant Hazardous Waste Facility Permit requirements resulting from the Section 311/Remote-Handled (RH) Permit Modification Request (PMR).
23	01/31/2007	Revised to clarify Authorization Basis and Configuration Management requirements.
24	06/28/2007	Revised for the addition of Remote Handled Waste shipments. Also, added references to the host site notification procedure for characterization results that meet site safety basis notification limits.
25	05/20/2008	Revised to correspond to changes to the Statement of Work 1E8863, Revision 7, <i>Characterization of SRS TRU Waste</i> , incorporated editorial changes, updated the Subcontract Technical Representative (STR) review and concurrence procedure list, and incorporated Remote-Handled (RH) Dose-To-Curie (DTC) Characterization.
26	08/26/2008	Added Headspace Gas Summa [®] sampling and analysis procedures to facilitate sampling at Savannah River Site (SRS).
27	05/22/2009	Per CAR-SRS-0002-09, revised to redefine transportation roles and responsibilities, delineate a process for feedback from Savannah River Site (SRS) to Central Characterization Project (CCP) for procedural discrepancies, and add additional measuring and test equipment (M&TE) requirement.
28	12/29/2010	Minor revision to update references to the <i>Waste Isolation Pilot Plant Hazardous Waste Facility Permit</i> .

RECORD OF REVISION (Continued)

Revision Number	Date Approved	Description of Revision
29	07/05/2011	Revised to generalize the description of contact-handled (CH) Transportation Containers to allow use of TRUPACT-III. Added gas generation testing (GGT) procedures.
30	10/17/2011	Clarification to Sections 3.1.1, 3.3.5, 3.8.5, 4.1.2, 4.1.4, 4.11.1, 4.19.2, and 4.19.4. Removed procedure CCP-TP-508, <i>CCP RH Standard Real-Time Radiography Inspection Procedure</i> , from 4.16.5 and 4.16.7; and other editorial changes.
31	10/01/2012	Revised to incorporate Nuclear Waste Partnership (NWP) transition changes.
32	10/25/2012	In response to CAR-LANL-0003-12, revised to clarify roles associated with providing measuring and testing equipment (M&TE) Certificates of Calibration to Central Characterization Program (CCP).
33	06/19/2013	Revised to implement the Permit Modification Request Class 2 approved by New Mexico Environment Department (NMED) dated March 13, 2013.
34	08/29/2013	Revised to add NP 13-1, <i>Nuclear Waste Partnership LLC Quality Assurance Program Description</i> to reference page and any references to gas generation testing (GGT) procedures.
35	10/08/2014	Revised to provide the allowance to use either CCP-TP-035, <i>CCP Container Management</i> , or CCP-TP-068, <i>CCP Standardized Container Management</i> , for container management and removed CCP-QP-029, <i>CCP Corrective Action Management</i> and replaced with WP-15-GM1002, <i>Issues Management Processing WIPP Forms</i> .
36	02/17/2016	Revised format and content to better align with a standardized Central Characterization Program (CCP) interface document format and to address enhancements pertaining to the Acceptable Knowledge (AK) process.

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1.0 PURPOSE

This document establishes the interfaces between the Central Characterization Program (CCP) and the Savannah River Site (SRS). This interface Document subordinate to the upper-tier agreement, defines the interfaces between CCP and SRS and details how the services described in the Statement of Work (SOW) are executed. The CCP is operated by Nuclear Waste Partnership (NWP) at the direction of the U.S. Department of Energy (DOE) Carlsbad Field Office (CBFO).

It is not intended to be used in lieu of a task-specific subcontract. Specifically, this document identifies CCP and SRS/generator responsibilities for implementing requirements and deliverables.

1.1 Background

The SRS is a transuranic (TRU) waste generator site in the DOE complex. The Solid Waste Management (SWM) department is the centralized facility at SRS for processing, characterization and shipping TRU waste for disposal. The DOE Savannah River Office (SRO) manages all activities at the SRS, including waste management, for the DOE.

The DOE CBFO has deployed the CCP to the SRS to characterize, certify, and ship contact-handled (CH) and remote-handled (RH) TRU waste for disposal at the Waste Isolation Pilot Plant (WIPP). CBFO has audited and certified CCP to perform these activities at the SRS.

1.2 Scope

This document applies to the CCP, the SRS, and generators whose waste is characterized and certified by CCP for the SRS. "Generator" may refer to the SWM or it may refer to the facility that originally generated and/or treated and packaged the waste. This document addresses CCP and SRS/generator responsibilities associated with TRU waste characterization including interface requirements for the following areas:

- Facilities/equipment for TRU waste characterization and shipping
- Safety Programs
- Training and qualifications
- Container Management
- Deficiencies and nonconformances
- Nondestructive examination (NDE) including visual examination (VE) and real-time radiography (RTR)

- Nondestructive assay (NDA)
- Radiological Characterization (RC) including dose-to-curie (DTC) and sampling and analysis
- Chemical Sampling Analysis
- Flammable Gas Analysis (FGA) for transportation requirements
- Performance Demonstration Program (PDP)
- Source control
- Acceptable Knowledge (AK)
- Data validation and reconciliation
- Measuring and Test Equipment (M&TE)
- Work Standards
- Quality Assurance (QA)
- Project Control
- Procedures
- Document Transmittals
- Procurements
- Records
- TRU Waste Certification and WIPP Waste Information System/Waste Data System (WWIS/WDS) data entry
- Transportation
- Configuration Management

These services will be performed with CCP and/or SRS equipment with appropriate DOE/CBFO-certified procedures. The SRS may augment CCP characterization efforts as requested by CCP. Augmented services provided by the SRS shall comply with applicable CCP procedures.

The SRS/generator services covered by this document include programs for Radiological Controls, Occupational Safety and Health, Industrial

Hygiene, Nuclear Safety/Authorization Basis (AB), Emergency Management and Environment/Hazardous Waste Management.

SRS maintains ownership of the waste and the responsibility for its disposal. This responsibility includes additional chemical sampling and analysis deemed necessary by the WIPP Co-Permittees. SRS will also be responsible for reporting conditions or concerns that have or may have safety, health, QA, security, operational, or environmental implications.

1.3 Site information

SRS is located in South Carolina. The U.S. Environmental Protection Agency (EPA) Facility Number is SC1890008989.

2.0 REQUIREMENTS

All services provided by CCP will comply with DOE/WIPP-02-3122, *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant* (WIPP-WAC), the *Waste Isolation Pilot Plant Hazardous Waste Facility Permit, Waste Analysis Plan* (WIPP-WAP), DOE/WIPP-02-3214, *Remote-Handled TRU Waste Characterization Program Implementation Plan* (WCPIP) and Certificates of Compliance (COCs) for Type B Packages issued by the Nuclear Regulatory Commission (NRC). DOE/CBFO-94-1012, *U.S Department of Energy Carlsbad Field Office Quality Assurance Program Document* (QAPD).

Requirement from these upper-tier documents flow down to the following program documents:

- SRS-NWP Contract
- Statement of Work, 1E8863, *Characterization of SRS TRU Waste*
- CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- CCP-PO-002, *CCP Transuranic Waste Certification Plan*
- CCP-PO-003, *CCP Transuranic Authorized Methods For Payload Control (CCP CH-TRAMPAC)*
- CCP-PO-005, *CCP Conduct of Operations*
- CCP-PO-026, *CCP Configuration Management*
- CCP-PO-050, *CCP TRUPACT-III TRU Waste Authorized Methods For Payload Control (CCP TRUPACT-III TRAMPAC)*
- CCP-PO-505, *CCP Remote-Handled Transuranic Waste Authorized Methods for Payload Control (CCP RH-TRAMPAC)*
- DOE/WIPP 02-3183, *CH Packaging Program Guidance*
- DOE/WIPP-02-3283, *RH Packaging Program Guidance*
- DOE/WIPP-06-3345, *Waste Isolation Pilot Plan Flammable Gas Analysis*
- WP 13-1, *Nuclear Waste Partnership LLC Quality Assurance Program Description*
- SRNS Employee Safety Manual 8Q

- SRNS Radiological Control Manual 5Q

A more comprehensive list of documents included in the CCP System of Controls is provided in Section 4.21.

3.0 RESPONSIBILITIES

CCP has primary responsibility for performing TRU waste characterization, certification, and transportation activities in accordance with governing requirements described herein. CCP services include compilation, reporting, and confirmation of AK, NDE, NDA, radiological control, VE, FGA for waste certification, WWIS/WDS data entry, and transportation activities.

The SRS Management and Operating (M&O) Contractors' responsibilities are limited to the CCP activities described herein being performed on their behalf and for performing TRU waste management activities in accordance with SRS/generator documents provided by CCP.

3.1 Operations

3.1.1 CCP performs the following operation activities:

- [A] Obtains SRS management daily release/approval prior to performing CCP operations.
- [B] Performs system start-up and calibration of characterization equipment.
- [C] Operates CCP or SRS equipment in accordance with approved procedures including CCP-PO-005, *CCP Conduct of Operations*.
- [D] Performs safety walk-downs prior to operations.
- [E] Responds to and resolves assessment and surveillance findings for CCP activities.
- [F] Ensures CCP and SRS personnel are trained and qualified in accordance with requirements specified in Section 4.1.
- [G] Demonstrates CCP operations during DOE/CBFO certification/recertification audits.
- [H] Performs Management Assessments and QA Surveillances on: 1) CCP Operations and 2) SRS waste management activities referenced in active CCP AK Summaries/Waste Stream Profiles.
- [I] Performs inspection of containers provided by the SRS to ensure they are safe and ready for CCP characterization.

3.2 The SRS provides the following support for CCP activities:

- [A] Radiological controls as needed to support characterization activities, including:
- Radiological postings.
 - Radiation protection surveys, both initial and routine, on characterization equipment and provide an approved survey report to the CCP Vendor Project Manager (VPM).
 - Personnel dosimetry.
 - Dose assessments and dosimetry reports.
 - Calibrated and source checked survey instrumentation.
 - Radiological Work Permits (RWP) to support CCP activities.
 - Bioassay sample collection, evaluation, and reporting, in accordance with 10CFR835.402, *Individual Monitoring*, if applicable. The CCP SRS Project Manager (PM) or CCP VPM will be notified of any positive bioassay results as soon as is reasonably possible.
 - Radiological source controls.
- [B] Provides adequate facilities for the safe performance of characterization and transportation activities.
- [C] Provides site-specific training, as needed, to ensure safe operations.
- [D] Provides Industrial Safety and Health (IS&H) support.
- [E] Provides Fire Protection and Emergency Management support.
- [F] Provides AB oversight, including Unreviewed Safety Question (USQ) evaluations.
- [G] Provides environmental impact oversight and support.
- [H] Provides on-site container transportation.

- [I] Provides container handling, inventory control, and storage location tracking.
- [J] Provides personnel to be trained and qualified under the CCP program as needed to support CCP activities such as VE, RC, DTC, etc.
- [K] Coordinates and obtains document classification reviews as required to allow the public release of documents such as the AK Summary Report.
- [L] Provides calibrated M&TE for use in characterization or obtains calibrated service for CCP provided M&TE.
- [M] Provides waste packaging materials and other equipment/materials purchased and inspected in accordance with the Qualified Supplier List (QSL) approved program.
- [N] Provides hazardous waste manifesting, bill of lading, and notifications for transportation.
- [O] Provides qualified personnel to support maintenance of CCP equipment.
- [P] Responds to and resolves CCP management assessment and CCP QA surveillance findings related to SRS waste management activities.

3.3 CCP SRS Project Manager (PM)

- 3.3.1 Functions as CCP's primary interface and point-of-contact (POC) between CCP and the Site Management Representative (SMR)/Designee for waste characterization and certification activities.
- 3.3.2 Unless otherwise assigned herein, ensures documents listed in step 4.21 are provided to the SRS.
- 3.3.3 Ensures sufficient characterization equipment and personnel are available to perform the required characterization activities at the SRS.
- 3.3.4 Provides status on CCP characterization operations to the SMR/Designee.

- 3.3.5 Works in conjunction with SMR/Designee to establish and maintain reasonable and appropriate throughput of waste containers.
 - 3.3.6 Ensures CCP management and CBFO are informed of safety, compliance, or production issues impacting CCP SRS activities.
 - 3.3.7 Ensures the CCP Management Assessment program is implemented for CCP Operations and SRS waste management activities related to active CCP AK Summaries/Waste Stream Profiles.
 - 3.3.8 Work with the SMR to schedule and ensure access to areas to perform visual observations of selected waste streams.
- 3.4 CCP Site Project Manager (SPM)
- 3.4.1 Functions as CCP's primary WIPP Waste Acceptance Criteria (WAC) and Waste Analysis Plan (WAP) subject matter expert (SME) and compliance authority.
 - 3.4.2 Ensures the AK Summary Report for TRU waste characterized by the CCP is provided to the SMR/Designee.
 - 3.4.3 Ensures Waste Stream Profile Forms (WSPFs) are reviewed and approved.
 - 3.4.4 Ensures that project level verification and validation of batch data reports (BDRs) are completed.
 - 3.4.5 Provides evidence to the SMR/Designee of PDP participation and successful completion.
 - 3.4.6 Perform visual observation of waste generators performing activities that change the physical and/or chemical properties of waste during or prior to the waste being packaged for CCP characterization for waste streams identified by the SMR.
- 3.5 Acceptable Knowledge Expert (AKE)
- 3.5.1 Collects, compiles reviews, and documents AK in accordance with CCP-TP-005, *CCP Acceptable Knowledge Documentation*.
 - 3.5.2 Ensures CCP has obtained necessary container information prior to characterization.

3.6 CCP Quality Assurance (QA) Engineer

- 3.6.1 Functions as NWP's primary interface and POC for QA matters between CCP, SRS, DOE/SRS, and DOE/CBFO.
- 3.6.2 Validates the Nonconformance Reports (NCRs) generated by CCP personnel performing characterization activities at the SRS.
- 3.6.3 Provides copies of NCRs for information to the SRS SMR/Designee as requested.
- 3.6.4 Ensures performance of receipt inspection in accordance with CCP-QP-026, *CCP Inspection Control*, for items and services procured by CCP.
- 3.6.5 Provides the SMR/Designee with a copy of the semi-annual trending summary reports in accordance with CCP-QP-014, *CCP Quality Assurance Trend Analysis and Reporting*.

3.7 SRS Site Management Representative (SMR) (SRS Management Position)

- 3.7.1 Functions as the SRS primary interface and POC between the SRS and CCP.
- 3.7.2 Ensures cognizant SRS and generator POCs/SMEs are identified and available as necessary to support the review of CCP documents.
- 3.7.3 Coordinates review, provides comments, and approves comment resolutions on documents listed in Section 4.21.4. This includes facilitating generator document review and comment resolution as necessary. The review and comment resolution will be documented in accordance with CCP-QP-010, *CCP Document Preparation, Approval, and Control*.
- 3.7.4 Facilitates workflow between CCP and SRS TRU waste generators as necessary to allow CCP to fulfill program requirements. This includes CCP access to generator processes and documentation as necessary.
- 3.7.5 Ensures unreviewed safety question determination (USQDs) needed for proposed modifications to CCP hardware, software, or procedures are prepared and approved by qualified SRS personnel prior to CCP implementing the proposed modification.

- 3.7.6 Ensures CCP is provided appropriate facilities, construction services, utilities, phone services, network services and office services necessary to perform their activities at the SRS.
- 3.7.7 Notifies the CCP PM and VPM of any Safety Basis changes to action levels that will impact CCP initiated notifications.
- 3.7.8 Ensures CCP personnel have access to facilities to observe operations and interview personnel associated with generation, packaging, repackaging, or treatment of TRU waste.
- 3.7.9 Ensures site support (e.g., Radiological, IS&H, waste handling, etc.) is available for waste characterization.
- 3.7.10 Ensures documentation of completed SRS-specific training is delivered to CCP Training
- 3.7.11 Provides local personnel to support characterization operations such as VE.
- 3.7.12 Provides personnel to support the CCP Acceptable Knowledge Experts (AKE) in the collection of documents.
- 3.7.13 Works in conjunction with the CCP PM and VPM to maintain reasonable and appropriate throughput of waste containers.
- 3.7.14 Ensures that periodic QA surveillances of CCP operations by the SRS are conducted and reported to CCP.
- 3.7.15 Provides documented information on containers that have been modified since the original container closure and/or AK has been completed for the containers (e.g., remediation of containers or venting).
- 3.7.16 Provides adequate record storage facilities and access to the records for the CCP AK source documents.
- 3.7.17 Provides local transportation personnel to support loading and transportation activities.
- 3.7.18 Ensures CCP VPM receives quarterly dosimetry and bioassay results on radiation worker-trained CCP personnel.
- 3.7.19 Ensures the provisions of WSRC 5Q, *Radiological Control Manual*, are implemented and compliance is maintained.

3.7.20 Ensures that the SRS AB represents the CCP activities and equipment correctly.

3.8 SRS First Line Managers

3.8.1 Confirms "In Process" waste containers are appropriately staged for the CCP characterization process.

3.8.2 Confirms "shippable" waste containers are appropriately staged for loading activities.

3.9 CCP Vendor Project Manager (VPM)

NOTE

VPM will assume overall CCP responsibility for characterization and loading activities if Mobile Loading Unit Team Lead is not present at the SRS. If present, the Mobile Loading Unit Team Lead will assist VPM with duties associated with loading and shipping.

3.9.1 Ensures CCP and SRS personnel are trained and qualified to perform WIPP-compliant TRU waste characterization activities at the SRS prior to commencement of work activities.

3.9.2 Obtains SRS management daily release/approval prior to performing CCP operations.

3.9.3 Monitors the List of Qualified Individuals (LOQI) at the beginning of the shift to confirm that only qualified personnel perform waste characterization activities.

3.9.4 Works in conjunction with CCP PM and SRS SMR/Designee to maintain reasonable and appropriate throughput of waste containers.

3.9.5 Provides daily pre-operations briefing to CCP personnel. The daily pre-operations briefing may be combined with the SRS pre-operations briefing as agreed between the CCP SRS PM and SRS operations management.

3.9.6 Ensures applicable manufacturers Material Safety Data Sheets (MSDSs)/Safety Data Sheets for products brought to the facility by the CCP are provided, maintained, and available to support operations and meet the requirements of the SRS chemicals management program.

- 3.9.7 Provides oversight of CCP field operations to ensure safe, compliant and efficient operations.
- 3.9.8 Notifies the CCP SRS PM and the SMR/Operations Manager of any abnormal events associated with safe and compliant operation of CCP characterization activities for reporting purposes.
- 3.9.9 Ensures CCP notifications required to comply with the SRS Safety Basis are incorporated into appropriate CCP work documents and appropriate CCP personnel (including offsite personnel such as Independent Technical Reviewers [ITRs], NDA Expert Analyst [EA], and SPMs) are aware of their responsibility to make such notifications.
- 3.9.10 Obtains SMR review and concurrence prior to issuance/approval of CCP Operator Aids or Standing Orders that could affect changes to equipment operation or configuration.
- 3.9.11 Attends daily SRS Plan of the Day meeting where safety issues and activities for the day are discussed, facility status is reviewed, and radiological changes are identified.
- 3.9.12 Reviews SRS quarterly dosimetry and bioassay results on radiation worker-trained CCP personnel and ensures the applicable results are provided to the individual CCP employee.
- 3.9.13 Ensures CCP personnel comply with SRS integrated work management, environmental, safety, and security requirements.
- 3.9.14 Controls access of CCP personnel including its subcontractors to the field. Requests site access for visitors.
- 3.9.15 Functions as CCP's primary interface and POC between CCP and SRS for field operations.
- 3.9.16 Works with CCP Configuration Management group to ensure that CCP-provided equipment is maintained under a CCP-approved Configuration Management Program.
- 3.9.17 Ensures that new additions to and/or modifications made to CCP-provided facilities and/or equipment are submitted to the SMR as soon as practicable and approvals are received prior to implementation.
- 3.10 CCP Waste Certification Official (WCO)
 - 3.10.1 Obtain a copy of the approved WSPF for containers to be certified.

3.10.2 Certifies container(s) meet requirements for disposal in the WIPP repository.

3.10.3 Submits Certified container(s) to WDS.

3.11 CCP Transportation Certification Official (TCO) or Mobile Loading Unit Team Lead

3.11.1 Ensures CCP Transportation personnel are trained and qualified to perform WIPP-compliant CH and/or RH TRU waste packaging and loading operations at the SRS prior to starting work activities and are listed on the current LOQI.

3.11.2 Provides oversight to CCP Transportation personnel for payload and Overpack assembly and loading.

3.11.3 Builds payloads from certified containers and Overpacks provided by Waste Certification Officials (WCOs) in WWIS/WDS.

3.11.4 Certifies payloads for transportation to and disposal at WIPP.

3.11.5 Builds shipments from approved payloads in WWIS/WDS.

4.0 INTERFACE

4.1 Training and Qualification

- 4.1.1 CCP personnel or SRS personnel who perform work under CCP procedures will be trained and qualified to WIPP requirements in accordance with CCP-QP-002, *CCP Training and Qualification Plan* and/or CCP-QP-040, *Support Training*, as applicable.
- 4.1.2 CCP and SRS personnel assigned to the field operations must complete the SRS-specific training. The SMR will ensure the SRS-specific training requirements are sent to CCP Training.
- 4.1.3 Both the CCP training and SRS-specific training must be complete prior to the individual being assigned to perform independent work at the SRS.
- 4.1.4 Administrative work, such as BDR reviews requiring no access to the characterization activities or processes at the SRS, may be completed by personnel who have not completed the required SRS-specific training. Personnel who have not completed SRS-specific training will not be allowed unescorted access to the characterization activities.
- 4.1.5 A LOQI will be monitored by the CCP VPM to confirm CCP and SRS personnel assigned to perform work are qualified.
- 4.1.6 To ensure that notifications are made by offsite review personnel (e.g., ITR, NDA EA, SPM) for SRS safety basis notification levels, the SRS action levels will be included in a CCP Standing Order. Any revisions to the SRS action levels will be issued in a revision of the CCP Standing Order.

4.2 Routine Operations

4.2.1 General Conditions of Operation

- [A] The SRS has the overall responsibility for the management of the nuclear materials and operations of the nuclear facilities.
- [B] Work performed by CCP personnel (including subcontractors) will be in compliance with SRS and CCP requirements.
- [C] CCP personnel will STOP WORK (or Pause), as appropriate

and will notify SRS supervision and the CCP VPM in the event of a safety concern (e.g., TSR violation, PAAA violation, breached container, emergency, injury, potential compliance violation).

[D] CCP personnel will follow CCP-PO-005, *CCP Conduct of Operations*, for reporting employee concerns or abnormal conditions.

[E] Authorization Basis (AB) and Configuration Management

[E.1] The SRS has primary responsibility to ensure that CCP equipment and processes have been appropriately considered within the DOE-approved SRS DSA.

[E.2] The SRS shall provide to CCP, SRS generated AB documentation concerning CCP related activities and equipment, including USQDs, for CCP's review.

[E.3] CCP has primary responsibility to control operations and CCP-provided equipment configurations to ensure compliance with CCP and SRS procedures that protect the personnel, the public, and the environment.

[E.4] For CCP provided equipment, CCP will provide the documentation necessary for the SRS to perform the evaluation against its safety analysis. This documentation may include HSPs, hazard assessments, system descriptions, equipment drawings, or other information deemed necessary through mutual agreement between CCP and the SRS.

[E.5] For SRS-provided equipment, CCP will review operational and AB documentation, including USQDs, prior to assuming operation of the equipment to ensure the protection of personnel, the public, and the environment.

[E.6] All changes to equipment operated by CCP will be controlled by the SRS Work Control Program to ensure appropriate AB evaluations are conducted, and associated controls established.

[E.7] The SRS will submit all changes to AB requirements that affect CCP operations to CCP prior to implementation.

4.2.2 CCP personnel will work under the SRS requirements for hazardous energy control.

4.2.3 CCP personnel will perform work in accordance with CCP-approved procedures for waste characterization and certification activities and SRS-approved work packages and procedures for non-waste characterization activities (e.g., equipment repairs). Both CCP-approved and SRS-approved processes will comply with SRS requirements.

4.3 Employee Monitoring

4.3.1 CCP personnel will participate in the SRS Bioassay program and will submit bioassay samples if required by the SRS Radiation Protection Program to establish a baseline for activities at the SRS.

4.3.2 The CCP SRS PM or CCP VPM will be notified if any bioassay sample provided by CCP personnel indicates that an uptake of any radioactive isotopes may have occurred as soon as is reasonably possible.

4.4 Filter Inspection/Filter Changeout

4.4.1 CCP personnel will inspect the filters on containers as part of the container acceptance and will document whether the filter is a WIPP-approved filter. This information will be transmitted to the CCP VPM.

4.4.2 If filter change out is performed on containers that do not require repackaging. This operation will be documented and the information transmitted to the CCP VPM.

4.5 Container Management

4.5.1 The SRS provides container movement and storage compliant with the Documented Safety Analysis (DSA).

4.5.2 The SRS provides the dose rate and surface contamination information necessary to certify TRU waste containers for disposal.

- 4.5.3 SRS is responsible for providing documented information to the SPM on any modification to the container after original container closure and/or AK has been completed.
- 4.5.4 The SPM will review the documented information of modified containers and will notify the SMR when the containers are approved for entrance into the CCP characterization process.
- 4.5.5 CCP performs container management throughout the CCP characterization process in accordance with CCP-TP-068, *CCP Standardized Container Management*, and CCP-TP-509, *CCP Remote-Handled Transuranic Container Tracking*.
- 4.5.6 CCP AK personnel will maintain a list of characterization-eligible containers from each waste stream identified. When repackaging or VE of a waste container is required, the following container identification (ID) scheme will be followed as applicable.
- [A] When the waste from one TRU input container results in one TRU output container, the container ID from the Input container is to be used with the addition of an "A" suffix as the ID number on the output container (e.g., input container is SR10C0057, the output container will be labeled as SR10C0057A). This scheme is also to be applied to re-label waste containers that do not require repackaging or VE.
 - [B] When the waste from one TRU input container results in the creation of two or more TRU output containers, a standard convention of adding a sequential single or, if required, double letter suffix to the input container's ID number is used to label the TRU output containers produced (e.g., input container is SR10C0057, the first output container is SR10C0057A, and the second output container is SR10C0057B).
 - [C] When the waste from two or more TRU input containers from the same waste stream are combined into one output container, the container ID number from the first input container is used with the addition of an "A" suffix as the ID number on the TRU output container (e.g., SR10C0057 and SR10C0059 are combined into one output container. SR10C0059 was the first drum repackaged. The output container is SR10C0059A).
 - [D] When prohibited items are segregated and placed into a separate output container from the bulk of the waste, a new

container ID is applied to the segregated waste container. Prohibited items from more than one input waste container may be placed into the segregated waste container provided the input containers are from the same waste stream.

- [E] CCP AK personnel are to be notified as soon as is practical of waste container ID number changes resulting from the actions in steps 4.5.6[A] through [D].

4.6 Deficiencies and Nonconformances

4.6.1 CCP Identified Deficiencies and Nonconformances

NOTE

The NWP QA Engineer will confirm appropriate closure of the deficiencies that are resolved by CCP.

- [A] If personnel identify a nonconforming condition associated with a waste container during the CCP characterization or certification process, CCP personnel will initiate an NCR in accordance with CCP-QP-005, *CCP TRU Nonconforming Item Reporting and Control*.
- [B] If the deficiency or nonconformance is an issue that will be resolved by CCP, CCP will provide notification (e.g., verbal, or email as requested by the SRS) to the SRS SMR/Designee. The SRS SMR/Designee may request any supporting documentation needed by the SRS. CCP will ensure appropriate closure of the deficiency. A copy of any CCP NCR related to DOE TRU waste at the SRS will be provided to the SRS SMR/Designee upon request.
- [C] **IF** the deficiency or nonconformance cannot be resolved by the CCP (e.g., does not meet TRU WAC), **THEN** the specific container will be returned with all required documentation to the SRS for disposition. Once the specific container(s) have been returned to the SRS, the NCR will remain open if the container will be remediated and returned to CCP or will be closed if the condition is such that the container will not be returned to CCP (e.g., NDA indicates the container is less than 100 nanocuries per gram [nCi/g] TRU alpha activity concentration). CCP will not apply CCP HOLD TAGS to those containers which are returned as permanent rejects from CCP. Instead, CCP will affix a

physical indicator (sticker or tag) that the container is returned and not certifiable for shipment to WIPP.

4.6.2 SRS-Identified Deficiencies and Nonconformances

- [A] If SRS personnel identify a non-conformant condition during container movement or handling (e.g., missing container identification tag, duplicate container number), SRS personnel will initiate nonconformance documentation in accordance with the SRS QA Program.
- [B] The SMR will ensure a copy of any NCR affecting the CCP is provided to the SPM.
- [C] The SMR will notify the CCP SRS PM and VPM of any procedure deficiencies, identified by SRS personnel, which relate to characterization activities.
- [D] The SMR will notify the Transportation Certification Official (TCO) or Mobile Loading Unit Team Lead, and VPM of any procedure deficiencies, identified by SRS personnel, which relate to payload assembly or loading activities.

4.7 Visual Examination (VE)

- 4.7.1 CCP will conduct VE Operations in accordance with CCP-TP-113, *CCP Standard Contact-Handled Waste Visual Examination*, as needed, or CCP-TP-500, *CCP Remote-Handled Waste Visual Examination* using a facility provided by the SRS.
- 4.7.2 Qualified SRS personnel will manipulate waste as requested by the CCP VE operator(s) during the VE process.
- 4.7.3 VE operators will make notification to the SRS as necessary to comply with the SRS Safety Basis. These Notifications will be made to SRS management and the VPM.
- 4.7.4 The SRS will perform all maintenance and repairs to the VE facility.
- 4.7.5 The SRS will provide personnel to qualify and perform VE in accordance with CCP-TP-113 or CCP-TP-500, if applicable.

4.8 Real-Time Radiography (RTR)

- 4.8.1 CCP will perform RTR using a CCP or SRS provided unit(s). Containers rejected by RTR will be dispositioned consistent with the requirements of Section 4.6.
- 4.8.2 CCP may perform screening services to provide information on prohibited items for use in SRS repackaging operations. CCP-TP-066, *CCP Radiography Screening Procedure for Prohibited Items*, will be used for RTR screening operations. The report provided from CCP-TP-066 will include any prohibited items or conditions, including all liquids identified, during the scan.
- 4.8.3 If RTR results meet the identified SRS safety basis notification criteria, CCP RTR personnel will immediately make notifications.
- 4.8.4 The SRS is to support the CCP VPM with the construction of NDE capability demonstration drums as required.
- 4.8.5 If a later review (e.g., ITR, SPM) meets a SRS safety basis notification criteria, notifications will immediately be made.

4.9 Nondestructive Assay (NDA)

- 4.9.1 The SRS will provide support for CCP participation in the NDA PDP. This support includes maintaining trained PDP coordinators, preparation of the test containers, delivery of the containers to the CCP NDA equipment, and responsibility for PDP source control. The SRS support will be coordinated by the SMR.
- 4.9.2 If NDA results meet the identified SRS safety basis notification criteria, CCP NDA personnel will immediately make notifications. If notification levels are reached, NDA EA assay results will be performed and the resulting conclusions will be communicated both verbally and in writing to the SRS management, SPM, and the CCP VPM within 24 hours of the first normal work day following the assay.
- 4.9.3 If a later review (e.g., ITR, SPM) meets a SRS safety basis notification criteria, notifications will immediately be made.

4.9.4 CCP will perform NDA using a CCP or SRS provided unit or multiple units. Containers rejected by NDA will be dispositioned consistent with the requirements of Section 4.6.

4.10 Radiological Characterization (RC) (Dose-to-Curie [DTC])

4.10.1 The SRS will provide technical support for radiological characterization efforts based on the use of AK for stored RH TRU waste or sampling and analysis.

4.10.2 CCP will provide qualified personnel, including SRS personnel, to perform radiological characterization activities.

4.10.3 If DTC results meet the identified SRS safety basis notification criteria, CCP DTC personnel will immediately make notifications as required. If notification levels are reached, DTC results will be performed and the resulting conclusions will be communicated both verbally and in writing to the SRS management, and the CCP VPM within 24 hours of the first normal work day following the assay.

4.10.4 If a later review (e.g., ITR, SPM) meets a SRS safety basis notification criteria, notifications will immediately be made.

4.10.5 The SRS will provide support for the CCP for performing calibration of RC instrumentation. This support includes delivery of surrogate drums and source control as needed.

4.11 Chemical Waste Sampling and Analysis Methods

4.11.1 If the Permittees determine that additional characterization is necessary using chemical sampling and analysis, the Permittees shall direct SRS to provide the Permittees with the following documentation:

- Sampling and analysis plan
- EPA SW-846 test method(s), or functionally equivalent test method(s), to be used
- Identification of the laboratory(ies) that will be performing the test(s)

4.11.2 Upon the Permittees written approval of the sampling and analysis plan, SRS shall implement the sampling and analysis plan.

4.12 Flammable Gas Analysis (FGA)

4.12.1 FGA is for transportation only and will be performed using approved DOE/WIPP procedures by personnel trained under the CCP Qualification Program.

4.12.2 FGA operators will make notifications to the SRS as necessary to comply with the SRS Safety Basis. These Notifications will be made to the SRS management and the VPM.

4.13 Source Control

4.13.1 CCP will provide a list of reference sources required for calibration of NDA systems used by CCP.

4.13.2 The SRS will be responsible for all reference sources. Responsibilities consist of inventory control, storage, shipment, and usage. The SRS will provide CCP the number of sources, location, isotopic distribution with activity levels, and the names of the custodian and authorized users, as required.

4.13.3 The SRS will be responsible for providing radiological control support associated with the reference sources. This support consists of maintaining the radioactive materials area postings, periodic surveys and performing a semi-annual leak check on the sources.

4.13.4 SRS personnel will deliver the sources to qualified CCP personnel for loading into the matrix drums. CCP personnel will be trained as users of the sources to the SRS procedures.

4.13.5 The SRS will provide support for the CCP participation in the PDP. This support includes maintaining trained PDP coordinators, preparation of the test drums, delivery and pick-up of the drums to/from the CCP NDA equipment, and responsibility for PDP source control. SRS support will be coordinated by the SRS SMR/Designee.

4.13.6 Radioactive sealed sources, whether owned by CCP or SRS, will be controlled under applicable requirements of the SRS Radiological Control Program.

4.13.7 SRS will provide support for leak testing, labeling, and inventory control for sealed sources owned and used by CCP NDA processes.

4.13.8 SRS may provide radioactive sealed sources to the CCP NDA processes when required for use in meeting NDA quality assurance objectives.

4.13.9 CCP will submit a written request to SRS before bringing any sealed radioactive source to SRS. The request will be accompanied by a copy of the applicable Radioactive Materials License. SRS will provide written permission to CCP to bring sealed radioactive sources to SRS upon receipt and approval of CCP's written request.

4.13.10 CCP will provide day-to-day control of the sources it owns and uses in accordance with requirements in the SRS Radiological Control Program.

4.14 Acceptable Knowledge (AK)

[A] CCP AK Personnel collect, compile, and review AK documentation in accordance with CCP-TP-005 and or DOE/WIPP-02-3214.

[B] SRS/generator personnel assist CCP AK personnel with AK collection.

[C] CCP AK personnel and SRS/generator personnel develop an Interface Waste Management Document List (IWMDL) for each waste stream. Each IWMDL will include facility processes, plans, and procedures that control the following waste management activities as applicable:

- Waste generating activities
- Waste retrieval activities
- Waste packaging/repackaging
- Waste treatment/processing (e.g., neutralization, deactivation, and solidification/immobilization)
- Waste inspection, testing, and characterization
- Decontamination and Decommissioning (D&D) operations

- Any other activity that changes the physical, chemical, or radiological properties of waste to be characterized by CCP
- [D] The SMR ensures POCs/SMEs are assigned to review the new or revised IWMDLs for accuracy and completeness and provide written comments as appropriate.
- [E] The AKE and SRS Generator/Cognizant Personnel (CP) resolve comments and questions.
- [F] SPM provides SMR with the results of Acceptable Knowledge Assessments (AKA).
- [G] SMR distributes results of the AKA to designated CPs for review and comment.
- [H] SMR concurs with final AKA in writing.
- [I] CCP submits new or revised AK Summary Reports to the SMR/Designee for review and concurrence.
- [J] The SMR ensures CP review the AK Summary Report for accuracy and completeness providing comments in accordance with CCP-QP-010.
- [K] A SRS/generator CP attends a briefing on new or revised AK Summary Reports.
- [L] SRS/generator CP notifies the SPM and AKE in writing of any new revised waste management activities that would necessitate a change to an IWMDL.
- [M] The SRS will not provide any waste containers to CCP for characterization until the AKE has received that latest version of the work document (including field changes, other immediate procedure changes, Timely Orders/Standing Orders, Operator Aids, etc.) used to generate, package, and/or repackage the container.
- [N] The work document(s) provided to the AKE will contain the following information at a minimum:
- Identification (including revision) of the work document(s) used to generate the container

- Type of activity (e.g., packaging/repackaging only, remediation, treatment)
- Amount (estimated) and type (if known) of liquids
- Type and quantity (estimated) of absorbents used
- Type and quantity (estimated) of neutralization agents used
- Any unexpected conditions or reactions encountered
- General description of waste items
- Packaging configuration (e.g., 55-gallon drum with 20 mil liner bag)
- Filter data including model and quantity used
- Parent container identification

[O] At a minimum of once per calendar quarter, SRS/generator management will review current IWMDLs and provide written assurance to the CCP SPM that the list is up to date **OR** provide necessary documentation to revise the list.

4.15 Project Office Certification Activities

4.15.1 CCP will prepare WSPFs for the subject SRS waste in accordance with CCP-TP-002, *CCP Reconciliation of DQOs and Reporting Characterization Data*.

4.15.2 CCP will transmit characterization and certification data using the WWIS/WDS and CCP procedures CCP-TP-030, *CCP CH TRU Waste Certification and WWIS/WDS Data Entry* or CCP-TP-530, *CCP RH TRU Waste Certification and WWIS/WDS Data Entry*.

4.15.3 CCP shall submit WSPFs to the SRS for information before submittal to CBFO. The SRS will provide written concurrence on the basis of continued compliance with procedures and programs, and CBFO-certification of the CCP program.

4.15.4 The CCP WCO will document and certify that all TRU waste payload containers meet the requirements of the WAC, and submit the data to the WWIS/WDS for approval.

4.16 Transportation – Contact-Handled (CH) Waste/Remote-Handled (RH) Waste

4.16.1 CH Waste

- [A] SRS will provide and maintain CH Package Loading facilities.
- [B] CCP Transportation will provide technical resources, TCOs, and qualified personnel to perform the transportation certification, preparation of the shipment, and loading of the waste for shipment.
- [C] SRS will provide the equipment and trained personnel required to handle waste containers for payload assembly and loading operations.
- [D] CCP Transportation will provide trained personnel required to handle waste containers for payload assembly and loading operations.
- [E] SRS will provide manifesting, marking, labeling, and placarding of the shipments in accordance with 40 Code of Federal Regulations (CFR) and 49 CFR requirements and in accordance with site-specific procedures.
- [F] CCP Transportation will provide documentation to the SMR certifying the waste for shipment according to CCP procedures.
- [G] SRS will coordinate the shipment, including providing prerequisite surveys.

4.16.2 RH Waste

- [A] SRS will provide and maintain RH TRU 72-B transportation cask loading facilities.
- [B] CCP Transportation will provide technical resources and personnel to perform the transportation certification, preparation of the shipment, and loading of the waste for shipment.
- [C] SRS will provide the equipment and trained personnel required to handle waste containers for payload assembly and RH TRU 72-B loading operations.

- [D] CCP Transportation will provide trained personnel required to handle waste containers for payload assembly and cask loading operations.
- [E] SRS will provide manifesting, marking, labeling, and placarding of the shipments in accordance with 40 CFR and 49 CFR requirements and in accordance with site-specific procedures.
- [F] CCP Transportation will provide documentation to the SMR certifying the waste for shipment according to CCP procedures.
- [G] SRS will coordinate the shipment, including providing prerequisite surveys.

4.17 Quality Assurance (QA)

- 4.17.1 All quality affecting work performed in the completion of this waste characterization, certification, and certification transportation scope will be in compliance with applicable DOE/CBFO-certified CCP procedures.
- 4.17.2 CCP will conduct periodic QA surveillance to assess compliance with applicable WIPP requirements.
- 4.17.3 SRS will conduct surveillances to assess compliance with applicable procedures.

4.18 Measuring and Test Equipment (M&TE)

- 4.18.1 M&TE used by the CCP will be controlled and maintained in accordance with CCP-QP-016, *CCP Control of Measuring and Testing Equipment*.
- 4.18.2 The SRS will make available National Institute for Standards and Technology (NIST)-traceable calibration services for M&TE to the CCP. The SRS will maintain records on M&TE calibration in accordance with the Records Inventory and Disposition Schedule. Copies of the Certificates of Calibration will be made available to the CCP VPM and CCP M&TE Custodian prior to issuing M&TE to CCP for use.
- 4.18.3 For SRS M&TE furnished for use in the CCP program, the SRS SMR or Designee will provide notification to the CCP M&TE Custodian when M&TE are added, deleted, found out-of-tolerance /defective, or failed calibration.

4.18.4 When notified of an as found, failed calibration CCP will perform an extent of condition review to assess its impact on any of the characterization processes, initiate an NCR (if applicable) and provide this info to the SRS SMR/SRS M&TE Custodian.

4.18.5 The SRS SMR/Designee will make calibration documentation and processes accessible as needed for internal and external audits.

4.18.6 The CCP M&TE Custodian will provide a recall notification for CCP M&TE that requires calibration to the SRS SMR/M&TE Custodian.

4.19 Work Standards

4.19.1 CCP operations personnel will work under applicable SRS Manual 8Q procedures.

4.19.2 SRS procedures and work packages will be used for non-waste characterization activities (e.g., equipment repairs).

4.19.3 SRS maintenance may assist CCP with equipment maintenance. All activities will meet CCP configuration and maintenance requirements and be authorized by the CCP VPM.

4.19.4 CCP operations personnel will operate in accordance with CCP-PO-005.

4.19.5 CCP personnel will comply with applicable SRS procedures for activities they perform outside of the CCP system of controls.

4.19.6 CCP personnel will work under the SRS safety basis and work control standards. Maintenance work control activities on SRS-supplied equipment and CCP owned/leased equipment will be controlled using SRS work authorization procedures.

4.19.7 CCP-CM-001, *CCP Equipment Change Authorization and Documentation*, CCP-PO-026, *CCP Configuration Management*, and CCP-TP-140, *CCP Equipment Maintenance* will be followed in addition to the requirements of step 4.19.6 for CCP owned/leased equipment.

4.19.8 The SRS will not change the configuration of any characterization equipment used by CCP – regardless of ownership – without first obtaining written concurrence from the CCP VPM.

4.19.9 The CCP SRS PM or VPM will notify the SRS SMR/Designee when new CCP personnel, (NWP and subcontractors) are

assigned to work at the SRS. This notification will occur as soon as is practical.

- 4.19.10 The CCP SRS PM or CCP VPM will notify the SRS SMR when CCP personnel, NWP and subcontractors leave the SRS as a result of reassignment or resignation. This notification will occur as soon as is practical.
- 4.19.11 The SRS SMR will notify affected organizations to support the arrival or departure of CCP personnel.
- 4.19.12 SRS Radiological Controls personnel will perform routine surveys for contamination and radiation as specified in SRS policies or procedures. The CCP SRS PM or CCP VPM and appropriate SRS management personnel will be notified immediately upon the discovery of any loose surface contamination in any CCP-occupied areas. Access to and copies of routine survey results will be made available to CCP upon request.
- 4.19.13 The SRS will immediately notify the CCP SRS PM or CCP VPM and appropriate SRS management personnel of any abnormal continuous or fixed air sample filter analysis results from any area routinely occupied by CCP personnel.
- 4.19.14 CCP will provide historical information on the operation of any CCP equipment deployed at the SRS for the purpose of lessons learned and the implementation of any mitigating actions from these lessons learned.
- 4.19.15 For SRS-supplied equipment and facilities, the SRS is the Design Authority. It is expected that CCP will participate in review of hazard analysis for this equipment and facilities being provided.
- 4.19.16 For non-SRS-provided equipment, CCP will provide the SRS with information and documentation necessary for evaluation of compliance with the SRS safety basis. CCP will be the Design Authority for the equipment. The programmatic limits for the operation of the characterization equipment are the responsibility of CCP as part of their Design Authority responsibilities.
- 4.19.17 CCP will control the procurement, development, maintenance, configuration management, and use of software used on all SRS and non-SRS-provided equipment used to develop quality-affecting data for waste characterization in accordance with CCP-QP-022, *CCP Software Quality Assurance Plan*.

4.20 Project Control

4.20.1 CCP and the SRS will provide routine status for their respective scheduled activities.

4.20.2 CCP will maintain and provide the SRS with an up-to-date organization chart listing CCP personnel, along with associated roles and responsibilities.

4.21 Procedures

4.21.1 CCP will develop new or revised procedures in accordance with CCP-QP-010.

NOTE

New technical operating procedures (procedures that operate equipment) developed by CCP and scheduled to be used at the SRS, shall be evaluated by the SRS SMR to determine if the procedure shall be added to the SRS review list provided in Section 4.21.4.

4.21.2 The SMR will review or designate the appropriate reviews of the CCP procedures listed in Section 4.21.4, and forward written comments to CCP Document Control in accordance with CCP-QP-010.

4.21.3 The SPM will confirm that the SMR/Designee written comments are resolved with the host facility SMR/Designee concurrence prior to proceeding with CCP operations under the scope of the document being reviewed.

4.21.4 The following documents and all revisions will be provided to the SMR for SRS review. This review may be waived if the operational activity is not being performed at the site. Waived procedures will be reviewed before CCP operations commence utilizing the un-reviewed procedure.

- CCP Interface Waste Management Document Lists
- CCP AK Assessments
- CCP SRS Acceptable Knowledge Summary Reports
- WSPFs
- CCP-CM-001, *CCP Equipment Change Authorization and Documentation*

- CCP-CM-013, *CCP Transportation Flammable Gas Analysis (FGA) Equipment Description*
- CCP-HSP-014, *Health and Safety Program Implementation for CCP*
- CCP-PO-004, *CCP/SRS Interface Document*
- CCP-PO-026, *CCP Configuration Management*
- CCP-QP-005, *CCP TRU Nonconforming Item Reporting and Control*
- CCP-QP-018, *CCP Management Assessment*
- CCP-TP-011, *CCP Radiography Inspection Operating Procedure*
- CCP-TP-033, *CCP Shipping of CH TRU Waste*
- CCP-TP-053, *CCP Standard Real-Time Radiography (RTR) Inspection Procedure*
- CCP-TP-054, *CCP Adjustable Center of Gravity Lift Fixture Preoperational Checks and Shutdown*
- CCP-TP-055, *CCP Varian Porta-Test Leak Detector Operations*
- CCP-TP-066, *CCP Radiography Screening Procedure for Prohibited Items*
- CCP-TP-068, *CCP Standardized Container Management*
- CCP-TP-086, *CCP CH Packaging Payload Assembly*
- CCP-TP-087, *CCP Scale Operations*
- CCP-TP-113, *CCP Standard Contact-Handled Waste Visual Examination*
- CCP-TP-139, *CCP In Situ Object Counting System Nondestructive Assay Operating Procedure*
- CCP-TP-504, *CCP Dose-to-Curie Survey Procedure for Remote-Handled Transuranic Waste*
- CCP-TP-505, *CCP Removable Lid Canister/Neutron Shielded Canister Loading*

- CCP-TP-507, *CCP Shipping of Remote-Handled Transuranic Waste*
- CCP-TP-509, *CCP Remote-Handled Transuranic Container Tracking*
- CCP-TP-554, *CCP Remote-Handled Grapple Pre-Operational Checks and Operation*

4.21.5 Upon receipt of a document listed the SMR/Designee will ensure the document is reviewed by CP responsible for the waste management activities relevant to the scope of the document.

4.21.6 The following documents will be sent to the SMR as “Notify Only” during the review process:

- CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- CCP-PO-002, *CCP Transuranic Waste Certification Plan*
- CCP-PO-003, *CCP Transuranic Authorized Methods For Payload Control (CCP CH-TRAMPAC)* (if CCP transportation program used by SRS)
- CCP-PO-005, *CCP Conduct of Operations*
- CCP-PO-006, *CCP Conduct of Operations Matrix*
- CCP-PO-050, *CCP TRUPACT-III TRU Waste Authorized Methods For Payload Control (CCP TRUPACT-III TRAMPAC)*
- CCP-PO-505, *CCP Remote-Handled Transuranic Waste Authorized Methods for Payload Control (CCP RH-TRAMPAC)*
- CCP-QP-002, *CCP Training and Qualification Plan*
- CCP-QP-008, *CCP Records Management*
- CCP-QP-010, *CCP Document Preparation, Approval, and Control*
- CCP-TP-005, *CCP Acceptable Knowledge Documentation*

- WP 15-GM1002, *Issues Management Processing of WIPP Forms*
- CCP-CM-001, *CCP Equipment Change Authorization and Documentation*
- CCP-CM-013, *CCP Transportation Flammable Gas Analysis (FGA) Equipment Description*

4.22 Documents

4.22.1 Documents listed in this section, which are provided from one organization to the other as information copies, may be transmitted via memo, fax, e-mail, formal correspondence, or as requested by SPM or SMR. Documents identified as QA records will be transmitted via CCP-QP-008, *CCP Records Management*.

4.22.2 Documents/Electronic Data to be provided to SRS by CCP include:

- [A] List of equipment requiring calibration.
- [B] Electronic NCR data and copies of WIPP Forms, as applicable.
- [C] Copies of the NDA Results for containers requiring notification per Section 4.9.2.
- [D] Copies of AK Summary Reports.
- [E] Data Quality Objective Reconciliation Documentation, as requested by SRS.
- [F] Cross-reference of containers to BDRs, as requested by SRS.
- [G] Material Safety Data Sheets (MSDS)/Safety Data Sheets (SDS).

4.22.3 Documents to be provided to CCP by SRS include:

- [A] Copies of calibration certifications.
- [B] Documentation of training completion for CCP personnel for training received from SRS.

- [C] Documentation of information for container modifications.
- [D] AK source documentation requested by CCP.
- [E] Radiological dose rate and surface contamination results on waste containers as needed to support WWIS/WDS data entry.
- [F] Any documentation required for CCP to perform its scope of work, including correspondence pertaining to characterization activities.
- [G] Copies of the Uniform Hazardous Waste Manifest, bill of lading and Shipment Notifications.

4.23 Authorization Basis (AB) and Configuration Management

- 4.23.1 The SRS has primary responsibility to ensure that CCP equipment and processes have been appropriately considered within the DOE-approved SRS documented safety analysis.
- 4.23.2 CCP has primary responsibility to control operations and equipment configurations to ensure compliance with CCP procedures that protect the personnel, public, and environment.
- 4.23.3 For CCP-provided equipment, CCP will provide the documentation necessary for SRS to perform the evaluation against its safety analysis. This documentation may include health and safety plans, hazard assessments, system descriptions, equipment drawings, or other information deemed necessary through mutual agreement between CCP and SRS.
- 4.23.4 For SRS-provided equipment, CCP will review operational documentation to ensure the safety of CCP personnel while operating the equipment.
- 4.23.5 All changes to equipment operated by CCP will be controlled by the SRS Work Control Program to ensure appropriate SRS AB evaluations are conducted, and associated controls established.
- 4.23.6 CCP has primary responsibility to ensure changes to equipment are in accordance with CCP-CM-001.

4.24 Notification

4.24.1 The SRS has primary responsibility to notify CCP when there are changes in the SRS facilities used by CCP for characterization activities or changes that may impact operations.

4.24.2 The SRS has primary responsibility to notify CCP when there are changes to policies, processes, or procedures that may affect CCP characterization activities or operations.

4.24.3 CCP has primary responsibility to notify the SRS when there are configuration changes to CCP or CCP vendor-owned equipment.

4.24.4 The SRS has a responsibility to notify CCP when repairs or modifications are needed on the CH or RH transportation trailers, packaging equipment, or casks.

4.24.5 CCP is responsible for performing or coordinating repairs and modifications to the CH or RH transportation trailers, packaging equipment, or casks.

4.25 Procurement

4.25.1 SRS is shown as a supplier of procurement services on the NWP QSL. SRS may procure, inspect, and perform receipt inspection of whatever items are listed in the most current NWP QSL for the CCP scope of work (this is presently limited to 55-gallon drums and container filter vents). SRS will perform these activities in accordance with its QSL-accepted program.

4.26 Occurrence Reporting and Processing System (ORPS) and Price-Anderson Amendments Act (PAAA)

4.26.1 Both SRS and CCP maintain the responsibility for reporting potential Price-Anderson Amendments Act (PAAA) issues resulting from waste certification or safe operation of characterization activities (e.g., Technical Safety Requirements, Radiation Safety, Industrial Safety, Industrial Hygiene, Maintenance, Lockout/Tagout, Conduct of Operations) of TRU waste by CCP at SRS. This includes filing any Occurrence Reporting and Processing System (ORPS) reports resulting from the characterization activities of TRU waste by CCP.

4.26.2 Both SRS and CCP shall invite the other to participate in the investigation of any waste characterization event that results in an ORPS or PAAA report.

4.26.3 Both SRS and CCP shall support and participate in investigations when CCP characterization activities result in an ORPS or PAAA report.

4.27 10 Code of Federal Regulation (CFR) Part 851, Worker Safety and Health Program

4.27.1 CCP personnel will work under the Host Site 10 code of Federal Regulations (CFR), Part 851, *Worker Safety and Health Program*, regulations and applicable procedures governing the Host site program.

5.0 RECORDS

- 5.1 Records generated during the performance of this procedure are maintained as QA records in accordance with CCP-QP-008. The records are the following:

5.1.1 QA/Nonpermanent Records

- [A] Written comments from SRS (e.g., memo, e-mail)

6.0 OVERSIGHT

NOTE

Through the SOW between SRS and NWP, the SRS has delegated the authority to characterize and certify TRU waste to be shipped to the WIPP. Nonetheless, the SRS retains the responsibility for proper disposal as the waste generator on behalf of DOE. Accordingly, the following actions will define level of oversight of the CCP by SRS personnel.

- 6.1 The SRS will accept successful completion of the CBFO certification audit as adequate evidence that the CCP implementation at the SRS is fully compliant with waste disposal requirements as set forth in the CH and RH WAC and WAP.
- 6.2 Following successful completion of the CBFO certification audit, the SRS QA will conduct periodic surveillances to ensure CCP work is conducted in accordance with CCP procedures. These surveillances will be conducted in accordance with SRS QA procedures
- 6.3 The SRS QA will provide copies of its surveillance reports to the CCP SPM. The CCP SPM and NWP QA will take the following actions:
 - 6.3.1 Review the SRS surveillance reports for any finding or other deficiencies against the CCP scope of work.
 - 6.3.2 Document and perform corrective actions in accordance with applicable NWP issues management procedures.
 - 6.3.3 Provide SRS QA with CCP actions to correct the identified deficiencies.
 - 6.3.4 NWP QA will maintain an information file of the SRS surveillance reports conducted on the CCP scope of work.

Figure 1. Nuclear Waste Partnership

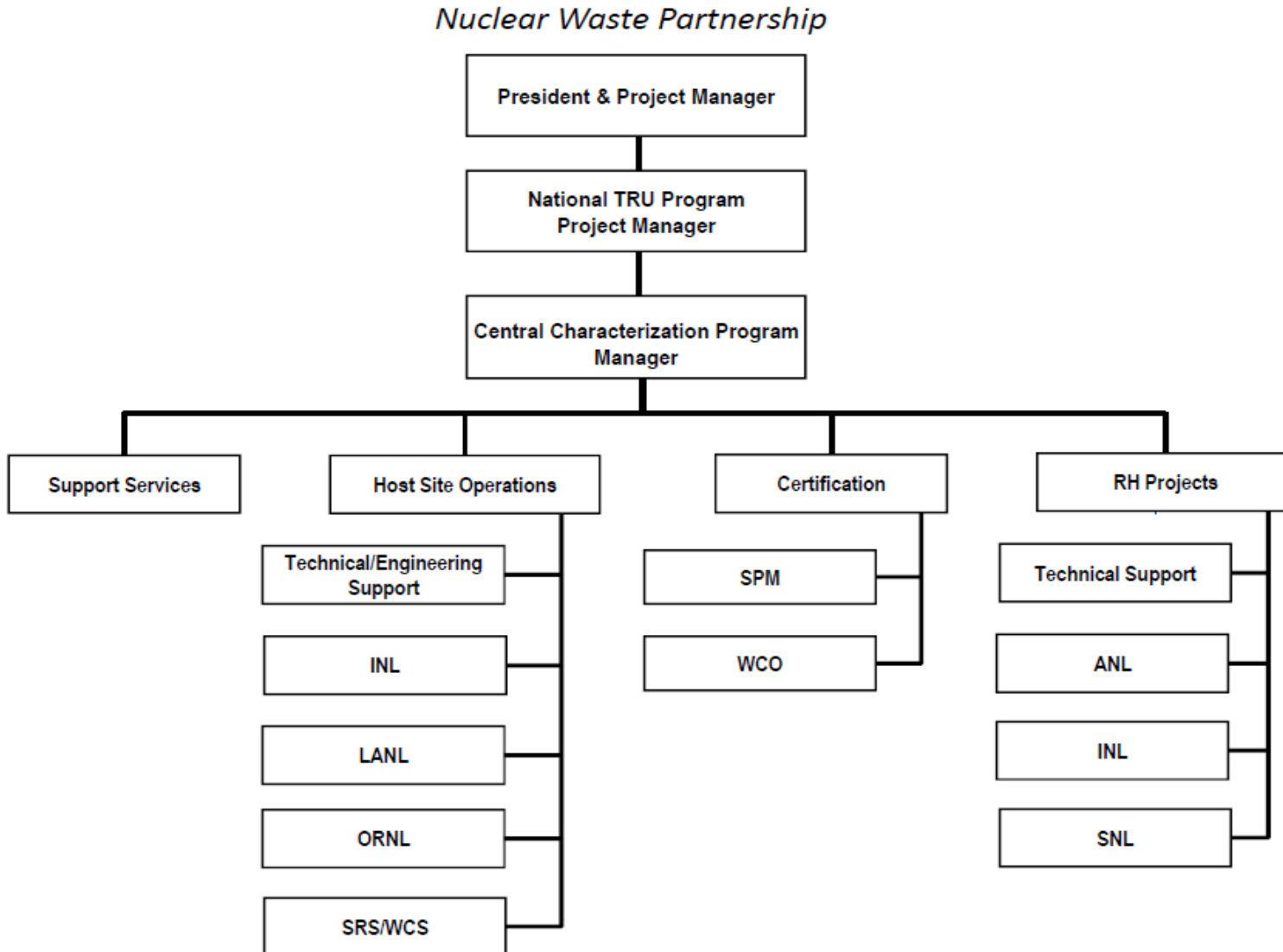
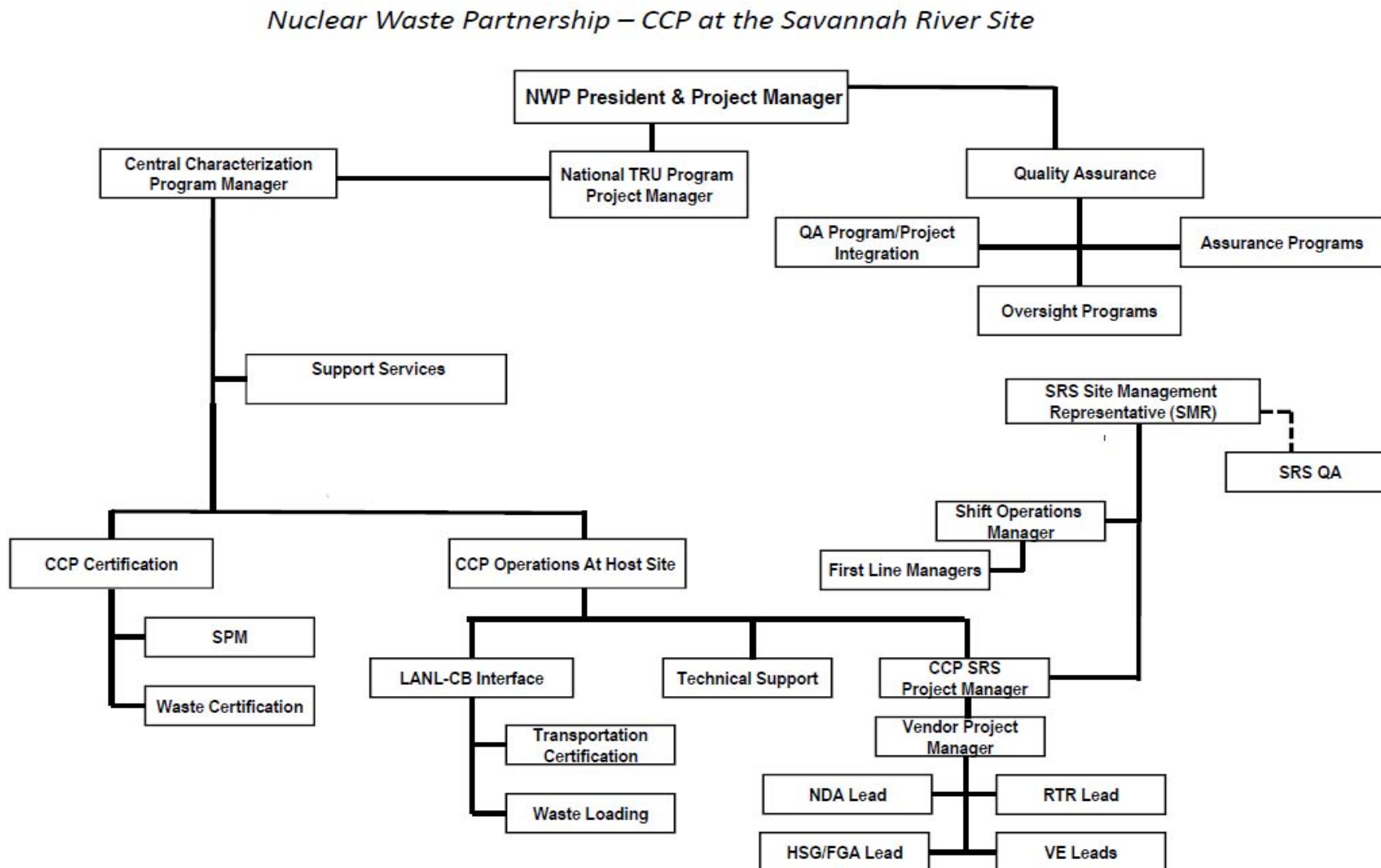


Figure 2. Nuclear Waste Partnership – CCP at the Savannah River Site



CCP-PO-027

Revision 6

CCP/TRU Waste Processing Center/Oak Ridge National Laboratory Interface Document

EFFECTIVE DATE: 02/02/2016

Mike Ramirez

PRINTED NAME

APPROVED FOR USE

RECORD OF REVISION

Revision Number	Date Approved	Description of Revision
0	10/02/2007	Initial issue.
1	02/17/2010	Revised due to the deployment of the Mobile IQ3 Nondestructive Assay (NDA) system to the transuranic (TRU) Waste Processing Center (TWPC).
2	04/22/2010	Revised to remove the requirement to apply Central Characterization Project (CCP) hold tags to containers which are returned to the host facility as permanent rejects.
3	12/29/2010	Minor revision to update references to the <i>Waste Isolation Pilot Plant Hazardous Waste Facility Permit</i> .
4	10/01/2012	Revised to incorporate Nuclear Waste Partnership (NWP) transition changes.
5	10/02/2013	Revised to incorporate Class 2 Permit Modification changes, dated March 13, 2013 and to include the freeze file as of 11/20/2012. Changes in the freeze file include: <ol style="list-style-type: none">1. Measuring and testing equipment (M&TE) changes proposed by S. Burns to make CCP-PO-027 similar to other interface documents that were affected by CAR-LANL-003-12.2. An "Any documentation required for Central Characterization Program (CCP) to perform its scope" added.3. Training information in Section 4.1.3 revised.4. Removed references to drum venting system (DVS) as equipment is no longer on site.5. Section 4.13.6 [A] revised to generalize CCP Project Manager (PM's) approval of CCP-CM-001, <i>CCP Equipment Change Authorization and Documentation</i> information.6. "CCP or CCP Vendor owned equipment" added where needed.
6	02/02/2016	Revised format and content to better align with a standardized Central Characterization Program (CCP) interface document format and to address enhancements pertaining to the Acceptable Knowledge (AK) process.

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1.0 PURPOSE

This document establishes the interfaces between the Nuclear Waste Partnership LLC (NWP) Central Characterization Program (CCP), and the Oak Ridge National Laboratory (ORNL) TRU Waste Processing Center (TWPC) for implementing services described in the applicable Statement of Work (SOW) and program documents. The CCP is operated by NWP at the direction of the U.S. Department of Energy (DOE) Carlsbad Field Office (CBFO).

It is not intended to be used in lieu of a task-specific subcontract. Specifically, this document identifies CCP and Host site/generator responsibilities for implementing requirements and deliverables.

1.1 Background

The ORNL is a transuranic (TRU) waste generator site in the DOE complex. The TWPC is the centralized facility at ORNL for processing, characterizing and shipping TRU waste off site for disposal. The DOE Oak Ridge Operations Office (ORO) manages all activities at the ORNL, including waste management, for the DOE.

The DOE/CBFO has deployed the CCP to the TWPC to characterize, certify, and ship legacy contact-handled (CH) and remote-handled (RH) TRU waste for disposal at the Waste Isolation Pilot Plant (WIPP). CBFO has audited and certified CCP to perform these activities at the ORNL.

1.2 Scope

This document applies to the CCP, the Host site, and generators whose waste is characterized and certified by CCP for the TWPC. Unless specifically stated otherwise, the TWPC is the Host site in this document. "Generator" may refer to the TWPC or it may refer to the facility that originally generated and/or treated and packaged the waste.

This document addresses CCP and Host site/generator responsibilities for the following areas:

- Facilities/equipment for TRU waste characterization and shipping
- Safety Programs
- Training and qualification
- Container management

- Deficiencies and nonconformances
- Nondestructive examination (NDE) including visual examination (VE) and real-time radiography (RTR)
- Nondestructive assay (NDA)
- Radiological Characterization (RC) including dose-to-curie (DTC) and sampling and analysis, if required
- Chemical Sampling and Analysis
- Flammable Gas Analysis (FGA) for transportation requirements
- Performance Demonstration Program (PDP)
- Source control
- Acceptable Knowledge (AK)
- Data validation and reconciliation
- Measuring and Test Equipment (M&TE)
- Work standards
- Quality Assurance (QA)
- Project Control
- Procedures
- Document Transmittals
- Procurements
- Records
- TRU Waste Certification and WIPP Waste Information System/Waste Data System (WWIS/WDS) data entry
- Transportation
- Configuration Management

These services will be performed with CCP and/or Host site equipment with appropriate DOE/CBFO-certified procedures. The Host site may augment CCP characterization efforts as requested by CCP. Augmented services provided by the Host site shall comply with applicable CCP procedures.

CCP will also support TWPC in their mission to dispose of Low Level and Mixed Low Level Waste (LLW/MLLW). This support will primarily be providing NDE and NDA data collected during CCP certified activities for containers that are subsequently determined by CCP to be LLW/MLLW waste containers.

The Host site maintains ownership of the waste and responsibility for its disposal. This responsibility includes additional chemical sampling analysis deemed necessary by the WIPP Co-Permittees.

The Host site/generator services covered by this document include programs for Radiological Controls, Occupational Safety and Health, Industrial Hygiene, Nuclear Safety/Authorization Basis (AB), Emergency Management, and Environment/Hazardous Waste Management.

2.0 REQUIREMENTS

All services provided by CCP will comply with DOE/WIPP-02-3122, *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plan* (WIPP-WAC), the *Waste Isolation Pilot Plant Hazardous Waste Facility Permit* (WIPP-WAP), DOE/WIPP-02-3214, *Remote-Handled TRU Waste Characterization Program Implementation Plan* (WCPIP), WP 13-1, *Nuclear Waste Partnership LLC, Quality Assurance Program Description*, and Certificates of Compliance (COCs) for Type B Packages issued by the Nuclear Regulatory Commission (NRC).

Requirements from this upper-tier document flow down to the following program documents:

- CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- CCP-PO-002, *CCP Transuranic Waste Certification Plan*
- CCP-PO-003, *CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC)*
- CCP-PO-005, *CCP Conduct of Operations*
- CCP-PO-026, *CCP Configuration Management*
- CCP-PO-505, *CCP Remote-Handled Transuranic Waste Authorized Methods for Payload Control (CCP RH-TRAMPAC)*
- CM-A-IS-001, *Worker Safety and Health Program*
- CM-P-RP-316, *Radiological Worker Training*
- DOE/WIPP-02-3183, *CH Packaging Program Guidance*
- DOE/WIPP-02-3283, *RH Packaging Program Guidance*
- DOE/WIPP-06-3345, *Waste Isolation Pilot Plant Flammable Gas Analysis*
- DOE/WIPP-94-1012, *U. S. Department of Energy Carlsbad Field Office Quality Assurance Program Document (QAPD)*

This work will be performed under a DOE/CBFO-certified QA program that meets the requirements defined in DOE/CBFO-94-1012, *U.S. Department of Energy Carlsbad Field Office Quality Assurance Program Document (QAPD)*.

A more comprehensive list of documents included in the CCP System of Controls is provided in Section 4.23.

3.0 RESPONSIBILITIES

CCP has primary responsibility for performing TRU waste characterization, certification, and transportation activities in accordance with governing requirements described herein. CCP services include compilation, reporting, and confirmation of AK, NDE, VE, NDA, RC, FGA for transportation, data validation and verification, waste certification, WWIS/WDS data entry, and transportation activities.

The Host site Management and Operating (M&O) Contractors' responsibilities are limited to the CCP activities described herein being performed on their behalf and for performing TRU waste management activities in accordance with Host site/generator documents provided by CCP.

3.1 Operations

3.1.1 CCP performs the following operations activities:

- [A] Obtains Host site management daily release/approval prior to performing CCP operations.
- [B] Performs system start-up and calibration of characterization equipment at the Host site.
- [C] Operates CCP equipment in accordance with approved procedures including CCP-PO-005, *CCP Conduct of Operations*.
- [D] Performs safety walk-downs prior to operation.
- [E] Responds to and resolves assessment and surveillance findings for CCP activities.
- [F] Ensures CCP and Host site personnel are trained and qualified in accordance with the requirements specified in Section 4.3.
- [G] Demonstrates CCP operations during DOE/CBFO certification/recertification audits.
- [H] Performs Management Assessments and QA Surveillances on: 1) CCP Operations, and 2) Host site waste management activities referenced in active CCP AK Summaries/Waste Stream Profiles.

[I] Performs inspection of containers provided by the Host site to ensure they are safe and ready for CCP characterization.

3.1.2 The Host site provides the following operations support for CCP activities:

[A] Radiological controls as needed to support characterization activities, including:

- Radiological postings.
- Radiation protection surveys, both initial and routine, on characterization equipment and provide approved survey reports to the CCP Vendor Project Manager (VPM) as required.
- Personnel dosimetry.
- Dose assessments and dosimetry reports.
- Calibrated and source checked survey instrumentation, as required.
- Radiological Work Permits (RWP) to support CCP activities, as required.
- Bioassay sample collection, evaluation, and reporting, if applicable. The CCP TWPC Project Manager or CCP VPM will be notified of any positive bioassay results as soon as is reasonably possible.
- Radiological source controls.

[B] Provides adequate facilities for the safe performance of characterization and transportation activities.

[C] Provides site-specific training, as needed, to ensure safe operations within the Host site.

[D] Provides Industrial Safety and Health (IS&H) support, as needed.

- [E] Provides Fire Protection and Emergency Management support, as needed.
- [F] Provides AB oversight, including Unreviewed Safety Question (USQ) evaluations.
- [G] Provides environmental impact oversight and support, as needed.
- [H] Provides on-site container transportation.
- [I] Provides container handling, inventory control, and storage location tracking using the TWPC Container Tracking system.
- [J] Provides personnel to be trained and qualified under the CCP program as needed to support CCP activities such as VE, RC (DTC), etc., if applicable.
- [K] Coordinates and obtains document classification reviews as required to allow the public release of documents such as the AK Summary Report.
- [L] Provides calibrated M&TE for use in characterization or obtains calibration service for CCP provided M&TE.
- [M] Provides waste packaging materials and other equipment/materials purchased and inspected in accordance with the Qualified Supplier List (QSL) approved program.
- [N] Provides hazardous waste manifesting, bill of lading, and notifications for transportation.
- [O] Provides qualified personnel to support maintenance of CCP equipment.
- [P] Responds to and resolves CCP management assessment and CCP QA surveillance findings related to Host site waste management activities.

3.2 CCP ORNL Project Manager

- 3.2.1 Functions as CCP's primary interface and point-of-contact (POC) between CCP and the Site Management Representative (SMR)/Designee for waste characterization.
- 3.2.2 Unless otherwise assigned herein, ensures documents listed in step 4.23.3 are provided to the Host site.
- 3.2.3 Ensures sufficient characterization equipment and personnel are available to perform the required characterization activities at the Host site.
- 3.2.4 Provides status on CCP characterization operations to the SMR/Designee, as requested.
- 3.2.5 Works in conjunction with SMR/Designee to establish and maintain reasonable and appropriate throughput of waste containers.
- 3.2.6 Ensures CCP management and CBFO are informed of safety, compliance, or production issues impacting CCP ORNL activities.
- 3.2.7 Ensures the CCP Management Assessment program is implemented for CCP Operations and Host site waste management activities related to active CCP AK Summaries/Waste Stream Profiles.
- 3.2.8 Work with the SMR to schedule and ensure access to areas to perform visual observation of selected waste streams.

3.3 CCP Site Project Manager (SPM)

- 3.3.1 Functions as CCP's primary interface and POC between CCP and the SMR/Designee for all waste certification activities and WIPP Waste Acceptance Criteria (WAC) and Waste Analysis Plan (WAP) subject matter expert (SME) and compliance authority.
- 3.3.2 Ensures the AK Summary Report for TRU waste characterized by the CCP are prepared, approved, issued, and provided to the SMR/Designee.
- 3.3.3 Ensures Waste Stream Profile Forms (WSPFs) are prepared, reviewed, and approved.

- 3.3.4 Ensures that project level verification and validation of batch data reports (BDRs) are completed.
 - 3.3.5 Provides evidence to the SMR/Designee of PDP participation and successful completion.
 - 3.3.6 Ensures software used by CCP characterization at ORNL is controlled in accordance with CCP-QP-022, *CCP Software Quality Assurance Plan*.
 - 3.3.7 Coordinate presentation of AK briefings to CCP characterization personnel, generator site SMR, POCs/SMEs or Cognizant Designees directly involved with the generation of each waste stream.
 - 3.3.8 Provides AKE and SMR quarterly notifications that the Interface Waste Management Document List (IWMDL) are current.
 - 3.3.9 Transmit the Acceptable Knowledge Assessment (AKA) to SMR for distribution to site POCs/SME to verify accuracy and completeness and obtain concurrence signature from SMR.
 - 3.3.10 Perform visual observation of waste generators performing activities that change the physical and/or chemical properties of waste during or prior to the waste being packaged for CCP characterization for waste streams identified by the SMR.
- 3.4 Acceptable Knowledge Expert (AKE)
- 3.4.1 Collects, compiles reviews, and documents AK in accordance with CCP-TP-005, *CCP Acceptable Knowledge Documentation*.
 - 3.4.2 Ensures CCP has obtained necessary container information prior to characterization.
 - 3.4.3 Prepares and maintains the IWMDL for each waste stream, including the identification of the applicable procedure POCs/SMEs involved directly with the generation of each waste stream (identified by the SMR).
 - 3.4.4 Performs an AKA for each waste stream.
 - 3.4.5 Performs Chemical Comparability Evaluations.

- 3.4.6 Submit IWMDL and associated quarterly SMR notifications to the Site Project Manager (SPM) to submit to records.
 - 3.4.7 Document the AKA in an Assessment Memorandum to the SPM.
- 3.5 CCP Quality Assurance (QA) Engineer
 - 3.5.1 Functions as NWP's primary interface and POC for QA matters between CCP, Host site, DOE/ORNL, and DOE/CBFO.
 - 3.5.2 Validates the Nonconformance Reports (NCRs) generated by CCP personnel performing characterization activities at the Host site.
 - 3.5.3 Provides copies of NCRs for information to the Host site SMR/Designee as requested.
 - 3.5.4 Ensures that NCRs are dispositioned in a timely manner in accordance with CCP-QP-005, *CCP TRU Nonconforming Item Reporting, and Control*.
 - 3.5.5 Ensures performance of receipt inspection in accordance with CCP-QP-026, *CCP Inspection Control*, for items and services procured by CCP.
 - 3.5.6 Provides the SMR/Designee with a copy of the semi-annual trending summary reports in accordance with CCP-QP-014, *CCP Quality Assurance Trend Analysis and Reporting*.
- 3.6 Site Management Representative (SMR) (Host Facility Management Position)
 - 3.6.1 Functions as the Host site primary interface and POC between the Host site and CCP.
 - 3.6.2 Ensures cognizant Host site and generator POCs/SMEs are identified and available as necessary to support the review of CCP documents defined in step 4.23.3.
 - 3.6.3 Coordinates review, provides comments, and approves comments resolutions on documents listed in step 4.23.3. This includes facilitating generator document review and comment resolution as necessary. The review and comment resolution will be documented in accordance with CCP-QP-010, *CCP Document Preparation, Approval, and Control*.

- 3.6.4 Facilitates workflow between CCP and ORNL TRU waste generators as necessary to allow CCP to fulfill program requirements. This includes CCP access to generator processes and documentation as necessary.
- 3.6.5 Ensures unreviewed safety question determination (USQDs) needed for proposed modifications to CCP hardware, software, or procedures are prepared and approved by qualified Host site personnel prior to CCP implementing the proposed modification.
- 3.6.6 Ensures CCP is provided appropriate facilities, construction services, utilities, phone services, network services and office services necessary to perform their activities at the TWPC.
- 3.6.7 Notifies the CCP Project Manager (PM) and VPM of any safety basis changes to action levels that will impact CCP initiated notifications.
- 3.6.8 Ensures site support (e.g., Radiological, IS&H, waste handling, etc.) is available for waste characterization.
- 3.6.9 Ensures documentation of completed Host site-specific training is delivered to CCP Training.
- 3.6.10 Provides local personnel to support characterization operations such as VE. Also provides personnel to support the CCP AK Experts (AKE) in the collection of documents.
- 3.6.11 Works in conjunction with the CCP PM and VPM to maintain reasonable and appropriate throughput of waste containers.
- 3.6.12 Ensures that periodic QA surveillances of CCP operations by the Host site are conducted and reported to CCP.
- 3.6.13 Ensures CCP personnel have access to facilities to observe operations and interview personnel associated with generation, packaging, repackaging, or treatment of TRU waste.
- 3.6.14 Performs quarterly reviews of the IWMDL and notifies SPM that the list is complete and includes the most current revision of the relevant procedures.
- 3.6.15 Work with CCP PM/Designee to schedule and ensure access requirements are met for visual observation of selected waste streams.

3.7 CCP Vendor Project Manager (VPM)

- 3.7.1 Obtains Host site management daily release/approval prior to performing CCP operations.
- 3.7.2 Ensures CCP and Host site personnel are trained and qualified to perform WIPP-compliant TRU waste characterization activities at the Host site prior to commencement of work activities.
- 3.7.3 Monitors the List of Qualified Individuals (LOQI) daily to confirm that only qualified personnel perform waste characterization activities.
- 3.7.4 Works in conjunction with CCP PM and Host site SMR/designee to maintain reasonable and appropriate throughput of waste containers.
- 3.7.5 Provides daily pre-operations briefing to CCP personnel. The daily pre-operations briefing may be combined with the Host site's pre-operations briefing as agreed between the CCP TWPC Project Manager and Host site operations management.
- 3.7.6 Ensures applicable manufacturers Material Safety Data Sheets and/or Safety Data Sheets (MSDSs/SDSs) for products brought to the facility by the CCP are provided, maintained, and available to support operations and meet the requirements of the TWPC chemicals management program.
- 3.7.7 Provides oversight of CCP field operations to ensure safe, compliant and efficient operations.
- 3.7.8 Notifies the CCP ORNL Project Manager and the Host site Facility Manager/Operations Manager of any abnormal events associated with safe and compliant operation of CCP characterization activities for reporting purposes.
- 3.7.9 Ensures CCP notifications required to comply with the Host site safety basis are incorporated into appropriate CCP work documents and appropriate CCP personnel (including offsite personnel such as Independent Technical Reviewers [ITRs], NDA Expert Analyst [EA], and SPMs) are aware of their responsibility to make such notifications.

3.7.10 Obtains SMR and Facility Site Representative (FSR) review and concurrence prior to issuance/approval of CCP Operator Aids or Standing Orders that could affect changes to equipment operation or configuration.

3.8 Waste Certification Official (WCO)

3.8.1 Obtains approved WSPF for containers to be certified.

3.8.2 Will document and certify that all TRU waste payload containers meet the requirements of the WAC, TRAMPAC, and submits the data to the WWIS/WDS for approval.

3.9 Transportation Certification Official (TCO)

3.9.1 Ensures CCP Transportation personnel are trained and qualified to perform WIPP-complaint CH and RH TRU waste packaging and loading operations at the Host site prior to starting work activities and are listed on the current LOQI.

3.9.2 Provides oversight of CCP Transportation personnel for payload and Overpack assembly and loading.

3.9.3 Builds payloads from certified containers and Overpacks provided by Waste Certification Officials (WCOs) in WWIS/WDS.

3.9.4 Certifies payloads for transportation to and disposal at WIPP.

3.9.5 Builds shipments from approved payloads in WWIS/WDS.

4.0 INTERFACE

4.1 Initial Setup for Operations

4.1.1 CCP is responsible for the following during initial setup:

- [A] Providing information and procedures to the Host site SMR/Designee, who will coordinate facility, QA, and Environmental Safety & Health (ES&H) reviews to determine satisfactory compliance with Host site safety basis requirements, radiological controls requirements, and other safety and operational requirements.
- [B] Completing readiness activities as needed to support authorization of CCP activities at the Host site.
- [C] Providing project support to complete administrative reviews and approvals of technical and administrative procedures and processes.
- [D] Mobilization of project staff and equipment.

4.1.2 The Host site is responsible for the following during initial setup:

- [A] Providing office space for CCP personnel and locations and utilities for CCP equipment.
- [B] Reviewing and approving work packages for CCP equipment setup.
- [C] Providing CCP personnel with computer access, badging, and Host site required reading.
- [D] Defining and coordinating readiness activities as needed to support authorization of CCP activities at the Host site.

4.2 Routine Operations

4.2.1 Routine CCP operations will be conducted in accordance with approved CCP and Host site procedures.

4.3 Training and Qualification

- 4.3.1 CCP personnel or Host site personnel who perform work under CCP procedures will be trained and qualified to WIPP requirements in accordance with CCP-QP-002, *CCP Training and Qualification Plan* and/or CCP-QP-040, *Support Training*, as applicable.
- 4.3.2 Host site will schedule and provide forms as necessary for individuals that are required to take HAZWOPER physical. CCP will be responsible for the cost of the physicals.
- 4.3.3 Administrative work, such as BDR reviews that require no access to characterization activities or processes, may be completed by personnel who have not completed the Host site required site-specific training. Personnel who have not completed Host site required site-specific training will not be allowed unescorted access to the characterization activities.
- 4.3.4 CCP and Host site personnel assigned to field operations must complete the Host site required site-specific training. The SMR will ensure that the Oak Ridge site-specific training documentation is sent to CCP Training and notification is made to the VPM.
- 4.3.5 Both the CCP training and Host site required site-specific training must be completed prior to the individual being assigned to perform independent work at the Host site.
- 4.3.6 A LOQI will be monitored by the CCP VPM to confirm CCP and Host site personnel assigned to CCP to perform work are qualified.

4.4 Employee Monitoring

- 4.4.1 CCP employees will be monitored in accordance with Host site radiation protection program and TWPC procedure CM-P-RP-316, *Radiological Worker Training*.
- 4.4.2 CCP employee health and safety will be monitored by Host site Health and Safety program in accordance with 10 Code of Federal Regulation (CFR) Part 851, *Worker Safety and Health Program* and TWPC procedure, CM-A-IS-001, *Worker Safety and Health Program*.

4.5 Container Management

4.5.1 The Host site provides container movement and storage compliant with the Documented Safety Analysis (DSA).

4.5.2 The Host site provides the dose rate and surface contamination information necessary to certify TRU waste containers for disposal.

4.5.3 CCP performs container management throughout the CCP characterization process in accordance with CCP-TP-068, *CCP Standardized Container Management*, or CCP-TP-509, *CCP Remote-Handled Transuranic Container Tracking*.

4.5.4 CCP AK personnel will maintain a list of characterization-eligible containers from each waste stream identified. When repackaging or VE of a waste container is required, the following container Identification (ID) scheme will be followed as applicable.

[A] When the waste from one TRU input container results in one TRU output container, the container ID from the Input container is to be used with the addition of an "A" suffix as the ID number on the output container (e.g., input container is X10C0057, the output container will be labeled as X10C0057A). This scheme is also to be applied to re-label waste containers that do not require repackaging or VE.

[B] When the waste from one TRU input container results in the creation of two or more TRU output containers, a standard convention of adding a sequential single or, if required, double letter suffix to the input container's ID number is used to label the TRU output containers produced (e.g., input container is X10C0057, the first output container is X10C0057A, and the second output container is X10C0057B).

[C] When the waste from two or more TRU input containers from the same waste stream are combined into one output container, the container ID number from the first input container is used with the addition of an "A" suffix as the ID number on the TRU output container (e.g., X10C0057 and X10C0059 are combined into one output container. X10C0059 was the first drum repackaged. The output container is X10C0059A).

- [D] When prohibited items are segregated and placed into a separate output container from the bulk of the waste, a new container ID is applied to the segregated waste container. Prohibited items from more than one input waste container may be placed into the segregated waste container provided the input containers are from the same waste stream.
- [E] CCP AK personnel are to be notified as soon as is practical of waste container ID number changes resulting from the actions in steps 4.5.4[A] through [D].

4.5.5 Host site will notify CCP when any drum configuration is changed externally or internally.

4.6 Deficiencies and Nonconformances

4.6.1 CCP-Identified Deficiencies and Nonconformances

NOTE

The NWP QA Engineer will confirm appropriate closure of the deficiencies that are resolved by CCP.

- [A] If CCP personnel identify a nonconformance condition associated with a waste container during the CCP characterization or certification process, CCP personnel will initiate an NCR in accordance with CCP-QP-005.
- [B] If the deficiency or nonconformance is an issue that will be resolved by CCP, CCP will provide notification (e.g., verbal, or e-mail as requested by the Host site) to the Host site SMR/Designee. The Host site SMR/Designee may request any supporting documentation needed by the Host site. CCP will ensure appropriate closure of the deficiency. A copy of any CCP NCR related to DOE TRU waste at the TWPC will be provided to the Host site SMR/Designee upon request.
- [C] If the deficiency or nonconformance cannot be resolved by the CCP (e.g., does not meet TRU waste acceptance criteria), then the specific container will be returned with all required documentation to the Host site for disposition. Once the specific container(s) have been returned to the Host site, the NCR will remain open if the container will be remediated and returned to CCP or will be closed if the

condition is such that the container will not be returned to CCP (e.g., NDA indicates the container is less than 100 nanocuries per gram [nCi/g] TRU alpha activity concentration). CCP will not apply CCP HOLD TAGS to those containers which are returned as permanent rejects from CCP. Instead, CCP will affix a physical indicator (sticker or tag) that the container is returned and not certifiable for shipment to WIPP.

4.6.2 Host Site-Identified Deficiencies and Nonconformances

- [A] If Host site personnel identify a nonconforming condition during container movement or handling (e.g., missing container identification tag, duplicate container number), Host site personnel will initiate nonconformance documentation in accordance with the Host site QA Program.
- [B] The SMR will ensure a copy of any NCR affecting the CCP program is provided to the SPM for incorporation into the CCP Nonconformance Tracking System (as required).
- [C] The SMR will notify the CCP ORNL PM and VPM of any procedure deficiencies, identified by TWPC personnel, which relate to characterization activities.
- [D] The SMR will notify the Transportation Certification Official (TCO) or Mobile Loading Unit Team Lead and the VPM of any procedure deficiencies, identified by Host site personnel, which relate to payload assembly or loading activities.

4.7 Visual Examination (VE)

- 4.7.1 CCP will conduct VE Operations in accordance with CCP-TP-113, *CCP Standard Contact-Handled Waste Visual Examination*, as needed, or CCP-TP-500, *CCP Remote-Handled Waste Visual Examination* using a facility provided by the Host site.
- 4.7.2 Qualified Host site personnel will manipulate waste as requested by the CCP VE operator(s) during the VE process.
- 4.7.3 VE operators will make notifications to the Host site as necessary to comply with the Host site safety basis. These Notifications will be made to Host site management and the VPM.

4.7.4 The Host site will perform all maintenance and repairs to the VE facility.

4.7.5 The Host site will provide personnel to qualify and perform VE in accordance with CCP-TP-113 or CCP-TP-500, if applicable.

4.8 Real-Time Radiography (RTR)

4.8.1 CCP will perform RTR using a CCP-provided unit(s). Containers rejected by RTR will be dispositioned consistent with the requirements of Section 4.6.

4.8.2 CCP may perform screening services using a CCP provided unit(s) to provide information on prohibited items for use in TWPC repackaging operations. CCP-TP-066, *CCP Radiography Screening Procedure for Prohibited Items*, will be used for RTR screening operations. The report provided from CCP-TP-066 will include any prohibited items or conditions, including all liquids identified, during the scan.

4.8.3 RTR operators will make notification to the Host site as necessary to comply with the Host site Safety Basis. These Notifications will be made to Host site management and the VPM.

4.8.4 The Host site is to support the CCP VPM with the construction of RTR capability demonstration drums as required.

4.9 Filter Inspection/Filter Change Out

4.9.1 CCP Personnel will inspect container filters as part of container acceptance and will document whether the filter is a WIPP-approved filter and provide the documentation to the CCP VPM.

4.9.2 If required, filter change out will be performed by Host site personnel and documentation will be provided to the CCP VPM.

4.10 Nondestructive Assay (NDA)

4.10.1 The Host site will provide support for CCP participation in the PDP. This support includes preparation of the test drums, delivery and pick-up of the drums to/from the CCP NDA equipment, and responsibility for PDP source control.

4.10.2 CCP will perform NDA using a CCP-provided unit or multiple units as required. Containers rejected by NDA will be dispositioned consistent with the requirements of Section 4.6.

4.10.3 NDA operators will make notifications to the Host site as necessary to comply with the Host site safety basis. These Notifications will be made to Host site management and the VPM.

4.10.4 CCP will provide TWPC with access to validated BDRs for disposal of LLW/MLLW from the certified program.

4.11 Radiological Characterization (Dose-to-Curie [DTC])

4.11.1 The Host site will provide technical support for RC efforts based on the use of AK for stored RH TRU waste or sampling and analysis.

4.11.2 CCP will provide qualified personnel, including Host site personnel, to perform RC activities.

4.11.3 DTC operators will make notifications to the Host site as necessary to comply with the Host site safety basis. These notifications will be made to Host site management and the VPM.

4.11.4 The Host site will provide support to the CCP for performing calibration of RC instrumentation. This support includes delivery of surrogate drums and source control as needed.

4.12 Chemical Waste Sampling and Analysis Methods

4.12.1 If the Permittees determine that additional characterization is necessary using chemical sampling and analysis, the Permittees shall direct the generator/storage site to provide the Permittees with the following documentation:

- Sampling and analysis plan
- EPA SW-846 test method(s), or functionally equivalent test method(s) to be used
- Identification of the laboratory(ies) that will be performing the test(s)

4.12.2 Upon the Permittees written approval of the sampling and analysis plan, the generator/storage site shall implement the sampling and analysis plan.

4.13 Flammable Gas Analysis (FGA)

4.13.1 FGA is for transportation only and will be performed using approved DOE/WIPP procedures by personnel trained under the CCP Qualification Program.

4.13.2 FGA operators will make notifications to the Host site as necessary to comply with the Host site Safety Basis. These notifications will be made to Host site management and the VPM.

4.14 Source Control

4.14.1 CCP will provide a list of reference sources required for calibration of NDA systems used by CCP.

4.14.2 The Host site will be responsible for all reference sources. Responsibilities consist of inventory control, storage, shipment, and usage. The Host site will provide CCP the number of sources, location, isotopic distribution with activity levels, and the names of the custodian and authorized users, as required.

4.14.3 The Host site will be responsible for providing radiological control support associated with the reference sources. This support consists of maintaining the radioactive materials area (RMA) postings, periodic surveys and performing a semi-annual leak check on the sources.

4.14.4 The Host site personnel will deliver the sources to qualified CCP personnel for loading into the matrix drums. CCP personnel will be trained as users of the sources to the Host site procedures.

4.14.5 The Host site will provide support for the CCP participation in the PDP. This support includes maintaining trained PDP coordinators, preparation of the test drums, delivery and pick-up of the drums to/from the CCP NDA equipment, and responsibility for PDP source control. Host site support will be coordinated by the Host site SMR/Designee.

4.15 Acceptable Knowledge (AK)

4.15.1 CCP records personnel will maintain the auditable AK record necessary to support the AK Summary Report in accordance with the Hazardous Waste Facility Permit (HWFP), Attachment C, WAP, WCPIP, and the QAPD.

4.15.2 CCP AK personnel collect, compile, and review AK documentation in accordance with CCP-TP-005 and/or DOE/WIPP-02-3214.

4.15.3 Host site/generator personnel assist CCP AK personnel with AK collection.

4.15.4 CCP AK personnel and Host site/generator personnel develop an IWMDL for each waste stream. Each IWMDL will include facility processes, plans, and procedures that control the following waste management activities as applicable:

- Waste generating activities
- Waste retrieval activities
- Waste packaging/repackaging
- Waste treatment/processing (e.g., neutralization, deactivation, and solidification/immobilization)
- Waste inspection, testing, and characterization
- Decontamination and decommissioning (D&D) operations
- Any other activity that changes the physical, chemical, or radiological properties of waste to be characterized by CCP

4.15.5 The SMR ensures POCs/SMEs are assigned to review the new or revised IWMDLs for accuracy and completeness and provide written comments as appropriate.

4.15.6 The AKE and cognizant personnel (CP) resolve comments and questions.

4.15.7 CCP posts the new revised IWMDL on the CCP secure file transfer protocol (sftp) site.

NOTE

The activities of step 4.15.8 may be initiated as necessary by the AKE for each new waste stream and existing waste streams with unshipped containers.

4.15.8 AKA are performed in accordance with CCP-TP-005.

- [A] SPM provides SMR with the AKA results.
- [B] SMR distributes results of the AKA to designated CPs for review and comment.
- [C] AKE resolves comments with SMR and CPs.
- [D] SMR concurs with final AKA in writing.

4.15.9 CCP submits new or revised AK Summary Reports to the SMR/Designee for review and concurrence.

- [A] The SMR ensures CP review the AK Summary Report for accuracy and completeness providing comments in accordance with CCP-QP-010.

4.15.10 Host site/generator CP attends a briefing on new or revised AK Summary Reports.

4.15.11 Host site/generator personnel notifies the SPM and AKE in writing of any new revised waste management activities that would necessitate a change to the IWMDL.

4.15.12 The SPM and AKE evaluate new or revised waste management activities and determine if revision to the IWMDL and/or AK Summary Report is needed.

4.15.13 SPM request CCP Management Assessment to review and verify new or revised waste management activities that require revision to IWMDL and/or AK Summary Report.

4.15.14 The Host site will not provide any waste container to CCP for characterization until the AKE has received the latest version of the work document (including field changes, other immediate procedure changes, Timely Orders/Standing Order, Operator Aids, etc.) used to generate, package, and/or repackage the container.

- [A] The work document(s) provided to the AKE will contain the following information at a minimum:
- Identification (including revision) of the work document(s) used to generate the container
 - Type of activity (e.g., packaging/repackaging only, remediation, treatment)
 - Amount (estimated) and type (if known) of liquids
 - Type and quantity (estimated) of absorbents used
 - Type and quantity (estimated) of neutralization agents used
 - Any unexpected conditions or reactions encountered
 - General description of waste items
 - Packaging configuration (e.g., 55-gallon drum with 20 mil liner bag)
 - Filter data including model and quantity used
 - Parent container identification

4.15.15 The AKE will ensure they have obtained and reviewed the correct version of IWMDL documentation used to generate/manage a container before adding it to the AK Tracking Spread Sheet.

4.15.16 At a minimum of once per calendar quarter, Host site/generator management will review the current IWMDL and provide written assurance to the CCP SPM that the list is up to date **OR** provide necessary documentation to revise the list.

4.16 Data Validation and Reconciliation

4.16.1 Wherever CCP has obtained the services of another CBFO-certified TRU Waste Program, that program will provide CCP with BDRs completed through data generation level (DGL) reviews in accordance with their own programmatic documents.

4.16.2 CCP will provide project level validated data packages for NDE, NDA, VE, RC, and FGA.

4.16.3 The CCP SPM, and AKE will perform data reconciliation with applicable data quality objectives (DQOs) using CCP-TP-002, *CCP Reconciliation of DQOs and Reporting Characterization Data*, and CCP-TP-506, *CCP Preparation of the Remote-Handled Transuranic Waste Acceptable Knowledge Characterization Reconciliation Report*.

4.17 Measuring and Test Equipment (M&TE)

4.17.1 M&TE used by the CCP will be controlled and maintained in accordance with CCP-QP-016, *CCP Control of Measuring and Testing Equipment*.

4.17.2 The Host site will make available National Institute for Standards and Technology (NIST)-traceable calibration services for M&TE to the CCP. The Host site will maintain records on M&TE calibration in accordance with the Records Inventory and Disposition Schedule (RIDS). Copies of the Certificates of Calibration will be made available to the CCP VPM and CCP M&TE Custodian prior to issuing M&TE to CCP for use.

4.17.3 For Host site M&TE furnished for use in the CCP program, the Host site SMR or Designee will provide notification to the CCP M&TE Custodian when M&TE are added, deleted, found out-of-tolerance/defective, or failed calibration.

4.17.4 When notified of an as found, failed calibration CCP will perform an extent of condition review to assess its impact on any of the characterization processes, initiate an NCR (if applicable) and provide this info to the Host site SMR/Host site M&TE Custodian.

4.17.5 The Host site SMR/Designee will make calibration documentation and processes accessible as needed for internal and external audits.

4.17.6 The CCP M&TE Custodian will provide a recall notification for CCP M&TE that requires calibration to the Host site SMR/M&TE Custodian.

4.18 Work Standards

- 4.18.1 CCP operations personnel will work under the Host site Lockout/Tagout procedure.
- 4.18.2 CCP and Host site-provided personnel will perform quality-affecting work under CCP procedures for TRU waste characterization and certification activities.
- 4.18.3 Host site procedures and work packages will be used for non-waste characterization activities (e.g., equipment repairs).
- 4.18.4 CCP operations personnel will operate in accordance with CCP-PO-005.
- 4.18.5 CCP personnel will comply with applicable Host site procedures for activities they perform outside of the CCP system of controls.
- 4.18.6 CCP personnel will work under the Host site safety basis and work control standards. Maintenance work control activities on Host site-supplied equipment and CCP owned/leased equipment will be controlled using Host site work authorization procedures.
- 4.18.7 CCP-CM-001, *CCP Equipment Change Authorization and Documentation*, CCP-PO-026, *CCP Configuration Management*, and CCP-TP-140, *CCP Equipment Maintenance* will be followed in addition to the requirements of step 4.18.6 for CCP owned/leased equipment.
- 4.18.8 The Host site will not change the configuration of any characterization equipment used by CCP – regardless of ownership – without first obtaining written concurrence from the CCP VPM.
- 4.18.9 CCP personnel will participate in the Host site bioassay program. CCP personnel involved in VE of waste will provide routine samples at a frequency agreed upon between the Host site and NWP Radiological Safety organization. All other CCP personnel will provide samples as requested under the routine/random program established by the Host site. All CCP personnel will submit bioassay samples if required by the Host site Radiation Protection Program (RPP) to establish a baseline for activities at the Host site.

- 4.18.10 The CCP ORNL Project Manager or CCP VPM will notify the Host site SMR/Designee when new CCP personnel (NWP and subcontractors) are assigned to work at the TWPC. This notification will occur as soon as is practical.
- 4.18.11 The CCP ORNL Project Manager or CCP VPM will notify the Host site SMR when CCP personnel, NWP and subcontractors leave the TWPC as a result of reassignment or resignation. This notification will occur as soon as is practical.
- 4.18.12 The Host site SMR will notify affected organizations to support the arrival or departure of CCP personnel.
- 4.18.13 The CCP ORNL Project Manager or CCP VPM will be notified if any bioassay sample provided by CCP personnel indicates that an uptake of any radioactive isotopes may have occurred as soon as is reasonably possible.
- 4.18.14 Host site Radiological Controls personnel will perform routine surveys for contamination and radiation as specified in Host site policies or procedures. The CCP ORNL Project Manager or CCP VPM and appropriate Host site management personnel will be notified immediately upon the discovery of any loose surface contamination in any CCP-occupied areas. Access to and copies of routine survey results will be made available to CCP upon request.
- 4.18.15 The Host site will immediately notify the CCP ORNL Project Manager or CCP VPM and appropriate Host site management personnel of any abnormal continuous or fixed air sample filter analysis results from any area routinely occupied by CCP personnel.
- 4.18.16 CCP will provide historical information on the operation of any CCP equipment deployed at the Host site for the purpose of lessons learned and the implementation of any mitigating actions from these lessons learned.
- 4.18.17 For Host site-supplied equipment and facilities, the Host site is the Design Authority. It is expected that CCP will participate in review of hazards analysis for this equipment and facilities being provided.

- 4.18.18 For non-Host site-provided equipment, CCP will provide the Host site with information and documentation necessary for evaluation of compliance with the Host site's safety basis. CCP will be the Design Authority for the equipment. The programmatic limits for the operation of the characterization equipment are the responsibility of CCP as part of their Design Authority responsibilities.
- 4.18.19 CCP will control the procurement, development, maintenance, configuration management, and use of software used on all Host site and non-Host site-provided equipment used to develop quality-affecting data for waste characterization in accordance with CCP-QP-022.
- 4.19 Project Office TRU Waste Certification and WIPP Waste Information System/Waste Data System (WWIS/WDS) Data Entry
 - 4.19.1 CCP will prepare WSPFs for the subject Host site waste in accordance with CCP-TP-002.
 - 4.19.2 CCP will transmit characterization and certification data using the WWIS/WDS and CCP procedures CCP-TP-030, *CCP CH TRU Waste Certification and WWIS/WDS Data Entry* or CCP-TP-530, *CCP RH TRU Waste Certification and WWIS/WDS Data Entry*.
 - 4.19.3 CCP shall submit WSPFs to the Host site for information before submittal to CBFO. The Host site will provide written concurrence on the basis of continued compliance with procedures and programs, and CBFO-certification of the CCP program.
 - 4.19.4 The CCP WCO will document and certify that all TRU waste payload containers meet the requirements of the WAC, and submit the data to the WWIS/WDS for approval.
- 4.20 Transportation of Contact-Handled (CH) Waste and Remote-Handled (RH) Waste
 - 4.20.1 CCP Transportation is responsible for meeting all requirements for loading and shipping TRU waste certified by the CCP as approved in the WWIS/WDS.
 - 4.20.2 CCP transportation will direct TWPC loading of containers into overpacks according to CCP WCO listings and will provide the CCP WCO with the necessary data to complete the process, if required.

4.20.3 The TWPC provides and signs on behalf of DOE the Uniform Hazardous Waste Manifest, bill of lading, make notifications as required, and required markings, labels and placards for each TRU waste shipment.

4.20.4 The Host site will provide and maintain CH and RH Package Loading facilities.

4.20.5 CCP Transportation will provide technical resources, TCO and qualified personnel to perform the transportation certification, preparation of the shipment and loading of the waste for shipments.

4.20.6 The Host site will provide the equipment and trained personnel required to handle waste containers for payload assembly and loading operations.

4.20.7 CCP Transportation will provide documentation to the SMR certifying the waste for shipment according to CCP procedures.

4.20.8 The Host site will coordinate the shipment including providing prerequisite surveys.

4.21 Quality Assurance (QA)

4.21.1 All quality affecting work performed in the completion of this waste characterization, certification, and transportation scope will be in compliance with applicable DOE/CBFO-certified CCP procedures.

4.21.2 NWP QA will conduct periodic surveillances to assess compliance with applicable WIPP requirements.

4.21.3 The Host site will conduct surveillances to assess compliance with applicable procedures.

4.22 Project Control

4.22.1 CCP and the Host site will provide routine status for their respective scheduled activities.

4.22.2 CCP will maintain and provide the Host site with an up-to-date organization chart listing CCP personnel, along with associated roles and responsibilities.

4.23 Procedures

4.23.1 CCP will develop new or revised procedures in accordance with CCP-QP-010.

4.23.2 New technical operating procedures (procedures that operate equipment) developed by the CCP and scheduled to be used at the Host site, shall be evaluated by the Host site SMR to determine if the procedure shall be added to the Host site review list provided in Section 4.23.3.

4.23.3 The following documents and revisions to these documents will be provided to the SMR for review by SMEs/CP: If the procedure is an operational procedure that CCP is not currently operating to, the SMR may waive his review until CCP operations commence on site. When CCP operations return to the site the SMR will be provided all procedures listed below for review:

- CCP ORNL AK Summary Reports
- CCP Interface Waste Management Documents Lists
- CCP AK Assessments
- CCP ORNL WSPFs
- CCP-CM-001, *CCP Equipment Change Authorization and Documentation*
- CCP-CM-013, *CCP Transportation Flammable Gas Analysis (FGA)*
- CCP-HSP-014, *Health and Safety Program Implementation for CCP*
- CCP-PO-026, *CCP Configuration Management*
- CCP-QP-005, *CCP TRU Nonconforming Item Reporting and Control*
- CCP-QP-018, *CCP Management Assessment*
- CCP-TP-033, *CCP Shipping of CH TRU Waste*

- CCP-TP-047, *CCP Mobile IQ3 Gamma Scanner Operation*
- CCP-TP-053, *CCP Standard Real-Time Radiography (RTR) Inspection Procedure*
- CCP-TP-054, *CCP Adjustable Center of Gravity Lift Fixture Preoperational Checks and Shutdown*
- CCP-TP-055, *CCP Varian Porta-Test Leak Detector Operations*
- CCP-TP-066, *CCP Radiography Screening Procedure for Prohibited Items*
- CCP-TP-068, *CCP Standardized Container Management*
- CCP-TP-076, *CCP Operating the Mobile ISOCS Large Container Counter Using NDA 2000*
- CCP-TP-086, *CCP CH Packaging Payload Assembly*
- CCP-TP-113, *CCP Standard Contact-Handled Waste Visual Examination*
- CCP-TP-164, *CCP Real-Time Radiography #7 Operating Procedure*
- CCP-TP-165, *CCP Real-Time Radiography #6 Operating Procedure*
- CCP-TP-500, *CCP Remote-Handled Waste Visual Examination*
- CCP-TP-504, *CCP Dose-to-Curie Survey Procedure for Remote-Handled Transuranic Waste*
- CCP-TP-505, *CCP Removable Lid Canister/Neutron Shielded Canister Loading*
- CCP-TP-507, *CCP Shipping of Remote-Handled Transuranic Waste*
- CCP-TP-509, *CCP Remote-Handled Transuranic Container Tracking*
- CCP-TP-512, *CCP Remote-Handled Waste Sampling*

- CCP-TP-554, *CCP Remote-Handled Grapple Pre-Operational Checks and Operation*

NOTE

Examples of CP may include, but is limited to SMEs for the following as applicable to the document reviewed:

- Waste generating/packaging/repackaging processes
 - Chemical and physical characteristics of waste streams
 - Chemical compatibilities
 - Radiological properties of waste streams
 - Treatment permits
 - Nuclear Safety
 - Environmental compliance
 - Facility operations
-

4.23.4 Upon receipt of a document listed in step 4.23.3 the SMR/Designee will ensure the document is reviewed by CP responsible for the waste management activities relevant to the scope of the document.

4.23.5 As warranted, the SMR/Designee will provide written comments to CCP using Document Review Record (DRR) in accordance with CCP-QP-010.

4.23.6 CCP, at its direction, may request objective evidence to support the competency of Host site/generator reviewers.

4.23.7 The CCP SPM will confirm that the SMR/Designee written comments are resolved with the Host site SMR/Designee concurrence prior to proceeding with CCP operations under the scope of the document being reviewed.

4.23.8 The following documents, and all revisions to these documents, will be provided to the SMR/Designee as "Notify Only" during the review process:

- CCP-PO-005, *CCP Conduct of Operations*
- CCP-TP-046, *CCP Mobile IQ3 System Calibration Procedure*
- CCP-TP-048, *CCP ORNL NDA System Data Reviewing, Validating, and Reporting Procedure.*

- DOE/WIPP-02-3183, *CH Packaging Program Guidance*
- DOE/WIPP-02-3184, *CH Packaging Operations Manual*
- DOE/WIPP-02-3185, *CH Packaging Maintenance Manual*
- DOE/WIPP-02-3284, *RH Packaging Operations Manual*
- DOE/WIPP-02-3283, *RH Packaging Program Guidance*

4.23.9 The following document and all revisions are controlled by CBFO. Upon receiving notification of issue/revision, CCP will notify the Host site for USQ screening prior to implementation at the Host site.

- DOE/WIPP-06-3345, *Waste Isolation Pilot Plant Flammable Gas Analysis*

4.23.10 Other controlled documents used by CCP are available to the Host site SMR/Designee for information purposes at the sftp site.

4.24 Document/Records Transmittals

4.24.1 Documents listed in this section, which are provided from one organization to the other as information copies, may be transmitted via memo, fax, e-mail, or formal correspondence. Documents identified as QA records will be transmitted in accordance with CCP-QP-008, *CCP Records Management*.

4.24.2 Information copies of documents to be provided to the Host site by CCP include but not limited to:

- [A] Copies of NCRs and Corrective Action Requests (CARs), as applicable.
- [B] Copies of ORNL AK Summary Reports.
- [C] Copies of ORNL AK source documents and source document summaries, as requested.
- [D] Copies of semi-annual trending summary reports.
- [E] Copies of QA surveillance reports.

- [F] Copies of ORNL WSPFs.
- [G] Copies of VE, NDE, and NDA data, as requested.
- [H] Copies of CCP Source/Receipt Inspection Verification Sheets and associated objective evidence for each shipment.
- [I] Information on chemical usage and copies of applicable MSDSs/SDSs as requested for inventory or reporting reasons.
- [J] Copies of training requirements and associated training records for Host site personnel supporting CCP.
- [K] A copy of the RIDS developed by CCP.
- [L] Results of all DOE/CBFO/New Mexico Environment Department (NMED)/U.S. Environmental Protection Agency (EPA) or other regulatory audit or compliance/enforcement actions that may impact CCP's ability to characterize and transport TRU waste.
- [M] Copy of final data package to WIPP via WWIS/WDS, as requested.
- [N] Documented evidence of participating in and passing the CBFO PDP.
- [O] NMED approval of the CBFO Certification Audit Report.
- [P] EPA Tier 1 approval of CCP processes and activities at ORNL.
- [Q] List of equipment requiring calibration (M&TE List)

4.24.3 Documents to be provided to CCP by Host site include:

- [A] Documentation of required training.
- [B] Documentation of training completion for CCP and Host site personnel for training received from the Host site.
- [C] Copies of AK source documentation requested by CCP.

- [D] Radiological dose rate and surface contamination results on waste drums as needed to support WWIS/WDS data entry.
- [E] Radiological information as described in Section 3.1.2[A].
- [F] Copies of NCRs, deficiency reports, or other nonconformance documentation per Section 4.6.
- [G] Copies of the results of Host site assessments pertaining to CCP.
- [H] Copies of calibration certifications for M&TE used by CCP.
- [I] Copies of QA surveillance reports.
- [J] Copies of the Uniform Hazardous Waste Manifest, bill of lading and Shipment Notifications.
- [K] Any documentation required by CCP to perform its scope of work, including correspondence pertaining to characterization activities, and Host site/generator waste management activities.
- [L] Host site generated AB documentation concerning CCP related activities and equipment, including USQ's.

4.25 Authorization Basis (AB) and Configuration Management

- 4.25.1 The Host site has primary responsibility to ensure that CCP equipment and processes have been appropriately considered within the DOE-approved, Host site DSA.
- 4.25.2 CCP has primary responsibility to control CCP operations and CCP equipment configurations to ensure compliance with Host site procedures that protect the personnel, public, and environment.
- 4.25.3 For CCP provided equipment, CCP will provide the documentation necessary for Host site to perform the evaluation against its safety analysis. This documentation may include health and safety plans, hazard assessments, system descriptions, equipment drawings, or other information deemed necessary through mutual agreement between CCP and the Host site.

4.25.4 For Host site provided equipment, CCP will review operational and AB documentation, including USQs, to ensure the safety of CCP personnel while operating the equipment.

4.25.5 All changes to Host site equipment operated by CCP and CCP Vendor owned equipment will be controlled by the Host site Configuration Management and Work Control Program to ensure appropriate AB evaluations are conducted and associated controls are established.

4.25.6 The Host site will submit all changes to AB requirements that affect CCP operations for review and concurrence by CCP prior to implementation.

4.26 Notification

4.26.1 The Host site has primary responsibility to notify CCP prior to changes in the Host sites used by CCP for characterization activities or changes that may impact operations.

4.26.2 The Host site has primary responsibility to notify CCP prior to changes to Host site/generator policies, processes, or procedures that may affect CCP characterization activities or operations.

4.26.3 CCP has primary responsibility to ensure changes to equipment are in accordance with CCP-CM-001.

4.26.4 CCP has primary responsibility to notify the Host site prior to configuration changes to CCP or CCP vendor-owned equipment.

4.26.5 The Host site has primary responsibility to notify CCP when repairs or modifications are needed on the CH or RH transportation trailers, packaging equipment, or casks.

4.26.6 CCP is responsible for performing or coordinating repairs and modifications to the CH or RH transportation trailers, packaging equipment, or casks.

4.27 Procurement

4.27.1 TWPC is shown as a supplier of procurement services on the NWP QSL. TWPC may procure, inspect, and perform receipt inspection of whatever items are listed in the most current NWP QSL for the CCP scope of work. TWPC will perform these activities in accordance with its QSL-accepted program.

4.27.2 TWPC shall use the specifications found on the CCP sftp site when ordering gas standards used for FGA operations.

4.28 Occurrence Reporting and Processing System (ORPS) and Price-Anderson Amendments Act (PAAA)

4.28.1 CCP, through NWP established programs, maintains the responsibility for reporting potential Price Anderson Amendments Act (PAAA) issues resulting from the certification and transportation of TRU waste by CCP. This includes filing any Occurrence Reporting and Processing System (ORPS) reports resulting from the certification or transportation of TRU waste by CCP at the Host site.

4.28.2 The Host site maintains the responsibility for reporting potential PAAA issues resulting from issues with safe operation of CCP characterization activities (e.g., Radiation Safety, IS&H, Industrial Hygiene, Maintenance, Lockout/Tagout, Conduct of Operations, etc.) at the Host site. This includes filing any ORPS reports resulting from issues with safe operations of CCP characterization activities at the Host site.

4.28.3 Both the Host site and CCP reserve the right to file ORPS and PAAA reports, as they deem appropriate, upon coordination and consultation with one another concerning certification or safe operation of characterization activities by CCP at the Host site.

4.28.4 Both the Host site and CCP shall invite the other to participate in the investigation of any waste characterization event that results in an ORPS or PAAA report.

4.28.5 Both the Host site and CCP shall support and participate in investigations when CCP characterization activities result in an ORPS or PAAA report.

5.0 RECORDS

5.1 Records generated during the performance of the waste characterization and certification scope are controlled by CCP.

5.2 QA records generated by CCP will be maintained in accordance with CCP-QP-008 and dispositioned in accordance with and CCP-QP-028, *CCP Records Filing, Inventorying, Scheduling, and Dispositioning*.

5.3 The Host site will maintain the following records in accordance with Host site requirements. The list includes, but is not limited to, the following:

5.3.1 MSDS/SDS

5.3.2 Calibration Certifications

6.0 OVERSIGHT

NOTE

Through the Inter-Entity Work Order (IEWO) contract between ORO and NWP, and the associated SOW, the ORO has delegated the authority to characterize and certify TRU waste to be shipped to the WIPP. Nonetheless, the Host site retains the responsibility for proper disposal as the waste generator on behalf of DOE. Accordingly, the following actions will define the level of oversight of the CCP by Host site personnel.

6.1 The Host site will accept successful completion of the CBFO certification audit as adequate evidence that the CCP implementation at the Host site is fully compliant with waste disposal requirements as set forth in the CH and RH WAC and WAP.

6.2 Following successful completion of the CBFO certification audit, the Host site QA will conduct periodic surveillances to ensure CCP work is conducted in accordance with CCP procedures. These surveillances will be conducted in accordance with Host site QA procedures.

6.3 The Host site QA will provide copies of its surveillance reports to the CCP SPM. The CCP SPM and NWP QA will take the following actions:

6.3.1 Review the Host site surveillance reports for any finding or other deficiencies against the CCP scope of work.

6.3.2 Document and perform corrective actions in accordance with applicable NWP issues management procedures.

6.3.3 Provide Host site QA with CCP actions to correct the identified deficiencies.

6.3.4 NWP QA will maintain an information file of the Host site surveillance reports conducted on the CCP scope of work.

Figure 1 – Nuclear Waste Partnership – TWPC

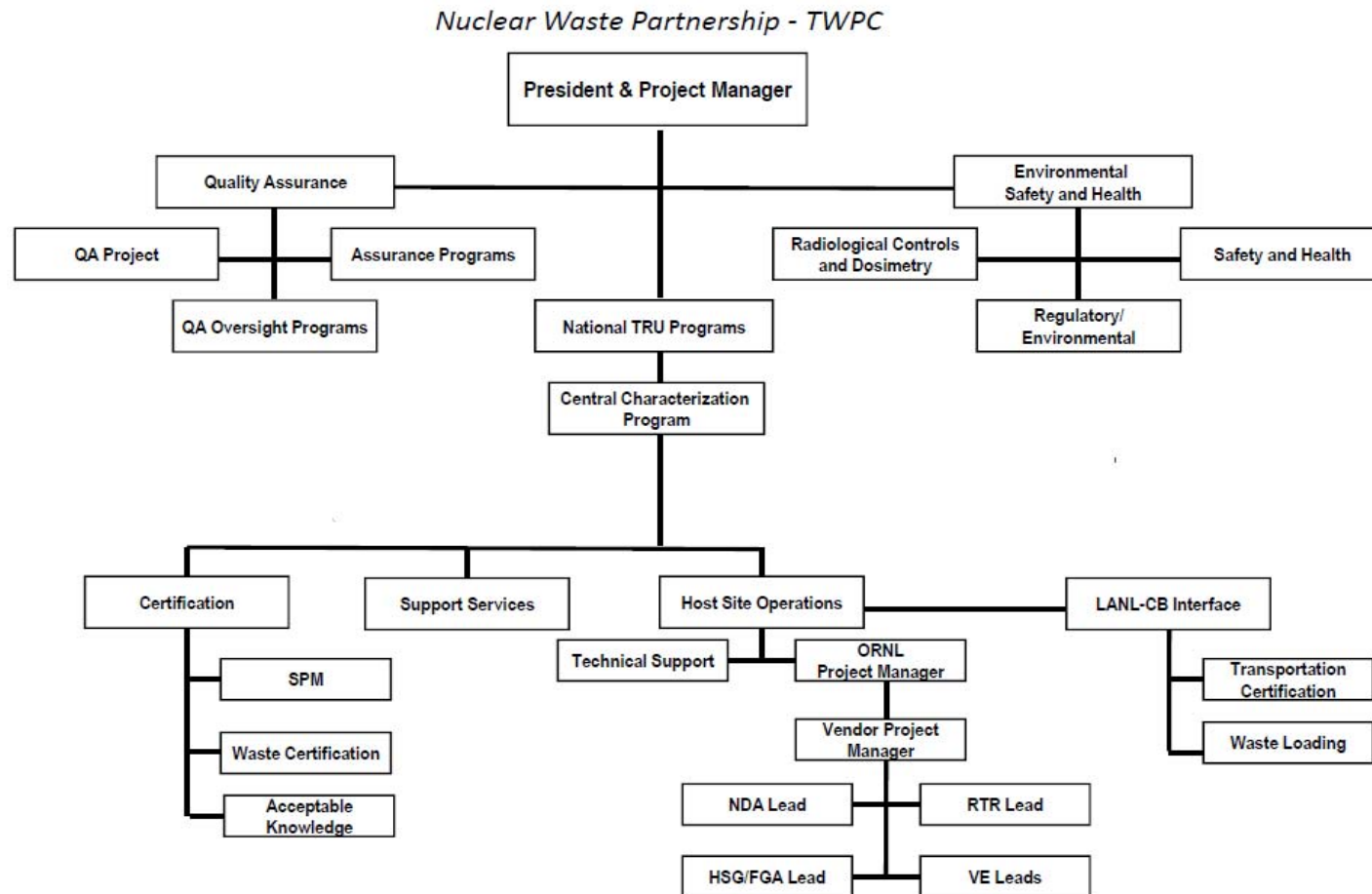
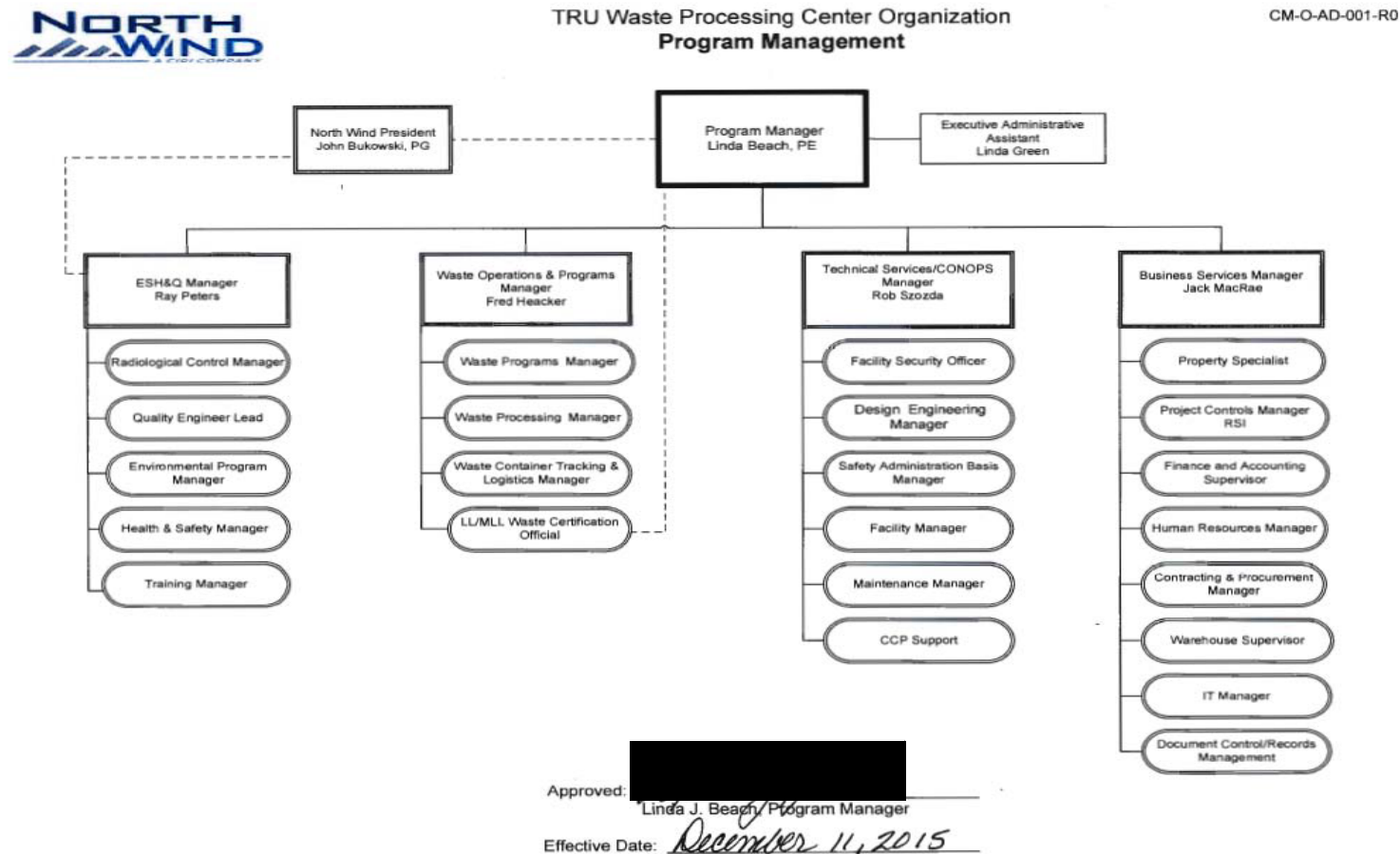


Figure 2 – TWPC Management Organization Chart



CCP-PO-500

Revision 7

CCP/ANL RH-TRU Waste Interface Document

EFFECTIVE DATE: 01/14/2016

Irene Joo

PRINTED NAME

APPROVED FOR USE

RECORD OF REVISION

Revision Number	Date Approved	Description of Revision
0	06/01/2006	Initial issue.
1	11/16/2006	Revised to implement the Waste Isolation Pilot Plant Hazardous Waste Facility Permit requirements resulting from the Section 311/Remote-Handled (RH) Permit Modification Request (PMR).
2	08/02/2011	Revised to incorporate remote-handled (RH) waste sampling and update actual work process.
3	10/01/2012	Revised to incorporate Nuclear Waste Partnership (NWP) transition changes.
4	10/11/2012	Revised to address Carlsbad Field Office (CBFO) Corrective Action Request (CAR) 12-039.
5	02/11/2013	Revised to clarify roles associated with providing measuring and testing equipment (M&TE) Certificates of Calibration to Central Characterization Program (CCP).
6	06/21/2013	Revised to implement the Permit Modification Request Class 2 approved by New Mexico Environment Department (NMED) dated March 13, and add CH-TRAMPAC for shielded container shipments.
7	01/14/2016	Revised to replace CCP-QP-006, <i>CCP Corrective Action Reporting and Control</i> with WP 15-GM-1002, <i>Issues Management Processing of Waste Isolation Pilot Plan (WIPP) Forms</i> and make any editorial changes needed. Clarified roles and additional responsibility items in Sections 3.4, 3.6, 4.8, and 4.17.

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1.0 PURPOSE

The Central Characterization Program (CCP) is a mobile program designed to characterize, certify, and transport transuranic (TRU) waste from various U.S. Department of Energy (DOE) sites to the Waste Isolation Pilot Plant (WIPP) in New Mexico. The CCP is operated by Nuclear Waste Partnership (NWP), at the direction of the DOE Carlsbad Field Office (CBFO).

CBFO has deployed the CCP to the Argonne National Laboratory (ANL). CCP has been deployed to this site to process remote-handled (RH) TRU waste.

This document defines the interfaces between the CCP and the Host site organization(s) necessary to perform this work. This document is invoked via a Statement of Work (SOW) between the Host site organization and NWP. This document is intended to clarify and expand on details contained in the upper tier SOW and program documents. It is not intended to be used in lieu of a task-specific SOW.

CCP has primary responsibility for waste characterization activities. CCP services include compilation, reporting, and confirmation of acceptable knowledge (AK), nondestructive examination (NDE), radiological characterization, visual examination (VE), RH waste sampling, data validation and verification, waste certification, WIPP Waste Information System/Waste Data System (WWIS/WDS) Data Entry, and Waste Transportation Packaging and Shipment.

In providing these services, CCP may opt to use other CBFO-certified TRU programs. CCP will accept batch data reports (BDRs) validated through the data generation level from these other certified programs and perform all project office activities in accordance with the CCP program.

These services will be performed with CCP and/or Host site equipment with appropriate DOE/CBFO-certified procedures. All services provided by CCP will comply with RH-TRU requirements delineated in DOE/WIPP-02-3214, *Remote-Handled TRU Waste Characterization Program Implementation Plan* (WCPIP); DOE/WIPP-02-3122, *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant* (WAC); and the *Waste Isolation Pilot Plant Hazardous Waste Facility Permit* (WAP), including those requirements pertaining to waste disposal and transportation. This work will be performed under a DOE/CBFO-certified quality assurance (QA) program that meets requirements defined in DOE/CBFO-94-1012, *U.S. Department of Energy Carlsbad Field Office Quality Assurance Program Document* (DOE/CBFO-QAPD).

The Host site may augment CCP characterization efforts as requested by CCP. Where required, all augmented services provided by the Host site shall comply with CCP-certified procedures.

The Host site has primary responsibility for assuring that requirements for safety, (including Radiological Control, Emergency Management, Industrial Safety, and Industrial Hygiene [IH]), security, safety basis, environmental permits, and other areas are met for CCP activities, and that CCP activities support the scheduled objectives.

Host site maintains ownership of the waste and responsibility for its disposal. This responsibility includes additional chemical sampling and analysis deemed necessary by the WIPP Co-Permittees.

Throughout this document the Host site contractors' responsibilities are limited to the specific CCP activities being conducted within their facilities.

The CCP will certify DOE RH-TRU waste at the ANL for disposal in accordance with the certification authority that has been granted by the DOE/CBFO.

This document addresses specific requirements for the following areas:

- Training and Qualification
- Container Management
- Deficiencies and Nonconformances
- VE
- Radiological Characterization (includes dose-to-curie methodology)
- NDE
- RH Waste Sampling
- AK
- Data Validation and Reconciliation
- Measuring and Test Equipment (M&TE)
- Work Standards
- QA
- Project Control
- Procedures
- Document Transmittals
- Procurements
- Records
- Waste Certification and WWIS/WDS Data Entry
- Transportation
- Authorization Safety Basis and Configuration Management (CM)

The Host site will report conditions or concerns that have or may have safety, health, QA, security, operational or environmental implications to the DOE Argonne Site Office (DOE/ASO). CCP shall report their similar issues to the Host site and to DOE/CBFO.

2.0 REQUIREMENTS

This document implements the applicable requirements of the following:

CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*

CCP-PO-002, *CCP Transuranic Waste Certification Plan*

CCP-PO-003, *CCP Transuranic Authorized Methods For Payload Control (CCP CH-TRAMPAC)*

CCP-PO-005, *CCP Conduct of Operations*

CCP-PO-026, *CCP Configuration Management*

CCP-PO-505, *CCP Remote-Handled Transuranic Waste Authorized Methods for Payload Control (CCP RH-TRAMPAC)*

DOE/WIPP-02-3183, *CH Packaging Program Guidance*

DOE/WIPP-02-3214, *Remote-Handled TRU Waste Characterization Program Implementation Plan*

DOE/WIPP-02-3283, *RH Packaging Program Guidance*

DOE/WIPP-06-3345, *Waste Isolation Pilot Plan Flammable Gas Analysis*

DOE/WIPP-94-1012, *U.S. Department of Energy Carlsbad Field Office Quality Assurance Program Document (QAPD)*

WP 13-1, *Nuclear Waste Partnership LLC, Quality Assurance Program Description*

Argonne National Laboratory Radiological Safety Program Description

Argonne National Laboratory Radiation Protection Program – Implementation of 10 CFR 835 *Occupational Radiation Protection*

3.0 RESPONSIBILITIES

CCP has primary responsibility for performing transuranic (TRU) waste characterization and certification activities in accordance with governing requirements described herein. CCP services include compilation, reporting, and confirmation of Acceptable Knowledge (AK), nondestructive assay (NDA), radiological characterization (RC), visual examination (VE), flammable gas analysis (FGA) for waste certification, WIPP Waste Information System (WWIS)/Waste Data System (WDS) data entry, and transportation activities.

The Host site Contractors' responsibilities are limited to the CCP activities described herein being performed on their behalf and for performing TRU waste management activities in accordance with Host site/generator documents provided to CCP.

3.1 Initial Setup

3.1.1 CCP is responsible for the following during initial setup:

- [A] Providing information and procedures to the Host Site Management Representative (SMR)/Designee, who will coordinate facility, QA, and Environmental Safety & Health (ES&H) reviews to determine satisfactory compliance with Host site safety basis requirements, radiological control requirements, and other safety and operational requirements.
- [B] Completing readiness activities as needed to support authorization of CCP activities at the Host site.
- [C] Providing project support to complete administrative reviews and approvals of technical and administrative procedures or processes.
- [D] Mobilization of project management and staff.

3.2 Operations

3.2.1 CCP is responsible for the following activities to support operations:

- [A] Performing system start-up and calibration of characterization equipment at the Host site.
- [B] Performing safety walk-downs, management, and laboratory assessments prior to operation.

- [C] Responding to and resolving assessment and surveillance findings for CCP startup activities.
- [D] Ensuring CCP and Host site personnel are trained and qualified in accordance with the requirements specified in Section 4.1.
- [E] Successful completion of DOE/CBFO Certification Audit.
- [F] Providing drum tracking support for the drums introduced into characterization activities.
- [G] CCP, through NWP established programs, maintains the responsibility for reporting potential Price-Anderson Amendments Act (PAAA) issues resulting from the certification of TRU waste by CCP at ANL. This includes filing any Occurrence Reporting and Processing System (ORPS) reports resulting from the certification of TRU waste by CCP at ANL. CCP shall allow the Host site to participate in the investigation of any waste certification event that results in an ORPS or PAAA report.
- [H] CCP shall support and participate in Host site investigations when CCP characterization activities result in a Host site initiated ORPS or PAAA report.
- [I] CCP shall maintain records in accordance with CCP-QP-008, *CCP Records Management*, and CCP-QP-028, *CCP Records Filing, Inventorying, Scheduling, and Dispositioning*.

3.2.2 The Host site provides the following support for CCP activities:

- [A] Radiological controls as needed to support characterization activities, including:
 - Radiological postings.
 - Radiation protection surveys, both initial and routine, on characterization equipment and provide approved survey reports to the CCP Site Project Manager (SPM) as required.
 - Personnel dosimetry.
 - Dose assessments and dosimetry reports.

- Calibrated and source checked survey instrumentation, as required.
 - Radiological Work Permits (RWP) to support CCP activities, as required.
 - Bioassay sample collection, evaluation, and reports. Bioassay reports will be provided to the CCP Vendor Project Manager (VPM) within 90 days of sample collection, if applicable.
 - Radiological source controls.
 - Radiological Technicians for monitoring.
 - Responsible for secondary generated waste.
 - Personal Protective Equipment, as necessary.
 - Personnel facilities to accommodate the characterization and loading process.
- [B] Provides site-specific training, as needed, to ensure safe operations within the facility.
- [C] Provides ES&H support, as needed.
- [D] Provides Fire Protection and Emergency Management support, as needed.
- [E] Provides authorization basis oversight, including Unreviewed Safety Question (USQ) evaluations.
- [F] Provides environmental impact oversight and support, as needed.
- [G] Provides on-site sample and drum transportation.
- [H] Provides drum handling, inventory control, and storage location tracking.
- [I] Provides personnel to be trained and qualified under the CCP program as needed to support CCP activities such as AK, VE, radiological characterization, and solids sample collection.

- [J] Performs document classification reviews as required to allow the public release of documents such as the AK Summary Report.
- [K] The Host site maintains the responsibility for reporting potential PAAA issues resulting from issues with safe operation of CCP characterization activities (e.g., Technical Safety Requirements, Radiation Safety, Industrial Safety, IH, Maintenance, Lockout/Tagout, Conduct of Operations, etc.) at ANL. This includes filing any ORPS reports resulting from issues with safe operation of CCP characterization activities at ANL. The Host site shall allow CCP to participate in investigations resulting in ORPS or PAAA reports from issues with safe operation of CCP characterization activities at ANL.
- [L] The Host site will be allowed to participate in CCP investigations when a waste certification event results in a CCP initiated ORPS or PAAA report.
- [M] Provides adequate space and file storage capacity for CCP personnel to maintain records.

3.3 CCP Project Manager

- 3.3.1 Functions as CCP's primary interface and point-of-contact between CCP and the SMR/Designee for waste characterization and certification activities.
- 3.3.2 Unless otherwise assigned herein, ensures documents listed in step 4.17.3 are provided to the Host site.
- 3.3.3 Ensures sufficient characterization equipment and personnel are available to perform the required characterization activities at the Host site.
- 3.3.4 Provides status on CCP characterization operations to the SMR/Designee, as required.
- 3.3.5 Works in conjunction with SMR/Designee to establish and maintain reasonable and appropriate throughput of waste containers and establish defensible radiological characterization approach.
- 3.3.6 Ensures CCP management and CBFO are informed of safety, compliance, or production issues impacting CCP activities.

- 3.3.7 Provides status on CCP characterization operations to the Host site SMR/Designee.
- 3.3.8 Reviews required software QA per CCP-QP-022, *CCP Software Quality Assurance Plan*.
- 3.4 CCP Site Project Manager (SPM)
 - 3.4.1 Functions as CCP's primary WIPP Waste Acceptance Criteria (WAC), Remote-Handled TRU Waste Characterization Program Implementation Plan (WCPIP), and Waste Analysis Plan (WAP) subject matter expert (SME) and compliance authority.
 - 3.4.2 Ensures the AK Summary Report for waste characterization by the CCP is provided to the Host Site Management Representative HSMR/Designee.
 - 3.4.3 Ensures Waste Stream Profile Forms are reviewed and approved.
 - 3.4.4 Ensures that project level verification and validation of batch data reports (BDRs) are completed.
- 3.5 Acceptable Knowledge Expert (AKE)
 - 3.5.1 Collects, compiles reviews, and documents AK in accordance with CCP-TP-005, *CCP Acceptable Knowledge Documentation*.
 - 3.5.2 Ensures CCP has obtained necessary container information prior to characterization.
- 3.6 Quality Assurance (QA) Engineer
 - 3.6.1 Functions as CCP's primary interface and point-of-contact for QA matters between CCP, Host site, DOE/ASO, and DOE/CBFO.
 - 3.6.2 Validates the Nonconformance Reports (NCRs) generated by CCP personnel performing characterization activities at the Host site.
 - 3.6.3 Provides copies of NCRs for information to the Host site SMR/Designee, as requested.
 - 3.6.4 Ensures that nonconformances are dispositioned in a timely manner in accordance with CCP-QP-005, *CCP TRU Nonconforming Item Reporting and Control*.

3.6.5 Ensures receipt inspection per CCP-QP-026, *CCP Inspection Control*, of procured items and services is performed.

3.7 Host Site Management Representative (SMR)/Designee

3.7.1 Functions as the Host site's primary interface and point-of-contact between the Host site and CCP.

3.7.2 Ensures cognizant Host site and generator POCs/SMEs are identified and available as necessary to support the review of CCP documents defined in Step 4.17.3.

3.7.3 Coordinates, review, provides comments, and approves comment resolutions on documents. This includes facilitating generator document review and comment resolution as necessary. The review and comment resolution will be documented in accordance with CCP-QP-010, *CCP Document Preparation, Approval, and Control*.

3.7.4 Ensures CCP personnel have access to facilities to observe operations and interview personnel associated with generation, packaging, repackaging, or treatment of TRU waste.

3.7.5 Ensures needed site infrastructure support, such as radiological, industrial safety and IH, is available for waste characterization.

3.7.6 Ensures Host site-specific training is provided to the CCP VPM, as requested.

3.7.7 Coordinates review, provides comments, and approves comment resolutions on procedures listed in Section 4.17.3 for the purpose of ensuring facility safety requirements are met.

3.7.8 Provides local support to CCP, including but not limited to VE, radiological characterization, and sampling personnel to support characterization operations as needed. Also provides personnel to support the CCP AK Experts (AKE) in the collection of required documents and procedures as needed.

3.7.9 Ensures that periodic QA surveillances of CCP operations by the Host site are conducted and reported to CCP.

3.7.10 Distributes the CCP documents listed in Section 4.17.3 to Host site reviewers as required by the Host site administrative controls.

3.7.11 Reviews and concurs in accordance with CCP-QP-010, *CCP Document Preparation, Approval, and Control*, on documents in Section 4.17.3 of this Interface Document.

3.7.12 Provides facilities, construction services, utilities, phone services, office services, and supplies.

3.8 CCP Vendor Project Manager (VPM)

3.8.1 Obtains Host site management daily release/approval prior to performing CCP operations.

3.8.2 Functions as CCP's primary interface and point-of-contact between CCP and the Host site SMR/Designee for characterization field operations.

3.8.3 Provides pre-operation briefings when activities are being conducted.

3.8.4 Ensures that in-process documents and the documents listed in Section 4.18.2 are transmitted to the CCP Site Project Office as soon as practicable in accordance with CCP-QP-008.

3.8.5 Ensures applicable Material Safety Data Sheets (MSDS) are maintained and available to support operations.

3.8.6 Provides oversight of field operations to ensure safe, efficient operations.

3.8.7 Supervises day-to-day TRU waste characterization activities.

3.8.8 Notifies the CCP SPM and the Nuclear Facility Manager of any abnormal events associated with safe operation of CCP characterization activities for reporting purposes.

3.8.9 Notifies the Host site SMR/Designee of any potential ORPS or Noncompliance Tracking System-Reportable PAAA issues resulting from the certification of TRU waste by CCP at ANL.

3.9 Waste Certification Official (WCO)

3.9.1 Obtains approved Waste Stream Profile Form (WSPF) for containers to be certified.

3.9.2 Validates the CCP WWIS/WDS Data Spreadsheet.

- 3.9.3 Certifies the data for the containers to be certified as identified on the CCP WWIS/WDS Data Spreadsheet.
- 3.9.4 Submits the container data from the CCP WWIS/WDS Data Spreadsheet to the WWIS/WDS Characterization and Certification Modules as applicable.
- 3.10 Transportation Certification Official (TCO)
 - 3.10.1 Ensures CCP Transportation personnel are trained and qualified to perform WIPP-complaint CH and RH TRU waste packaging and loading operations at the Host site prior to starting work activities and are listed on the current LOQI.
 - 3.10.2 Provides oversight of CCP Transportation personnel for payload and Overpack assembly and loading.
 - 3.10.3 Builds payloads from certified containers and Overpacks provided by WCOs in WWIS/WDS.
 - 3.10.4 Certifies payloads for transportation to and disposal at WIPP.
 - 3.10.5 Builds shipments from approval payloads in WWIS/WDS.

4.0 PROCEDURE

4.1 Training and Qualification

- 4.1.1 CCP personnel or Host site personnel who perform work under CCP procedures will be trained and qualified to WIPP requirements in accordance with CCP-QP-002, *CCP Training and Qualification Plan* and/or CCP-QP-040, *Support Training*, as applicable.
- 4.1.2 CCP and Host site personnel assigned to field operations must complete the Host site-specific training. The SMR will ensure the Host site-specific training documentation is sent to CCP Training.
- 4.1.3 Both the CCP training and Host site-specific training must be completed prior to the individual being assigned to perform independent work at the Host site.
- 4.1.4 Administrative work, such as BDR reviews requiring no access to the characterization activities or processes at the Host site, may be completed by personnel who have not completed the required Host site-specific training. Personnel who have not completed Host site-specific training will not be allowed unescorted access to the characterization activities.
- 4.1.5 A LOQI will be monitored daily by the CCP VPM to confirm CCP personnel and Host site personnel assigned to CCP are qualified.

4.2 Container Management

- 4.2.1 The Host site is responsible for drum movement and storage.
- 4.2.2 The Host site will provide the dose rate and surface contamination information necessary to certify the container or canister for disposal.
- 4.2.3 CCP is responsible for container management throughout the CCP characterization process.
- 4.2.4 The Host site is responsible for providing documented information to the CCP SPM on any modification to a drum or canister after closure and/or AK has been approved.
- 4.2.5 The CCP SPM will review the documented information of modified drums and will notify the SMR when the drums are approved for entrance into the CCP characterization process.

4.3 Deficiencies and Nonconformances

4.3.1 CCP Identified Deficiencies and Nonconformances

NOTE

QA will confirm appropriate closure of the deficiencies that are resolved by CCP.

- [A] If CCP personnel identify a nonconformance condition associated with a waste container during the CCP characterization or certification process, CCP personnel will initiate an NCR in accordance with CCP-QP-005.
 - [B] The Host site SMR/Designee may request any supporting documentation needed by the Host site. CCP will ensure appropriate closure of the deficiency. A copy of any CCP NCR related to DOE TRU waste at the ANL will be provided to the Host site SMR/Designee upon request.
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NOTE

In some cases, ANL may perform the work required to resolve deficiencies identified in CCP NCRs and will initiate internal documentation as required by the ANL program. However, the CCP NCRs will remain open and administrative hold will remain on the affected containers until resolution of the NCR condition has been confirmed by CCP under its certified program. At that point, CCP will close the NCRs.

- [C] **IF** the deficiency or nonconformance cannot be resolved by the CCP (e.g., does not meet TRU Waste Acceptance Criteria), **THEN** the specific drum will be returned with all required documentation to the Host site for disposition.
- [D] CCP personnel will immediately notify the CCP VPM of any abnormal event associated with the safe operation of CCP characterization activities. The CCP VPM will notify the CCP SPM and the Nuclear Facility Manager of the abnormal event.

4.3.2 Host site Identified Deficiencies and Nonconformances

- [A] Deficiencies or nonconformances identified by the Host site during this project that affect waste characterization or certification activities shall be promptly identified to the CCP VPM, who will initiate an NCR in accordance with the

existing CCP deficiency reporting process in accordance with CCP-QP-005.

4.4 Visual Examination (VE)

4.4.1 CCP will conduct VE at the time of waste packaging or as required by the governing documents in accordance with CCP-TP-500, *CCP Remote-Handled Waste Visual Examination*, using a facility provided by the Host site.

4.4.2 Host site will be responsible for all maintenance and repairs to the facility used for VE and/or repackaging operations.

4.5 Radiological Characterization

4.5.1 The Host site will provide a technical lead to support radiological characterization efforts based on the use of AK for stored RH-TRU waste.

4.5.2 CCP will provide qualified personnel, including Host site personnel, to perform radiological characterization activities.

4.5.3 The Host site will provide support for the CCP for performing calibration of Radiological Characterization instrumentation. This support includes delivery of surrogate drums and source control, as needed.

4.5.4 If the preliminary radiological results indicate an individual drum, or suite of RH-TRU drums staged for characterization in the Host site, contains a ²³⁹Pu fissile gram equivalent amount greater than 100 grams, the appropriate Host site Shift Supervisor and Facility Manager shall be immediately notified. The Host site operations will remove the container(s) and provide storage in a safe configuration. The CCP will provide a finalized Radiological Characterization analysis report to the Host site SMR/Designee within seven days.

4.6 RH Waste Sampling

4.6.1 CCP, with Host site's concurrence, will prepare and approve a Sampling and Analysis Plan (SAP) per the requirements of the WCPIP or Section C1 of CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan* when sampling S3000 or S4000 waste stream.

4.6.2 CCP will conduct RH waste sampling with CCP qualified operators per CCP-TP-512, *CCP Remote-Handled Waste Sampling*, and the SAP.

4.6.3 RH waste sampling is performed with Host site facility equipment.

4.6.4 Host site is responsible for the maintenance of the facility equipment used for RH waste sampling.

4.7 Source Control

4.7.1 No Special Nuclear Material (SNM) sources are anticipated to be required to support radiological characterization.

4.7.2 The Host site will be responsible for management of all Radiological Characterization Non-SNM reference sources. Responsibilities consist of: inventory control, storage, shipment, and usage. CCP will provide the Host site the number of sources and isotopic distribution with activity levels of the sources CCP needs to bring on site. The Host site will provide CCP the names of the custodian and authorized users when required or requested by CCP.

4.7.3 The Host site will be responsible for providing radiological control support associated with the CCP non-SNM reference sources. This support consists of maintaining the radioactive materials area postings, periodic surveys and performing a semi-annual leak check on the sources as requested by CCP.

4.7.4 The Host site, as custodian of non-SNM sources, will provide to CCP the necessary sources for calibration as requested. Host site personnel will load the sources into the matrix drums as requested by CCP. CCP personnel will be trained as users of the sources to the Host site procedures, as required.

4.8 Acceptable Knowledge (AK)

4.8.1 CCP records personnel will maintain the auditable AK record necessary to support the AK Summary Report in accordance with the WIPP WAP and DOE/CBFO-QAPD.

4.8.2 CCP AK personnel collect, compile, and review AK documentation in accordance with CCP-TP-005, *CCP Acceptable Knowledge Documentation* and/or the WCPIP.

[A] Site Management Representative (SMR) will assist CCP AK personnel with AK collection.

4.8.3 CCP AK personnel and Host site/generator personnel develop an Interface Waste Management Documents List (IWMDL) that includes facility processes, plans, and procedures that control the following waste management activities as applicable:

- Waste generating activities
- Waste retrieval activities
- Waste packaging/repackaging
- Waste treatment/processing (e.g., neutralization, deactivation, and solidification/immobilization)
- Waste inspection, testing, and characterization
- D&D operations
- Any other activity that changes the physical, chemical, or radiological properties of waste to be characterized by CCP

[A] The AKE develops the new or revised IWMDL in accordance with CCP-TP-005 using the existing body of AK documentation.

[B] The SMR ensures cognizant Host site/generator personnel (CP) are assigned to review the new or revised IWMDL for accuracy and completeness and provide written comments as appropriate.

[C] The AKE and SMR resolve comments and questions.

[D] CCP posts the new revised IWMDL on the CCP secure file transfer protocol (sftp) site.

NOTE

This note applies to Step 4.8.4. The activities of Step 4.8.4 may be initiated as necessary by the AKE for existing waste streams, new waste streams, or during AK revisions/updates.

- 4.8.4 AK Assessments (AKA) are performed in accordance with CCP-TP-005.
 - [A] SPM provides SMR with the AKA results.
 - [B] SMR distributes results of the AKA to designated CPs for review and comment.
 - [C] AKE resolves comments with SMR and CPs.
 - [D] SMR concurs with final AKA in writing.
- 4.8.5 CCP submits new or revised AK Summary Reports to the SMR/Designee for review and concurrence.
 - [A] The SMR ensures CP review the AK Summary Report for accuracy and completeness providing comments in accordance with CCP-QP-010.
- 4.8.6 A Host site/generator CP attends a briefing on new or revised AK Summary Reports.
- 4.8.7 SMR notifies the SPM and AKE in writing of any new revised waste management activities that would necessitate a change to the IWMDL.
- 4.8.8 The SPM and AKE evaluate new or revised waste management activities and determine if revision to the IWMDL and/or AK Summary Report is needed.
- 4.8.9 The Host site will not provide any waste container to CCP for characterization until the AKE has received the latest version of the work document (including field changes, other immediate procedure changes, Timely Orders/Standing Order, Operator Aids, etc.) used to generate, package, and/or repack the container.
 - [A] The work document(s) provided to the AKE will contain the following information at a minimum:

- Identification (including revision) of the work document(s) used to generate the container
- Type of activity (e.g., packaging/repackaging only, remediation, treatment)
- Amount (estimated) and type (if known) of liquids
- Type and quantity (estimated) of absorbents used
- Type and quantity (estimated) of neutralization agents used
- Any unexpected conditions or reactions encountered
- General description of waste items
- Packaging configuration (e.g., 55-gallon drum with 20 mil liner bag)
- Filter data including model and quantity used
- Parent container identification

4.8.10 The AKE will ensure they have obtained and reviewed the correct version of IWMDL documentation used to generate/manage a container before adding it to the AK Tracking Spread Sheet (AKTSS).

4.8.11 At a minimum of once per calendar quarter, SMR will review the current IWMDL and provide written assurance to the CCP SPM that the list is up to date OR provide necessary documentation to revise the list.

4.9 Data Validation and Reconciliation

4.9.1 CCP, using CCP-trained Host site personnel where applicable, will provide data generation level validated data packages for all characterization activities. CCP will provide data generation level validated data packages for NDE, and Radiological Characterization in accordance with the approved CCP procedures governing these processes.

4.9.2 Wherever CCP has obtained the services of another CBFO-certified TRU Waste Program, that program will provide data generation level BDRs to CCP in accordance with their own programmatic documents.

4.9.3 CCP will provide project level validated data packages for NDE, Radiological Characterization, and VE.

4.9.4 The CCP SPM and AKE will perform data reconciliation with applicable data quality objectives (DQOs) in accordance with CCP-TP-002, *CCP Reconciliation of DQOs and Reporting Characterization Data*, and/or the Characterization Reconciliation Report.

4.10 Measuring and Test Equipment (M&TE)

4.10.1 The CCP M&TE Custodian will provide a recall notification for CCP M&TE that requires calibration to the Host site SMR/Designee.

4.10.2 For Host site M&TE furnished for use in the CCP program, the Host site SMR/Designee will provide notification to the CCP M&TE Custodian when M&TE are added, deleted, found out-of-tolerance/defective, or failed calibration.

4.10.3 The Host site will make available National Institute of Science and Technology (NIST)-traceable calibration services for M&TE to the CCP. The Host site will maintain records on M&TE calibration in accordance with their Records Inventory and Disposition Schedule (RIDS). Copies of the Certificates of Calibration will be made available to the CCP VPM and/or CCP M&TE Custodian prior to issuing M&TE to CCP for use.

4.10.4 The Host site will make available national standard-traceable calibration services for gamma and neutron dose measurement instrumentation. The Host site will maintain records on calibration in accordance with their RIDS. Copies of the Certificates of Calibration will be made available to the CCP VPM and/or CCP M&TE Custodian prior to issuing the instrumentation to CCP for use.

4.10.5 The Host site SMR/Designee will make calibration documentation and processes accessible as needed for internal and external audits.

4.11 Work Standards

4.11.1 CCP operations personnel will work under the Host site Lockout/Tagout procedure.

4.11.2 CCP and Host site-provided personnel will perform quality-affecting work under CCP procedures for TRU waste characterization and certification activities. Host site procedures and work packages will be used for non-waste characterization activities (e.g., equipment repairs).

4.11.3 CCP operations personnel will operate in accordance with CCP-PO-005.

4.11.4 CCP operations personnel will comply with Host site procedures as they apply to established characterization areas.

4.11.5 CCP personnel will work under the Host site safety basis and work control standards, (i.e., General Employee Radiological Training). Maintenance work control activities for CCP supplied equipment will be controlled using CCP-TP-140, *CCP Equipment Maintenance*. Maintenance work control activities on Host facility-supplied equipment will be controlled using Host site work authorization procedures.

4.11.6 As outlined in CCP-CM-001, *CCP Equipment Change Authorization and Documentation*, and CCP-PO-005, it is the responsibility of the CCP VPM to maintain equipment configuration and authorize equipment changes to ensure characterization systems are operated and maintained in accordance with the Host site safety basis. The CCP VPM will not authorize a change to any characterization system until steps 4.11.6 [A] and [B] have occurred:

[A] The CCP Cognizant Engineer has reviewed and approved the proposed change in writing to the CCP VPM (this may be accomplished via e-mail). In addition, any proposed change to any vendor-supplied characterization system must be reviewed and approved by an appropriate vendor engineer or representative. The vendor engineer or authorized representative must provide written approval to the CCP VPM (this may be accomplished via e-mail) for the proposed change.

[B] The Host site SMR/Designee must concur with the proposed change in writing (this may be accomplished by e-mail) and provide a copy of the approved USQ, if it is required.

[C] The Host site will manage the configuration of the radiography and assay units in accordance with the appropriate Host site procedures. Once these systems have been turned over to CCP for operation, no change to the configuration will be approved by the Host site without CCP's concurrence in writing (this may be accomplished by e-mail) from the CCP VPM.

4.11.7 CCP personnel will participate in the Host site bioassay program. CCP personnel involved in VE of waste will provide routine samples on for cause basis and upon project completion. All other CCP personnel will provide samples as requested under the routine/random program established by the Host site. All CCP personnel will submit the bioassay samples required to establish a baseline for activities at the Host site, if applicable.

4.11.8 The Host site will analyze bioassay samples provided by CCP personnel within 90 days of their receipt.

4.11.9 The CCP VPM will be notified if any bioassay sample provided by CCP personnel indicates that an uptake of any radioactive isotopes may have occurred as soon as is reasonably possible.

4.11.10 Host site radiological controls personnel will perform routine surveys for contamination and radiation as specified in Host site policies or procedures. The CCP SPM or CCP VPM and appropriate Host site management personnel will be notified immediately upon the discovery of any loose surface contamination in any CCP-occupied buildings or any of the CCP-operated characterization equipment contained in these buildings. Access to and copies of routine survey results will be made available to CCP upon request.

4.11.11 The Host site will provide the CCP SPM or CCP VPM with the results of continuous or fixed air sample filter analysis within 21 days of the removal of the filter from the sampler head, in any monitored area routinely occupied by CCP personnel.

4.11.12 The Host site will provide the necessary dosimetry for CCP personnel. Dosimetry reports will be provided to the CCP SPM or CCP VPM.

- 4.11.13 CCP will provide historical information on the operation of any CCP equipment deployed at Host site for the purpose of lessons learned and the implementation of any mitigating actions from these lessons learned.
- 4.12 Waste Certification and WIPP Waste Information System/Waste Data System (WWIS/WDS)
- 4.12.1 CCP will prepare Waste Stream Profile Forms (WSPFs) for the subject Host site waste in accordance with CCP-TP-002.
- 4.12.2 CCP will transmit characterization and certification data in accordance with WWIS/WDS and CCP-TP-530, *CCP RH TRU Waste Certification and WWIS/WDS Data Entry*.
- 4.12.3 CCP shall submit copies of WSPFs to the Host site for information before submittal to CBFO. The Host site will provide written concurrence on the basis of continued compliance with procedures and programs and CBFO certification of the CCP characterization program.
- 4.12.4 The CCP Waste Certification Officials (WCO) will document and certify that all TRU waste payload containers meet the requirements of the WAC and submit the data to the WWIS/WDS for approval.
- 4.12.5 The CCP WCO will provide listings of drums requiring retrieval from storage for the purposes of loading into RH TRU 72B canisters.
- 4.12.6 CCP will begin their loading and shipping process using payload containers approved in WWIS/WDS.
- 4.13 Transportation
- 4.13.1 CCP is responsible for meeting all requirements for loading and shipping TRU waste certified by CCP as approved in WWIS/WDS.
- 4.13.2 The Host site will load drums into canisters according to CCP WCO listings, using approved procedures, and will provide the CCP WCO with the necessary data to complete the process.
- 4.13.3 The CCP WCO will work with the Host site as necessary to complete the appropriate transportation activities.
- 4.13.4 The CCP Transportation Certification Official (TCO) will work with the Host site as necessary to load the canisters into the RH TRU 72B casks or HalfPact.

4.13.5 The CCP TCO will coordinate the completion of the preparations of the RH TRU 72B Cask for shipment in accordance with DOE/WIPP-02-3283, *RH Packaging Program Guidance*, DOE/WIPP-02-3284, *RH Packaging Operations Manual*, DOE/WIPP-02-3183, *CH Packaging Program Guidance*, and DOE/WIPP-02-3184, *CH Packaging Operations Manual*.

4.14 Quality Assurance (QA)

4.14.1 All work performed in the completion of this waste characterization and certification scope will be in compliance with applicable DOE/CBFO-certified CCP procedures.

4.14.2 CCP will conduct periodic QA surveillances to assess compliance with applicable WIPP requirements.

4.14.3 The Host site will conduct audits/surveillances to assess compliance with applicable procedures.

4.15 Procurement

4.15.1 All items and services to be purchased under CCP-PO-001 will be graded by CCP in accordance with CCP-QP-001, *CCP Graded Approach*. The grading will determine whether the items and services are quality-affecting (Quality Level 1 or Quality Level 2) or non quality-affecting (Quality Level 0) for WIPP characterization, certification, and transportation.

[A] CCP will procure all quality-affecting items and services in accordance with CCP-QP-015, *CCP Procurement*. These items and services are the sole responsibility of CCP with regard to their quality integrity.

[B] Host site will procure items and services determined by the CCP grading process to be non quality-affecting for WIPP characterization, certification, and transportation. The Host site will be responsible for verification and compliance for these items and services.

[C] Items and services that are related to safe operation of the facility, and which do not affect WIPP characterization, certification, and transportation, are not required to be graded by CCP.

- [D] Receipt inspection of quality-affecting items will be performed by personnel trained and qualified to CCP-QP-002.
- [E] CCP will maintain Receipt Inspection Verification Sheets (RIVS) and associated objective evidence for each shipment in accordance with CCP-QP-026.
- [F] CCP will provide Host site advance notice (two weeks preferred) regarding anticipated receiving inspections that will be performed by Host site personnel trained and qualified by CCP.

4.16 Project Control

- 4.16.1 CCP and Host site will provide weekly status for their respective scheduled activities.
- 4.16.2 CCP will maintain and provide Host site with an up-to-date organization chart listing CCP personnel, along with associated roles and responsibilities.

4.17 Procedures

- 4.17.1 As defined in CCP-QP-010, editorial or minor changes may be made to all CCP documents except CCP-PO-001; CCP-PO-002, *CCP Transuranic Waste Certification Plan*; CCP-PO-003, *CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC)*; CCP-PO-505, *CCP Remote-Handled Transuranic Waste Authorized Methods for Payload Control (CCP RH-TRAMPAC)*; and CCP-QP-001 without the same level of review and approval as the original document. CCP will process any required changes in accordance with CCP-QP-010.
- 4.17.2 New Technical Operating Procedures (procedures that operate equipment) developed by CCP scheduled to be used at the Host site, shall be evaluated by the Host site SMR/Designee to determine if the procedure shall be added to the Host site review lists defined below.

4.17.3 The following documents, and all revisions to these documents, will be provided to the SMR for review by SMEs/CP; if the procedure is an operational procedure that CCP is not currently operating to, the SMR may waive the review until CCP operations commence on site. When CCP operations return to the site the SMR will be provided procedures listed below for review:

- CCP AK Reports
- CCP Interface Waste Management Documents List
- CCP AK Assessments
- CCP Waste Stream Profile Forms
- CCP-HSP-014, *Health and Safety Program Implementation for CCP*
- CCP-PO-500, *CCP/ANL RH-TRU Waste Interface Document*
- CCP-TP-140, *CCP Equipment Maintenance*
- CCP-TP-504, *CCP Dose-to-Curie Survey Procedure for Remote-Handled Transuranic Waste*
- CCP-TP-509, *CCP Remote-Handled Transuranic Container Tracking*
- CCP-TP-512, *CCP Remote-Handled Waste Sampling*
- CCP-TP-513, *CCP Procedure for Dimensional or Gravimetric Measurements for Radiological Characterization of Remote-Handled Transuranic Waste*
- CCP-TP-554, *CCP Remote-Handled Grapple Pre-Operational Checks and Operation*

NOTE

This note applies to Step 4.17.4. Examples of cognizant personnel may include, but is limited to Subject Matter Experts (SMEs) for the following as applicable to the document reviewed:

- Waste generating/packaging/repackaging processes
 - Chemical and physical characteristics of waste streams
 - Chemical compatibilities
 - Radiological properties of waste streams
 - Treatment permits
 - Nuclear Safety
 - Environmental compliance
 - Facility operations
-

4.17.4 Upon receipt of a document listed in Step 4.17.3 the SMR/Designee will ensure the document is reviewed by cognizant personnel responsible for the waste management activities relevant to the scope of the document.

4.17.5 As warranted, the SMR/Designee will provide written comments to CCP for inclusion in the Document Review Record (DRR) in accordance with CCP-QP-010.

4.17.6 CCP, at its direction, may request objective evidence to support the competency of Host site/generator reviewers.

4.17.7 The CCP SPM will confirm that the SMR/Designee written comments are resolved prior to proceeding with CCP operations under the scope of the document being reviewed.

4.17.8 The following documents, and all revisions to these documents, will be provided to the Host site SMR/Designee as Notify Only for review:

- CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- CCP-PO-002, *CCP Transuranic Waste Certification Plan*
- CCP PO-003, *CCP Transuranic Authorized Methods For Payload Control (CCP CH-TRAMPAC)*
- CCP-PO-005, *CCP Conduct of Operations*

- CCP-PO-505, *CCP Remote-Handled Transuranic Waste Authorized Methods for Payload Control (CCP RH-TRAMPAC)*
- CCP-QP-002, *CCP Training and Qualification Plan*
- CCP-QP-005, *CCP TRU Nonconforming Item Reporting and Control*
- CCP-QP-008, *CCP Records Management*
- CCP-QP-010, *CCP Document Preparation, Approval, and Control*
- CCP-QP-040, *Support Training*
- CCP-TP-001, *CCP Project Level Data Validation and Verification*
- CCP-TP-002, *CCP Reconciliation of DQOs and Reporting Characterization Data*

4.17.9 CCP will maintain control of procedures in accordance with CCP-QP-010.

4.17.10 The Host site SMR/Designee will review or designate the appropriate reviews of the CCP procedures listed in Section 4.17.3 and forward written comments to CCP Document Control in accordance with CCP-QP-010 for resolution.

4.17.11 The CCP SPM will confirm that the Host site SMR/Designee written comments are resolved with the Host site SMR/Designee concurrence prior to proceeding with CCP operations.

4.18 Document Transmittals

4.18.1 Documents listed in this section, which are provided from one organization to the other as information copies, may be transmitted via memo, fax, e-mail, or formal correspondence. Documents identified as QA records will be transmitted in accordance with CCP-QP-008.

4.18.2 Documents to be provided to the Host site by CCP include:

[A] List of equipment requiring calibration

- [B] Copies of NCRs and WIPP Forms, as applicable
- [C] Copies of AK Summary Reports
- [D] Copies of AK source documents and source document summaries, as requested
- [E] Copies of QA surveillance reports
- [F] Copies of WSPFs
- [G] Copies of VE, NDE, and Radiological Characterization, information and data, as requested
- [H] Copies of RIVS and associated objective evidence for each shipment
- [I] Information on chemical usage, sources required, and copies of applicable MSDSs as requested for inventory or reporting reasons
- [J] Copies of training requirements and associated training records for CCP personnel supporting the Host site
- [K] CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- [L] CCP-PO-002, *CCP Transuranic Waste Certification Plan*
- [M] Results of all DOE/CBFO/New Mexico Environment Department (NMED)/Department of Environmental Quality/U.S. Environmental Protection Agency (EPA) or other regulatory audit or compliance/enforcement actions that may impact its ability to characterize and transport TRU waste
- [N] Copy of final data package to WIPP via WWIS/WDS, as requested
- [O] Documented evidence of participating in and passing the CBFO performance demonstration program, if necessary
- [P] NMED and EPA approval of the CBFO Certification Audit Report
- [Q] Documents called out in Section 4.16

4.18.3 Documents to be provided to CCP by Host site include:

- [A] Documentation of training completion for CCP and Host facility personnel for training received from the Host site
- [B] Copies of AK source documentation requested by CCP
- [C] Radiological dose rate and surface contamination results on waste drums as needed to support WWIS/WDS data entry
- [D] Radiological information as described per Section 3.2.2[A] of this document
- [E] Copies of NCRs, deficiency reports, or other nonconformance documentation per Section 4.3
- [F] Copies of the results of Host site assessments pertaining to CCP
- [G] Copies of calibration certifications
- [H] Copies of QA surveillance reports
- [I] Radiological workplace and exposure data including As Low As Reasonably Achievable Planning documents for evaluation of activities
- [J] Any documentation required for CCP to perform its scope of work, including correspondence pertaining to characterization activities

4.19 Authorization Safety Basis and Configuration Management

4.19.1 The Host site has primary responsibility to ensure that CCP equipment and processes have been appropriately considered within the DOE-approved Host site documented safety analysis.

4.19.2 CCP has primary responsibility to control operations and equipment configurations to ensure compliance with site procedures that protect the personnel, public, and environment.

4.19.3 For CCP-provided equipment, CCP will provide documentation necessary for the Host site to perform the evaluation against the safety analysis. This documentation may include health and safety plans, hazards assessments, system descriptions, equipment drawings, or other information deemed necessary by the Host site.

- 4.19.4 For Host site-provided equipment, CCP will review operational and authorization basis documentation to ensure the safety of CCP personnel while operating equipment.
- 4.19.5 All changes to equipment operated by CCP will be controlled by the Host site work-control program to ensure appropriate authorization basis evaluations are conducted and associated controls are established.
- 4.19.6 The Host site will submit all changes to authorization-basis requirements that affect CCP operations for review and concurrence prior to implementation.

5.0 RECORDS

- 5.1 Records generated during the performance of the waste characterization and certification scope are controlled by CCP.
- 5.2 QA records generated by CCP documents referenced in this plan are maintained in accordance with CCP-QP-008.
- 5.3 All QA records generated by CCP documents referenced in this plan shall be maintained by CCP.
- 5.4 All QA records generated by CCP will be maintained and dispositioned in accordance with CCP-QP-028.
- 5.5 Host site will maintain the following records in accordance with Host site requirements. The list includes, but is not limited to, the following:
 - 5.5.1 MSDS
 - 5.5.2 Calibration Certifications
 - 5.5.3 Project Control schedules and cost data reports
 - 5.5.4 Radiological records (Exposure records)

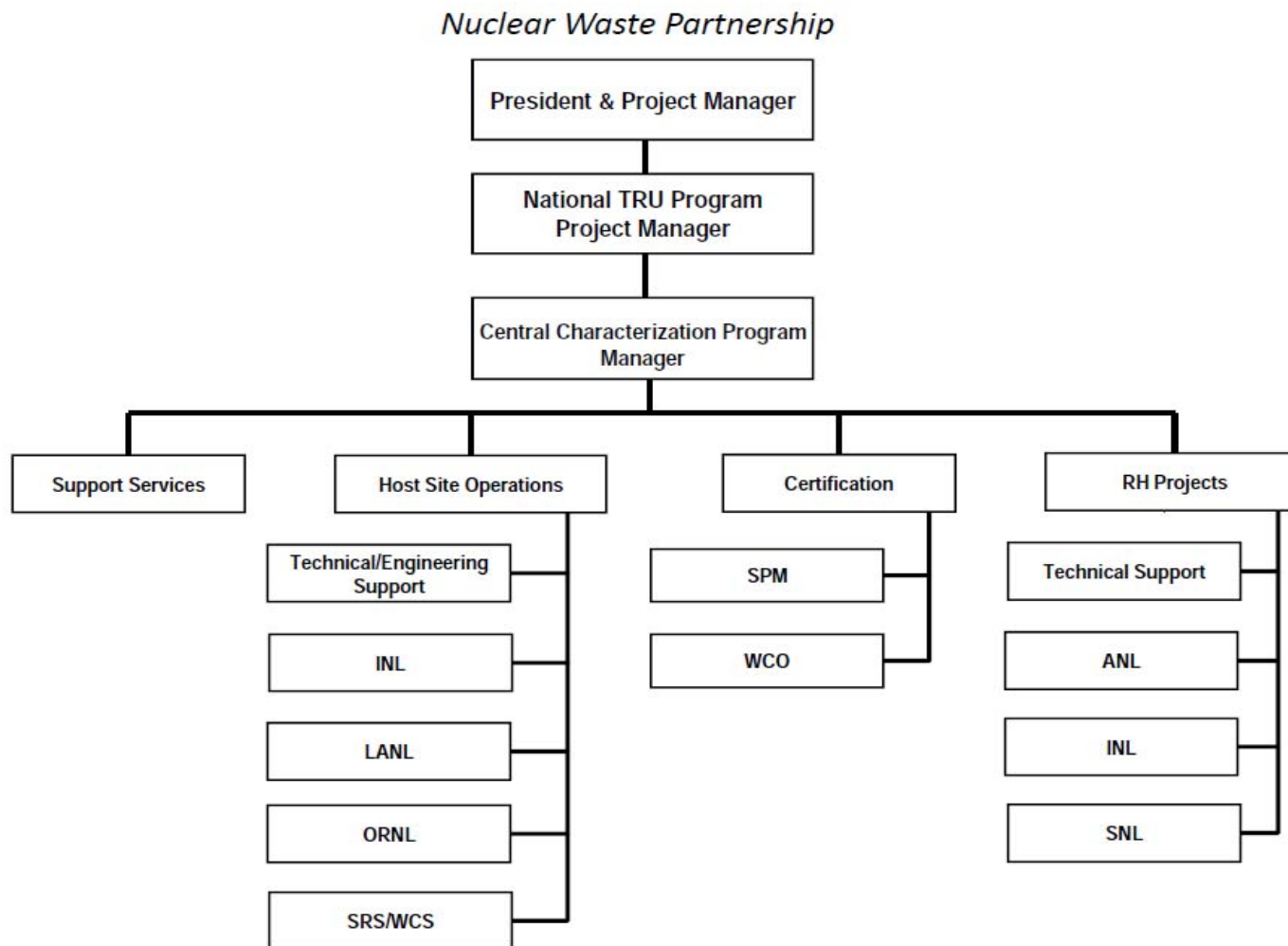
6.0 OVERSIGHT

NOTE

Through the associated SOW, the Host site has delegated the authority to characterize, certify, and ship TRU waste to the WIPP. Nonetheless, the Host site retains the responsibility for proper disposal as the waste generator. Accordingly, the following actions will define the level of oversight of the CCP by Host site personnel.

- 6.1 The Host site will accept successful completion of the CBFO certification audit as adequate evidence that the CCP implementation at the Host site is fully compliant with waste disposal requirements as set forth in the WAC and WAP. However, the Host site may conduct, at their discretion, periodic surveillances of CCP operations.
- 6.2 Following successful completion of the certification audit, the Host site QA will conduct periodic surveillances to ensure CCP work is conducted in accordance with CCP procedures. These surveillances will be conducted in accordance with the Host site QA procedures.
- 6.3 The Host site QA will provide copies of its surveillance reports to the CCP SPM. QA and the SPM will take the following actions:
 - 6.3.1 Review the Host site surveillance reports for any finding or other deficiencies against the CCP SOW.
 - 6.3.2 If required, prepare and process WIPP Form(s) in accordance with WP 15-GM1002, *Issues Management Processing of WIPP Forms*, for deficiencies identified during the review.
 - 6.3.3 Provide Host site QA with CCP actions to correct the identified deficiencies, as documented in the CCPWIPP Form.
 - 6.3.4 QA will maintain an information file of the Host site surveillance reports conducted on the CCP SOW.

Figure 1 – Nuclear Waste Partnership – RH



CCP-PO-501

Revision 9

CCP/INL RH TRU Waste Interface Document

EFFECTIVE DATE: 02/29/2016

Irene Joo

PRINTED NAME

APPROVED FOR USE

RECORD OF REVISION

Revision Number	Date Approved	Description of Revision
0	02/09/2006	Initial issue.
1	08/07/2006	Revised to add a section for Authorization Safety Basis and Configuration Management and to update certain procedures identified in the Procedures Section.
2	11/16/2006	Revised to implement the Waste Isolation Pilot Plant Hazardous Waste Facility Permit requirements resulting from the Section 311/Remote-Handled (RH) Permit Modification Request (PMR).
3	04/23/2008	Updated to include RCRA sampling and analysis and clarification of training roles and responsibilities.
4	04/30/2010	Revised to include Flammable Gas Sampling in section 4.7; section 4.19.3 to include all AK reports, CCP-TP-512 and CCP-TP-505; section 4.21 radiochemistry sampling. Added Waste Data System (WDS).
5	12/29/2010	Minor revision to update references to the <i>Waste Isolation Pilot Plant Hazardous Waste Facility Permit</i> .
6	04/03/2012	Revised to reflect Host site training requirement communication and submittal to Central Characterization Project (CCP) Training.
7	10/01/2012	Revised to incorporate the Nuclear Waste Partnership (NWP) transition changes.
8	06/21/2013	Revised to clarify roles associated with providing measuring and testing equipment (M&TE) Certificates of Calibration to Central Characterization Program (CCP). Revised to implement Permit Modification Request Class 2 approved by New Mexico Environment Department (NMED) dated March 13, 2013.

RECORD OF REVISION (Continued)

Revision Number	Date Approved	Description of Revision
9	02/29/2016	Revised to remove CCP-HSP-500, <i>CCP Hazard Control Plan for RH TRU Operations at INTEC</i> , and CCP-HSP-014, <i>Health and Safety Program Implementation for CCP</i> was added. Procedure CCP-TP-509, <i>CCP Remote-Handled Transuranic Container Tracking</i> , was moved to a different Section. Procedure CCP-QP-029, <i>CCP Corrective Action Management</i> , was removed and WP 15-GM1002, <i>Issues Management Processing of WIPP Forms</i> , was added. Clarified roles and additional responsibility items in Section 3.4, 3.6, 4.8, and 4.17.

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1.0 PURPOSE

The Central Characterization Program (CCP) is a mobile program designed to characterize, certify, and transport transuranic (TRU) waste from various U.S. Department of Energy (DOE) sites to the Waste Isolation Pilot Plant (WIPP) in New Mexico. The CCP is operated by Nuclear Waste Partnership (NWP), at the direction of the DOE/Carlsbad Field Office (CBFO).

CBFO has deployed the CCP to the Idaho Nuclear Technology and Engineering Center (INTEC) and Reactor Technology Complex (RTC), located on the Idaho National Laboratory (INL). CCP has been deployed to this site to process remote-handled (RH) TRU waste.

This Interface Document, subordinate to the upper-tier agreement, defines the interfaces between CCP and INTEC, provides details how the services described in the Statement of Work (SOW) are to be executed. This document is invoked via an Affiliate Agreement and a SOW between the Host site organization and NWP. This document is intended to clarify and expand on details contained in the SOW and program documents. It is not intended to be used in lieu of a task-specific SOW.

CCP has primary responsibility for waste characterization activities. CCP services include compilation, reporting, and confirmation of acceptable knowledge (AK), Nondestructive Examination (NDE), Radiological Characterization, visual examination (VE), Data Validation and Verification, Waste Certification, WIPP Waste Information System Waste Data System (WWIS)(WDS) Data Entry, and Waste Transportation Packaging and Shipment.

In providing these services, CCP may opt to use other CBFO-certified TRU programs. CCP will accept batch data reports (BDRs) validated through the data generation level from these other certified programs, and perform all project office activities in accordance with the CCP program.

These services will be performed with CCP and/or Host site equipment with appropriate DOE/CBFO-certified procedures. All services provided by CCP will comply with RH TRU requirements delineated in DOE/WIPP-02-3214, *Remote-Handled TRU Waste Characterization Program Implementation Plan* (WCPIP); DOE/WIPP-02-3122, *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant* (WAC); and *Waste Isolation Pilot Plant Hazardous Waste Facility Permit, Waste Analysis Plan* (WAP), including those requirements pertaining to waste disposal and transportation. This work will be performed under a DOE/CBFO-certified quality assurance (QA) program that meets requirements defined in DOE/CBFO-94-1012, *U.S. Department of Energy Carlsbad Field Office Quality Assurance Program Document* (QAPD).

The Host site may augment CCP characterization efforts as requested by CCP. Where required, all augmented services provided by the Host site shall comply with CCP-certified procedures.

The Host site has primary responsibility for assuring that requirements for safety, (including Radiological Control, Emergency Management, Industrial Safety, and Industrial Hygiene [IH]), security, safety basis, environmental permits, and other areas are met for CCP activities and that CCP activities support the scheduled objectives. Host site maintains ownership of the waste and responsibility for its disposal. This responsibility includes additional chemical sampling and analysis deemed necessary by the WIPP Co-Permittees.

Throughout this document the Host site contractors' responsibilities are limited to the specific CCP activities being conducted within their facilities.

The CCP will certify RH TRU waste at the INL for disposal in accordance with the certification authority that has been granted by the DOE/CBFO.

This document addresses specific requirements for the following areas:

- Training and Qualification
- Container Management
- Deficiencies and Nonconformances
- VE
- Radiological Characterization (includes dose-to-curie methodology)
- NDE
- AK
- Data Validation and Reconciliation
- Measuring and Test Equipment (M&TE)
- Work Standards
- QA
- Project Control
- Procedures
- Document Transmittals
- Procurements
- Records
- Waste Certification and WWIS/WDS Data Entry
- Transportation
- Authorization Safety Basis and Configuration Management
- Flammable Gas Analysis
- Real-time radiography
- Radiochemical sampling and analysis

The Host site will report conditions or concerns that have or may have safety, health, QA, security, operational, or environmental implications to the Department of Energy-Idaho (DOE-ID). CCP shall report their similar issues to the Host site and to DOE/CBFO.

2.0 REQUIREMENTS

This document implements the applicable requirements of the following:

DOE/WIPP-02-3214, *Remote-Handled TRU Waste Characterization Program Implementation Plan*

DOE/WIPP-02-3283, *RH Packaging Program Guidance*

DOE/WIPP-02-3284, *RH Packaging Operations Manual*

CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*

CCP-PO-002, *CCP Transuranic Waste Certification Plan*

CCP-PO-005, *CCP Conduct of Operations*

CCP-PO-505, *CCP Remote-Handled Transuranic Waste Authorized Methods for Payload Control (CCP RH-TRAMPAC)*

DOE/WIPP-06-3345, *Waste Isolation Pilot Plant Flammable Gas Analysis*

DOE/CBFO-94-1012, *U.S. Department of Energy Carlsbad Field Quality Assurance Program Document (QAPD)*

WP 13-1, *Nuclear Waste Partnership LLC, Quality Assurance Program Description*

PDD-851, *10 CFR 851 Work Safety and Health Program*

PLN-260, *ICP Radiation Protection Program*

3.0 RESPONSIBILITIES

CCP has primary responsibility for performing TRU waste characterization and certification activities in accordance with governing requirements described herein. CCP services include compilation, reporting and confirmation of AK, NDE, radiological characterization (RC), radiochemistry sampling, VE, flammable gas analysis (FGA) for waste certification, WWIS/WDS data entry, and transportation activities.

The Host site Contractors responsibilities are limited to CCP activities described herein being performed on their behalf and for performing TRU waste management activities in accordance with Host site/generator documents provided to CCP.

3.1 Initial Setup

3.1.1 CCP is responsible for the following during initial setup:

- [A] Providing information and procedures to the Host Site Management Representative (SMR)/Designee, who will coordinate facility, QA, and Environmental Safety & Health (ES&H) reviews to determine satisfactory compliance with Host site safety basis requirements, radiological control requirements, and other safety and operational requirements.
- [B] Completing readiness activities as needed to support authorization of CCP activities at the Host site.
- [C] Providing project support to complete administrative reviews and approvals of technical and administrative procedures or processes.
- [D] Mobilization of project management and staff.

3.2 Operations

3.2.1 CCP is responsible for the following activities to support operations:

- [A] Performing system start-up and calibration of characterization equipment at the Host site.
- [B] Performing safety walk-downs, management, and laboratory assessments prior to operation.
- [C] Responding to and resolving assessment and surveillance findings for CCP startup activities.

- [D] Ensuring CCP and Host site personnel are trained and qualified in accordance with the requirements specified in Section 4.1.
- [E] Successful completion of DOE/CBFO Certification Audit.
- [F] Providing drum tracking support for the drums introduced into characterization activities.
- [G] CCP, through NWP-established programs, maintains the responsibility for reporting potential Price-Anderson Amendments Act (PAAA) issues resulting from the certification of TRU waste by CCP at INL. This includes filing any Occurrence Reporting and Processing System (ORPS) reports resulting from the certification of TRU waste by CCP at INL. CCP shall allow the Host site to participate in the investigation of any waste certification event that results in an ORPS or PAAA report.
- [H] CCP shall support and participate in Host site investigations when CCP characterization activities result in a Host site initiated ORPS or PAAA report.
- [I] CCP shall maintain records in accordance with CCP-QP-008, *CCP Records Management*, and CCP-QP-028, *CCP Records Filing, Inventorying, Scheduling, and Dispositioning*.
- [J] Successful completion of U.S Environmental Protection Agency (EPA) Continued Compliance Inspection
- [K] Successful completion of periodic CBFO and Host site quality assurance surveillances.

3.2.2 The Host site provides the following support for CCP activities:

- [A] Radiological controls as needed to support characterization activities, including:
 - Radiological postings.
 - Radiation protection surveys, both initial, routine and demobilization, on characterization equipment and provide approved survey reports to the CCP Site Project Manager (SPM) as required.
 - Personnel dosimetry.

- Dose assessments and dosimetry reports.
- Calibrated and source checked survey instrumentation, as required.
- Radiological Work Permits (RWP) to support CCP activities, as required.
- If required relative to bioassay samples, bioassay sample collection, evaluation, and reports will be provided to the CCP Vendor Project Manager (VPM).
- Radiological source controls.
- Radiological Technicians for monitoring.
- Responsible for secondary generated waste.
- Personal Protective Equipment (PPE), as necessary.
- Personnel facilities to accommodate the characterization and loading process.
- CCP Personnel will adhere to Host site Radiological Program requirements.

[B] Provides site-specific training as needed to ensure safe operations within the facility.

[C] Provides ES&H support, as needed.

[D] Provides Fire Protection and Emergency Management support, as needed.

[E] Provides Host site Authorization basis oversight, including Unreviewed Safety Question (USQ) evaluations. The Host site is not responsible for oversight or USQ evaluations against authorization bases not owned by the Host site, such as the authorization basis for waste container transportation or handling and storage at the WIPP facility.

[F] Provides environmental impact oversight and support, as needed.

[G] Provides on-site sample and drum transportation.

- [H] Provides drum handling, inventory control, and storage location tracking.
- [I] Provides personnel to be trained and qualified under the CCP program as needed to support CCP activities (e.g., AK, VE, radiological characterization).
- [J] Performs document classification reviews as required to allow the public release of documents such as the AK Summary Report.
- [K] The Host site maintains the responsibility for reporting PAAA issues resulting from issues with safe operation of CCP characterization activities (e.g., Technical Safety Requirements, Radiation Safety, Industrial Safety, IH, Maintenance, Lockout/Tagout, Conduct of Operations, etc.) at INL. This includes filing any ORPS reports resulting from issues with safe operation of CCP characterization activities at INL. The Host site shall allow CCP to participate in investigations resulting from ORPS or PAAA reports from issues with safe operation of CCP characterization activities at INL.
- [L] The Host site will be allowed to participate in CCP investigations when a waste certification event results in a CCP initiated ORPS or PAAA report.
- [M] Provides adequate space and file storage capacity for CCP personnel to maintain records.

3.3 CCP Project Manager

- 3.3.1 Functions as CCP's primary interface and point-of-contact (POC) between CCP and the SMR/Designee for waste characterization and certification activities.
- 3.3.2 Unless otherwise assigned herein, ensures documents listed in step 4.18.3 are provided to the Host site.
- 3.3.3 Ensures sufficient characterization equipment and personnel are available to perform the required characterization activities at the Host site.
- 3.3.4 Provides status on CCP characterization operations to the SMR/Designee, as requested.

- 3.3.5 Works in conjunction with SMR/Designee to establish and maintain reasonable and appropriate throughput of waste containers.
- 3.3.6 Ensures CCP management and CBFO are informed of safety, compliance, or production issues impacting CCP activities.
- 3.3.7 Reviews required software QA per CCP-QP-022, *CCP Software Quality Assurance Plan*.
- 3.4 Acceptable Knowledge Expert (AKE)
 - 3.4.1 Collects, compiles reviews, and documents AK in accordance with CCP-TP-005, *CCP Acceptable Knowledge Documentation*.
 - 3.4.2 Ensures CCP has obtained necessary container information prior to characterization.
- 3.5 Quality Assurance (QA) Engineer
 - 3.5.1 Functions as CCP's primary interface and POC for QA matters between CCP, Host site, DOE-ID, and DOE/CBFO.
 - 3.5.2 Validates the nonconformance reports (NCRs) generated by CCP personnel performing characterization activities at the Host site.
 - 3.5.3 Provides copies of NCRs for information to the Host site SMR/Designee, as requested.
 - 3.5.4 Ensures that nonconformances are dispositioned in a timely manner in accordance with CCP-QP-005, *CCP TRU Nonconforming Item Reporting and Control*.
 - 3.5.5 Ensures receipt inspection per CCP-QP-026, *CCP Inspection Control*, of procured items and services is performed.
 - 3.5.6 Provides the Host site SMR/Designee with a copy of the semi-annual trending summary reports per CCP-QP-014, *CCP Quality Assurance Trend Analysis and Reporting*.
- 3.6 Host Site Management Representative (SMR)/Designee
 - 3.6.1 Functions as the Host site primary interface and POC between the Host site and CCP.
 - 3.6.2 Ensures cognizant Host site and generator POCs/Subject Matter Experts (SMEs) are identified and available as necessary to support the review of CCP documents defined in step 4.19.3.

- 3.6.3 Coordinates review, provides comment, and approves comment resolutions on documents listed in step 4.19.3. This includes facilitating generator document review and comment resolution as necessary. The review and comment resolution will be documented in accordance with CCP-QP-010, *CCP Document Preparation, Approval, and Control*.
- 3.6.4 Ensures any USQs against the Host site authorization basis that may be needed for proposed modifications to CCP hardware, software, or procedures are prepared and approved by the appropriately qualified Host site personnel prior to CCP implementing the proposed modification.
- 3.6.5 Ensures needed site infrastructure support, such as radiological, industrial safety, and IH is available for waste characterization.
- 3.6.6 Ensures documentation of completed Host site-specific training is delivered to CCP Training.
- 3.6.7 Coordinates review, provides comments, and approves comment resolutions on procedures listed in step 4.18.3 for the purpose of ensuring facility safety requirements are met.
- 3.6.8 Provides local support to CCP including but not limited to VE, radiological characterization and sampling personnel to support characterization operations as needed. Also provides personnel to support the CCP Acceptable Knowledge Experts (AKEs) in the collection of required documents and procedures as needed.
- 3.6.9 Ensures that periodic QA surveillances of CCP operations by the Host site are conducted and reported to CCP.
- 3.6.10 Distributes the CCP documents listed in step 4.18.3 to Host site reviewers as required by the Host site administrative controls.
- 3.6.11 Reviews and concurs in accordance with CCP-QP-010, on documents in step 4.18.3.
- 3.6.12 Provides facilities, construction services, utilities, phone services, office services, and supplies.
- 3.6.13 Ensures CCP personnel have access to facilities to observe operations and interview personnel associated with generation, packaging, repackaging, or treatment of TRU waste.

3.6.14 Verify Interface Waste Management Documents List (IWMDL) is complete for current Host site documents supporting repackaging and treatment activities.

3.6.15 Review the accuracy and completeness of practices and procedures used by Host site to control the generation and/or management (e.g., waste repackaging, remediation, treatment) or the subject containers described by the Acceptable Knowledge Assessment (AKA).

3.7 CCP Vendor Project Manager (VPM)

3.7.1 Monitors the List of Qualified Individuals (LOQI) daily (when characterization activities are being performed) to confirm that only qualified personnel perform waste characterization activities.

3.7.2 Functions as CCP's primary interface and POC between CCP and the Host site SMR/Designee for characterization field operations.

3.7.3 Provides pre-operation briefings when activities are being conducted.

3.7.4 Ensures that in-process documents are transmitted to the CCP Site Project Office as soon as practicable.

3.7.5 Ensures applicable Material Safety Data Sheets (MSDSs)/Safety Data Sheets (SDSs) are maintained and available to support operations.

3.7.6 Provides oversight of field operations to ensure safe, efficient operations.

3.7.7 Supervises day-to-day TRU waste characterization activities.

3.7.8 Notifies the CCP Project Manager and the Nuclear Facility Manager of any abnormal events associated with safe operation of CCP characterization activities for reporting purposes.

3.7.9 Ensures CCP has obtained necessary container information prior to characterization.

3.7.10 Notifies the Host site SMR/Designee of any potential ORPS or Noncompliance Tracking System-Reportable PAAA issues resulting from the certification of TRU waste by CCP at INL.

3.8 Waste Certification Official (WCO)

- 3.8.1 Obtains approved Waste Stream Profile Form (WSPF) for containers to be certified.
- 3.8.2 Validates the CCP WWIS/WDS Data Spreadsheet.
- 3.8.3 Certifies the data for the containers to be certified as identified on the CCP WWIS/WDS Data Spreadsheet.
- 3.8.4 Submits the container data from the CCP WWIS/WDS Data Spreadsheet to the WWIS/WDS Characterization and Certification Modules as applicable.

3.9 Transportation Certification Official (TCO)

- 3.9.1 Ensure CCP Transportation personnel are trained and qualified to perform WIPP-complaint contact-handled (CH) and RH TRU waste packaging and loading operations at the Host site prior to starting work activities and are listed on the current LOQI.
- 3.9.2 Provides oversight of CCP Transportation personnel for payload and Overpack assembly and loading.
- 3.9.3 Builds payloads from certified containers and Overpack provided by Waste Certification Officials (WCOs) in WWIS/WDS.
- 3.9.4 Certifies payloads for transportation to and disposal at WIPP.
- 3.9.5 Builds shipments from approved payloads in WWIS/WDS.

4.0 PROCEDURE

4.1 Training and Qualification

- 4.1.1 CCP personnel or Host site personnel who perform work under CCP procedures will be trained and qualified to WIPP requirements in accordance with CCP-QP-002, *CCP Training and Qualification Plan* and/or CCP-QP-040, *Support Training*, as applicable.
- 4.1.2 CCP and Host site personnel assigned to field operations must complete the Host site site-specific training. The SMR will ensure the Host site-specific training documentation is sent to CCP Training.
- 4.1.3 Both the CCP training and Host site-specific training must be completed prior to the individual being assigned to perform independent work at the Host site.
- 4.1.4 Administrative work, such as BDR reviews requiring no access to characterization activities or processes at the Host site, may be completed by personnel who have not completed the required Host site-specific training. Personnel who have not completed Host site-specific training will not be allowed unescorted access to the characterization activities.
- 4.1.5 A LOQI will be monitored daily by the CCP VPM to confirm CCP personnel and Host site personnel assigned to CCP are qualified.
- 4.1.6 Immediate notification, in writing, will be provided by CCP or the Host site if any required qualification is revoked, suspended, or expires.
- 4.1.7 The SMR will ensure that the site-specific training documentation is sent to CCP Training and notification is made to the SPM. It is recognized that additional or incidental non-core training may periodically be required by Host site to address special circumstances, response to events, or to communicate other information to affected workers that may not appear on the formal Training Matrix.
- 4.1.8 CCP will notify Host site Training and the Host site SMR of any personnel changes in CCP staff at INL, including transportation, and will identify the CCP positions to which the new individual will be trained.

- 4.1.9 The addition of CCP or Host site personnel to the CCP LOQI will follow the following sub-steps:
- [A] Host site Training will schedule site-specific training for identified CCP personnel.
 - [B] CCP Training will verify completion of CCP Qualifications and submit the completed CCP Qualification Card to Host site Training.
 - [C] The Host site Qualified Watch List (QWL) is provided to CCP Training as verification that applicable site-specific training has been completed for all personnel qualified under the CCP qualification program.
 - [D] Host site Training verifies completion of site-specific training, verifies completion of the CCP Qualification Card, and places the individual on the Host site QWL.
 - [E] CCP Training will issue the LOQI which reflects completion of both site-specific and CCP position qualifications.
 - [F] Host site Training will provide an updated site-specific QWL to CCP Training, as needed, for use in maintaining the LOQI.
 - [G] CCP Training will provide an updated LOQI, as needed, to support work activities and personnel qualification needs.

4.2 Container Management

- 4.2.1 The Host site is responsible for drum movement and storage.
- 4.2.2 The Host site will provide the dose rate and surface contamination information necessary to certify the container or canister for disposal.
- 4.2.3 CCP is responsible for container management throughout the CCP characterization process.
- 4.2.4 The Host site is responsible for providing documented information to the CCP SPM on any modification to a drum or canister after closure and/or AK has been approved.
- 4.2.5 The CCP SPM will review the documented information of modified drums and will notify the SMR when the drums are approved for entrance into the CCP characterization process.

4.3 Deficiencies and Nonconformances

4.3.1 CCP Identified Deficiencies and Nonconformances

NOTE

CCP QA will confirm appropriate closure of the deficiencies that are resolved by CCP.

- [A] If CCP personnel identify a nonconformance condition associated with a waste container during the CCP characterization or certification process, CCP personnel will initiate an NCR in accordance with CCP-QP-005.
 - [B] If the deficiency or nonconformance is an issue that will be resolved by CCP, CCP VPM will provide notification (e.g., verbal or e-mail as required by the Host site) to the Host site SMR/Designee. The Host site SMR/Designee may request any supporting documentation needed by the Host site. CCP will ensure appropriate closure of the deficiency. A copy of any CCP NCR related to DOE TRU waste at the INL will be provided to the Host site SMR/Designee upon request.
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NOTE

In some cases, INL may perform the work required to resolve deficiencies identified in CCP NCR and will initiate internal documentation as required by the INL program. However, the CCP NCR will remain open until resolution of the NCR condition has been confirmed by CCP under its certified program. At that point, CCP will close the NCR.

- [C] If the deficiency or nonconformance cannot be resolved by the CCP (e.g., does not meet TRU Waste Acceptance Criteria), then the specific drum will be returned with all required documentation to the Host site for disposition.
- [D] CCP personnel will immediately notify the CCP VPM of any abnormal event associated with the safe operation of CCP characterization activities. The CCP VPM will notify the CCP Project Manager and the Nuclear Facility Manager of the abnormal event.
- [E] The VPM will notify the SMR/Designee of potential CCP ORPS and PAAA reports resulting from the certification of waste by CCP at INL.

4.3.2 Host site Identified Deficiencies and Nonconformances

- [A] Deficiencies or Nonconformances identified by the Host site during this project which affect waste characterization or certification activities shall be promptly identified to the CCP VPM, who will initiate an NCR in accordance with the existing CCP deficiency reporting process in accordance with CCP-QP-005.

4.4 Visual Examination (VE)

- 4.4.1 CCP will conduct VE at the time of waste packaging or as required by the governing documents in accordance with CCP-TP-500, *CCP Remote-Handled Waste Visual Examination*, using a facility provided by the Host site.
- 4.4.2 Host site will be responsible for all maintenance and repairs to the facility used for VE and/or repackaging operations.

4.5 Nondestructive Examination (NDE)

- 4.5.1 CCP will perform NDE using a radiography unit supplied by the Host site. Containers rejected by NDE will either be processed by VE and repackaged or will be dispositioned by the Host site consistent with the requirements of Section 4.3.
- 4.5.2 The Host site will ensure that waste containers provided to CCP for the radiography process are staged such that the waste will not be frozen (i.e., no chance of liquids in the waste container being frozen).

4.6 Radiological Characterization

- 4.6.1 The Host site will provide technical support and facilities as needed for radiological characterization efforts based on the use of AK for stored RH TRU waste or for sampling and analysis if AK is insufficient.
- 4.6.2 CCP will provide qualified personnel, including Host site personnel, to perform radiological characterization activities.
- 4.6.3 The Host site will provide support for the CCP for performing calibration of Radiological Characterization instrumentation. This support includes delivery of surrogate drums and source control as needed.
- 4.6.4 If the preliminary radiological results indicate an individual drum, or suite of RH TRU drums staged for characterization in the INTEC facility, contain a fissile gram amount greater than 350 grams, the

appropriate Host site Shift Supervisor or Facility Manager shall be immediately notified. The Host site Operations will remove the container(s) and provide storage in a safe configuration. The CCP will provide a finalized Radiological Characterization Analysis Report to the Host site SMR/Designee within seven days.

4.7 Flammable Gas Analysis (FGA)

4.7.1 CCP will perform sampling and analysis using a Gas Chromatograph/Mass Spectrometer (GC/MS) with Thermal Conductivity Detector in accordance with DOE/WIPP-06-3345, *Waste Isolation Pilot Plant Flammable Gas Analysis*.

4.7.2 Host site will be responsible for replacing the filter vent, as needed.

4.8 Source Control

4.8.1 No Special Nuclear Material (SNM) sources are anticipated to be required to support radiological characterization.

4.8.2 The Host site will be responsible for management of all Radiological Characterization Non-SNM reference sources. Responsibilities consist of inventory control, storage, shipment and usage. The Host site will provide CCP the number of sources, location, isotopic distribution with activity levels, and names of the custodian and authorized users, as required.

4.8.3 The Host site will be responsible for providing radiological control support associated with the CCP non-SNM reference sources. This support consists of maintaining the radioactive materials area (RMA) postings and periodic surveys and performing a semi-annual leak check on the sources as requested by CCP.

4.8.4 The Host site, as custodian of non-SNM sources, will provide to CCP the necessary sources for calibration as requested. Host site personnel will load the sources into the matrix drums as requested by CCP. CCP personnel will be trained as users of the sources to the Host site procedures.

4.9 Acceptable Knowledge (AK)

4.9.1 CCP records personnel will maintain the auditable AK record necessary to support the AK Summary Report in accordance with the Waste Analysis Plan and DOE/CBFO-QAPD.

4.9.2 CCP AK personnel collect, compile, and review AK documentation in accordance with CCP-TP-005 and/or the WCPIP.

[A] The SMR assists CCP AK personnel with AK collection, as requested.

4.9.3 CCP AK personnel and Host site/generator personnel develop an IWMDL that includes current facility processes, plans, and procedures that control the following waste management activities as applicable:

- Waste generating activities
- Waste retrieval activities
- Waste packaging/repackaging
- Waste treatment/processing (e.g., neutralization, deactivation, and solidification/immobilization)
- Waste inspection, testing, and characterization
- Decontamination and Decommissioning (D&D) operations
- Any other activity that changes the physical, chemical, or radiological properties of waste to be characterized by CCP

[A] The AKE develops the new or revised IWMDL in accordance with CCP-TP-005 using the existing body of AK documentation.

[B] The SMR ensures Cognizant Host site/generator personnel (CP) are assigned to review the new or revised IWMDL for accuracy and completeness and provide written comments as appropriate.

[C] The AKE and CP resolve comments and questions.

[D] CCP posts the new revised IWMDL on the CCP secure file transfer protocol (sftp) site.

NOTE

This note applies to step 4.9.4. The activities of step 4.9.4 may be initiated as necessary by the AKE for existing waste streams, new waste streams, or during AK revisions/updates.

4.9.4 AKAs are performed in accordance with CCP-TP-005.

- [A] SPM provides SMR with the AKA results.
- [B] SMR distributes results of the AKA to designated CPs for review and comment.
- [C] AKE resolves comments with SMR and CPs.
- [D] SMR reviews the AKA to ensure Host site practices and procedures used to control the generation and/or management (e.g., waste repackaging, remediation, treatment) of the subject containers are accurate and complete as described by the AKA.

4.9.5 CCP submits new or revised AK Summary Reports to the SMR /Designee for review and concurrence.

- [A] The SMR ensures CP review and comment on the AK Summary Report in accordance with CCP-QP-010.

4.9.6 Representative CPs attend a briefing on new or revised AK Summary Batches.

4.9.7 CP notifies the SPM and AKE in writing of any new revised waste management activities that would necessitate a change to the IWMDL.

4.9.8 The SPM and AKE evaluate new or revised waste management activities and determine if revision to the AK Summary Report is needed.

4.9.9 The Host site will not provide any waste container to CCP for characterization until the AKE has received the latest version of the work document (including field changes, other immediate procedure changes, Timely Orders/Standing Order, Operator Aids, etc.) used to generate, package, and/or repack the container.

[A] The work document(s) provided to the AKE will contain the following information at a minimum:

- Identification (including revision) of the work document(s) used to generate the container
- Type of activity (e.g., packaging/repackaging only, remediation, treatment)
- Amount (estimated) and type of liquids
- Type and quantity (estimated) of absorbents used
- Type and quantity (estimated) of neutralization agents used
- Any unexpected conditions or reactions encountered
- General description of waste items
- Packaging configuration (e.g., 55-gallon drum with 20 mil liner bag)
- Filter data including model and quantity used
- Parent container identification

4.9.10 The AKE will ensure they have obtained and reviewed the correct version of IWMDL documentation used to generate/manage a container before adding it to the AK Tracking Spread Sheet (AKTSS).

4.9.11 At a minimum of once per calendar quarter, Host site/generator management will review the current IWMDL and provide written assurance to the CCP SPM that the list is up to date **OR** provide necessary documentation to revise the list.

4.10 Data Validation and Reconciliation

4.10.1 CCP, using CCP-trained Host site personnel where applicable, will provide data generation level validated data packages for all

characterization activities. CCP will provide data generation level validated data packages for Radiography, Radiochemistry sampling & analysis, Radiological Characterization, Flammable Gas Analysis, and VE in accordance with the approved CCP procedures governing these processes.

4.10.2 Wherever CCP has obtained the services of another CBFO-certified TRU Waste Program, that program will provide data generation level BDRs to CCP in accordance with their own programmatic documents.

4.10.3 CCP will provide project level validated data packages for Radiography, Radiochemistry sampling & analysis, Radiological Characterization, and VE.

4.10.4 The CCP SPM and AKE will perform data reconciliation with applicable data quality objectives (DQOs) in accordance with CCP-TP-002, *CCP Reconciliation of DQOs and Reporting Characterization Data* and/or the Characterization Reconciliation Report.

4.11 Measuring and Test Equipment (M&TE)

4.11.1 For CCP M&TE that requires calibration, the CCP M&TE Custodian will provide recall notification to the Host site designee.

4.11.2 For Host site M&TE furnished for use in the CCP program, the Host site SMR/Designee will provide notification to the CCP M&TE Custodian when M&TE are added, deleted, or found-out-of-tolerance/defective.

4.11.3 The Host site will make available National Institute of Standards and Technology (NIST)-traceable calibration services for M&TE to the CCP. The Host site will maintain records on M&TE calibration in accordance with their Records Inventory and Disposition Schedule (RIDS). The Host site M&TE contact will make the Certificates of Calibration for these M&TE items available to the CCP VPM and/or CCP M&TE Custodian prior to issuing M&TE to CCP for use, or for M&TE calibrated through a work package, within 14 days of completion of calibration.

4.11.4 The Host site will make available national standard-traceable calibration services for gamma and neutron dose measurement instrumentation. The Host site will maintain records on calibration in accordance with their RIDS. Copies of the Certificates of Calibration will be made available to the CCP VPM and/or CCP

M&TE Custodian prior to issuing the instrumentation to CCP for use.

4.11.5 The Host site SMR/Designee will make calibration documentation and processes accessible as needed for internal and external audits.

4.12 Work Standards

4.12.1 CCP operations personnel will work under the Host site Lockout/Tagout procedure.

4.12.2 CCP and Host site-provided personnel will perform quality-affecting work under CCP procedures for TRU waste characterization and certification activities. Host site procedures and work packages will be used for non-waste characterization activities (e.g., equipment repairs).

4.12.3 CCP operations personnel will operate in accordance with CCP-PO-005, *CCP Conduct of Operations*.

4.12.4 CCP operations personnel will comply with Host site procedures as they apply to established characterization areas.

4.12.5 CCP personnel will work under the Host site safety basis and work control standards, (i.e., General Employee Radiological Training [GERT]). Maintenance work control activities for CCP supplied equipment will be controlled using CCP-TP-140, *CCP Equipment Maintenance*. Maintenance work control activities on Host site-supplied equipment will be controlled using Host site work authorization procedures.

4.12.6 As outlined in CCP-CM-001, *CCP Equipment Change Authorization and Documentation*, and CCP-PO-005, it is the responsibility of the CCP VPM to maintain equipment configuration and authorize equipment changes to ensure characterization systems are operated and maintained in accordance with the Host site safety basis. The CCP VPM will not authorize a change to any characterization system until steps 4.12.6 [A] and [B] have occurred:

[A] The CCP Cognizant Engineer has reviewed and approved the proposed change in writing to the CCP VPM (this may be accomplished via e-mail). In addition, any proposed change to any vendor-supplied characterization system must be reviewed and approved by an appropriate vendor engineer or representative. The vendor engineer or authorized representative must provide written approval to the CCP

VPM (this may be accomplished via e-mail) for the proposed change.

[B] The Host site SMR/Designee must concur with the proposed change in writing (this may be accomplished by e-mail) and provide a copy of the approved USQ against the Host site authorization basis, if it is required.

[C] The Host site will manage the configuration of the radiography and assay units in accordance with the appropriate Host site procedures. Once these systems have been turned over to CCP for operation, no change to the configuration will be approved by the Host site without CCP's concurrence in writing (this may be accomplished by e-mail) from the CCP VPM.

4.12.7 CCP personnel will participate in the Host site bioassay program. CCP personnel involved in VE of waste will provide routine samples as required by the Host site. All other CCP personnel will provide samples as requested under the routine/random program established by the Host site. All CCP personnel will submit the bioassay samples required to establish a baseline for activities at the Host site.

4.12.8 The Host site will analyze bioassay samples provided by CCP personnel within 60 days of their receipt.

4.12.9 The CCP Project Manager or CCP VPM will be notified if any bioassay sample provided by CCP personnel indicates that an uptake of any radioactive isotopes may have occurred as soon as is reasonably possible.

4.12.10 Host site radiological controls personnel will perform routine surveys for contamination and radiation as specified in Host site policies or procedures. The CCP Project Manager or CCP VPM and appropriate Host site management personnel will be notified immediately upon the discovery of any loose surface contamination in any CCP-occupied buildings or any of the CCP-operated characterization equipment contained in these buildings. Access to and copies of routine survey results will be made available to CCP upon request.

- 4.12.11 The Host site will provide immediate notification to the CCP Project Manager or CCP VPM of continuous or fixed air sample filter results that exceed established limits for areas routinely occupied by CCP personnel. Access to and copies of air sample results will be made available to CCP upon request.
- 4.12.12 The Host site will provide the necessary dosimetry for CCP personnel. Dosimetry reports will be provided to the CCP Project Manager or CCP VPM, upon request.
- 4.12.13 CCP will provide historical information on the operation of any CCP equipment deployed at Host site for the purpose of lessons learned and the implementation of any mitigating actions from these lessons learned.
- 4.12.14 Work activities will be authorized by the Host site Nuclear Facility Manager/Designee based on the Host site QWL.
- 4.13 Waste Certification and WIPP Waste Information System (WWIS/WDS) Data Entry
 - 4.13.1 CCP will prepare WSPFs for the subject Host site waste in accordance with CCP-TP-002.
 - 4.13.2 CCP will transmit characterization and certification data in accordance with WWIS/WDS and CCP-TP-530, *CCP RH TRU Waste Certification and WWIS/WDS Data Entry*.
 - 4.13.3 CCP shall submit copies of WSPFs to the Host site for information before submittal to CBFO. The Host site will provide written concurrence on the basis of continued compliance with procedures and programs and CBFO certification of the CCP characterization program.
 - 4.13.4 The CCP WCO will document and certify that all TRU waste payload containers meet the requirements of the WAC, and submit the data to the WWIS/WDS for approval.
 - 4.13.5 The CCP WCO will provide listings of drums requiring retrieval from storage for the purposes of loading into RH TRU 72-B Canisters.
 - 4.13.6 CCP will begin their loading and shipping process using payload containers approved in WWIS/WDS.

4.14 Transportation

4.14.1 CCP is responsible for meeting all requirements for loading and shipping TRU waste certified by CCP as approved in WWIS/WDS.

4.14.2 The Host site will load drums into canisters according to CCP WCO listings, using approved procedures, and will provide the CCP WCO with the necessary data to complete the process.

4.14.3 The CCP WCO will work with the Host site as necessary to complete the appropriate transportation activities.

4.14.4 The CCP Transportation Certification Official (TCO) will work with the Host site as necessary to load the canisters into the RH TRU 72-B Casks.

4.14.5 The CCP TCO will coordinate the completion of the preparations of the RH TRU 72-B Cask for shipment in accordance with DOE/WIPP-02-3283, *RH Packaging Program Guidance* and DOE/WIPP-02-3284, *RH Packaging Operations Manual*.

4.14.6 CCP Transportation will coordinate with the Host site to complete the following activities:

- [A] The Host site will procure all RH TRU 72-B Waste Containers and System Components from NWP.
- [B] The Host site will load RH TRU 72-B Waste Containers with drums as delineated by CCP's TCO.
- [C] The Host site will mechanically latch the RH TRU 72-B Waste Container Lid into the closed and fastened position using tooling and procedures as delineated by CCP.
- [D] The Host site will position loaded RH TRU 72-B Waste Containers in RH TRU 72-B Casks.
- [E] The Host site will place the RH TRU 72-B Cask Inner Vessel Container Lid into position and torque lid bolts in accordance with CCP's procedure.
- [F] The Host site will perform Leak Rate Testing of the torqued Inner Vessel Lid in accordance with CCP's Leak Rate Test procedure. In the event of Leak Rate Test failure, the Host site will change out O-Rings and retest the Inner Vessel Lid for Leak Rate Acceptance.

- [G] The Host site will place the Cask Lid into position and torque lid bolts in accordance with CCP's procedure.
- [H] The Host site will perform Leak Rate Testing of the torqued Cask Lid in accordance with CCP's Leak Rate Test procedure. In the event of Leak Rate Test Failure, the Host site will change out O-Rings and retest the Cask Lid for Leak Rate Acceptance.
- [I] The Host site will load the assembled RH TRU 72-B Cask on the RH TRU 72-B Trailer and install the Impact Limiters in accordance with CCP's Cask Loading procedure.

4.15 Quality Assurance (QA)

- 4.15.1 All work performed in the completion of this waste characterization and certification scope will be in compliance with applicable DOE/CBFO-certified CCP procedures.
- 4.15.2 CCP will conduct periodic QA surveillances to assess compliance with applicable WIPP requirements.
- 4.15.3 The Host site will conduct audits/surveillances to assess compliance with applicable procedures.

4.16 Procurement

- 4.16.1 All items and services to be purchased under CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*, will be graded by CCP in accordance with CCP-QP-001, *CCP Graded Approach*. The grading will determine whether the items and services are quality-affecting (Quality Level 1 or Quality Level 2) or non quality-affecting (Quality Level 0) for WIPP characterization, certification, and transportation.
 - [A] CCP will procure all quality-affecting items and services required for characterization in accordance with CCP-QP-015, *CCP Procurement*. These items and services are the sole responsibility of CCP with regard to their quality integrity.
 - [B] Host site will procure items and services determined by the CCP grading process to be non quality-affecting for WIPP characterization, certification, and transportation. The Host site will be responsible for verification and compliance for these items and services.

- [C] Items and services that are related to safe operation of the facility, and which do not affect WIPP characterization, certification, and transportation, are not required to be graded by CCP.
- [D] Receipt inspection of quality-affecting items will be performed by personnel trained and qualified to CCP-QP-002.
- [E] CCP will maintain Source/Receipt Inspection Verification Sheets (SRIVS) and associated objective evidence for each shipment in accordance with CCP-QP-026.
- [F] CCP will provide Host site advance notice (two weeks preferred) regarding anticipated receiving inspections that will be performed by Host site personnel trained and qualified by CCP.
- [G] Advance notice (two weeks preferred) will be provided to the Host site for expected delivery dates for NWP supplied equipment. Sufficient data (e.g., vendor data, procurement documents) will be provided to the Host site to allow development of Host site receipt inspection plans.

4.17 Project Control

- 4.17.1 CCP and Host site will provide weekly status for their respective scheduled activities and production matrix/curves.
- 4.17.2 CCP will provide Host site with an up-to-date earned value plan, and estimates of completion at the end of each month, or as requested.
- 4.17.3 CCP will maintain and provide Host site with an up-to-date organization chart listing CCP personnel, along with associated roles and responsibilities.
- 4.17.4 CCP will establish and maintain separation of costs and invoices from other CCP-performed work at the INL.
- 4.17.5 CCP will provide Host site with invoices reflecting labor hours, subcontracted service, and material costs grouped to the specific activity (i.e., AK, Deployment, Startup, and Operations) performed.
- 4.17.6 CCP will provide timely cost estimates to the Host site SMR/Designee for any new CCP activities planned.

4.17.7 CCP will provide the Host site SMR/Designee with schedule and actual cost data for scheduled activity on a monthly basis.

4.18 Procedures

4.18.1 As defined in CCP-QP-010, editorial or minor changes may be made to all CCP documents except CCP-PO-001, CCP-PO-002, *CCP Transuranic Waste Certification Plan*, CCP-PO-505, *CCP Remote-Handled Transuranic Waste Authorized Methods for Payload Control (CCP RH-TRAMPAC)*, and CCP-QP-001, without the same level of review and approval as the original document. CCP will process any required changes in accordance with CCP-QP-010.

4.18.2 New Technical Operating Procedures (procedures that operate equipment) developed by CCP scheduled to be used at the Host site, shall be evaluated by the Host site SMR/Designee to determine if the procedure shall be added to the Host site review lists defined below.

4.18.3 The following documents and revisions to these documents will be provided to the SMR for review by SMEs/CP; if the procedure is an operational procedure that CCP is not currently operating to, the SMR may waive his review until CCP operations commence on site. When CCP operations return to the site the SMR will be provided all procedures listed below for review.

- CCP AK Reports
- CCP Interface Waste Management Documents List
- CCP AK Assessments
- CCP Waste Stream Profile Forms
- CCP Radiological Characterization Technical Reports
- CCP Compliance and Confirmation Test Plans
- Sampling and Analysis Plans
- CCP-HSP-014, *Health and Safety Program Implementation for CCP*
- CCP-TP-005, *CCP Acceptable Knowledge Documentation*
- CCP-PO-501, *CCP/INL RH TRU Waste Interface Document*

- CCP-TP-140, *CCP Equipment Maintenance*
- CCP-TP-500, *CCP Remote-Handled Waste Visual Examination*
- CCP-TP-505, *CCP Removable Lid Canister/Neutron Shielded Canister Loading*
- CCP-TP-504, *CCP Dose-to-Curie Survey Procedure for Remote-Handled Transuranic Waste*
- CCP-TP-508, *CCP RH Standard Real-Time Radiography Inspection Procedure*
- CCP-TP-509, *CCP Remote-Handled Transuranic Container Tracking*
- CCP-TP-512, *CCP Remote-Handled Waste Sampling*
- CCP-TP-554, *CCP Remote-Handled Grapple Pre-Operational Checks and Operation*

NOTE

This note applies to step 4.18.4. Examples of cognizant personnel may include, but is limited to SMEs for the following as applicable to the document reviewed:

- Waste generating/packaging/repackaging processes
- Chemical and physical characteristics of waste streams
- Chemical compatibilities
- Radiological properties of waste streams
- Treatment permits
- Nuclear Safety
- Environmental compliance
- Facility operations

4.18.4 Upon receipt of a document listed in step 4.19.3 the SMR/Designee will ensure the document is reviewed by cognizant personnel responsible for the waste management activities relevant to the scope of the document.

4.18.5 As warranted, the SMR/Designee will provide written comments to CCP using Document Review Record (DRR) in accordance with CCP-QP-010 or Host site equivalent.

4.18.6 CCP, at its direction, may request objective evidence to support the competency of Host site/generator reviewers.

4.18.7 The CCP SPM will confirm that the SMR/Designee written comments are resolved with the Host site SMR/Designee concurrence prior to proceeding with CCP operations under the scope of the document being reviewed.

4.18.8 The following documents, and all revisions to these documents, will be provided to the Host site SMR/Designee as "Notify Only" for review:

- CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- CCP-PO-002, *CCP Transuranic Waste Certification Plan*
- CCP-PO-005, *CCP Conduct of Operations*
- CCP-PO-505, *CCP Remote-Handled Transuranic Waste Authorized Methods for Payload Control (CCP RH-TRAMPAC)*
- CCP-QP-002, *CCP Training and Qualification Plan*
- CCP-QP-005, *CCP TRU Nonconforming Item Reporting and Control*
- CCP-QP-008, *CCP Records Management*
- CCP-QP-010, *CCP Document Preparation, Approval, and Control*
- CCP-TP-001, *CCP Project Level Data Validation and Verification*
- CCP-TP-002, *CCP Reconciliation of DQOs and Reporting Characterization Data*
- CCP-TP-507, *CCP Shipping of Remote-Handled Transuranic Waste*

4.18.9 CCP will maintain control of procedures in accordance with CCP-QP-010.

4.18.10 The Host site SMR/Designee will review or designate the appropriate reviews of the CCP procedures listed in step 4.18.3, and forward written comments to CCP Document Control in accordance with CCP-QP-010 for resolution.

4.18.11 The CCP SPM will confirm that the Host site SMR/Designee written comments are resolved with the Host site SMR/Designee concurrence prior to proceeding with CCP operations.

4.19 Document Transmittals

4.19.1 Documents listed in this section, which are provided from one organization to the other as information copies, may be transmitted via memo, fax, e-mail, or formal correspondence. Documents identified as QA records will be transmitted in accordance with CCP-QP-008.

4.19.2 Documents to be provided to the Host site by CCP include:

- [A] List of equipment requiring calibration
- [B] Copies of NCRs and WIPP Forms, as applicable
- [C] Copies of AK Summary Reports
- [D] Copies of AK source documents and source document summaries, as requested
- [E] Copies of semi-annual trending summary reports
- [F] Copies of QA surveillance reports
- [G] Copies of WSPFs
- [H] Copies of VE, NDE, Radiochemistry sampling & analysis, Radiological Characterization data, FGA, as requested
- [I] Copies of SRIVS and associated objective evidence for each shipment
- [J] Information on chemical usage and copies of applicable MSDSs/SDSs as requested for inventory or reporting reasons
- [K] Copies of training requirements and associated training records for Host site personnel supporting CCP

- [L] Results of all DOE/CBFO/New Mexico Environment Department (NMED)/EPA or other regulatory audit or compliance/enforcement actions that may impact its ability to characterize and transport TRU waste
- [M] Copy of final data package to WIPP via WWIS/WDS, as requested
- [N] NMED and United States EPA approval of the CBFO Certification Audit Report
- [O] Documents called out in Section 4.17

4.19.3 Documents to be provided to CCP by Host site, upon request, include:

- [A] Documentation of required training
- [B] Documentation of training completion for CCP and Host site personnel for training received from the Host site
- [C] Copies of AK source documentation requested by CCP
- [D] Radiological dose rate and surface contamination results on waste drums as needed to support WWIS/WDS data entry
- [E] Radiological information as described per step 3.2.2[A] of this document
- [F] Copies of NCRs, deficiency reports, or other nonconformance documentation per Section 4.3
- [G] Copies of the results of Host site assessments pertaining to CCP
- [H] Copies of calibration certifications
- [I] Copies of QA surveillance reports

4.20 Authorization Safety Basis and Configuration Management

4.20.1 The Host site has primary responsibility to ensure that CCP equipment and processes have been appropriately considered within the DOE-approved Host-site documented safety analysis.

4.20.2 CCP has responsibility to ensure compliance with procedures that protect the personnel, public, and environment.

- 4.20.3 Accordingly, for CCP provided equipment, CCP will provide the documentation necessary for Host site to perform the evaluation against the safety analysis. This documentation may include health and safety plans, hazard assessments, system descriptions, equipment drawings, or other information deemed necessary by Host site.
- 4.20.4 For Host site-provided equipment, CCP will review operational and authorization basis documentation including USQs to ensure the safety of CCP personnel while operating the equipment.
- 4.20.5 All changes to equipment operated by CCP will be controlled by the Host site work control program to ensure appropriate authorization-basis evaluations are conducted, and associated controls are established.
- 4.20.6 The Host site will inform CCP of changes to authorization basis documentation that affect CCP operations prior to implementation.
- 4.20.7 CCP will provide to the Host site new AK information acquired that affects the material-at-risk inventory.

4.21 Radiochemistry Sampling and Analysis

- 4.21.1 Host site will provide technical support and facilities as needed to support sample collection, transfer, and analysis for radiochemistry or Resource Conservation and Recovery Act (RCRA) constituents if AK is insufficient or direction is received to sample.
- 4.21.2 CCP will provide qualified personnel, including Host site personnel, to perform sample collection activities.
- 4.21.3 The Host site will use a WIPP-approved laboratory to perform analysis of radiochemistry and homogenous solid samples.

5.0 RECORDS

- 5.1 Records generated during the performance of the waste characterization and certification scope are controlled by CCP.
- 5.2 QA records generated by CCP documents referenced in this plan are maintained in accordance with CCP-QP-008.
- 5.3 All QA records generated by CCP documents referenced in this plan shall be maintained by CCP.
- 5.4 All QA records generated by CCP will be maintained and dispositioned in accordance with CCP-QP-028.
- 5.5 Host site will maintain the following records in accordance with Host site requirements. The list includes, but is not limited to, the following:

5.5.1 MSDS/SDS

5.5.2 Calibration Certifications

5.5.3 Project Control schedules and cost data reports

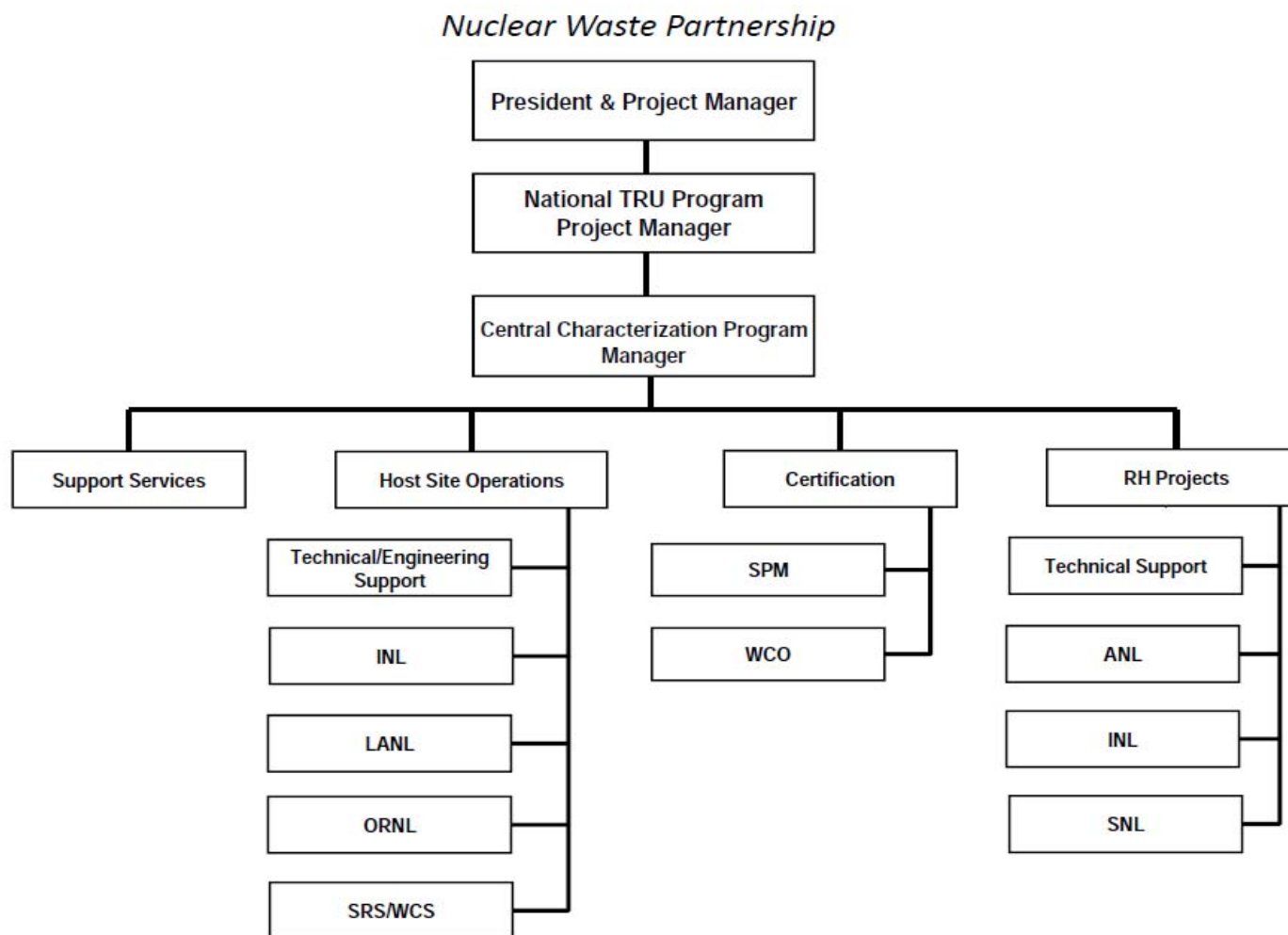
6.0 OVERSIGHT

NOTE

Through the Affiliate Agreement between the Host site and NWP, and the associated SOW, the Host site has delegated the authority to characterize, certify, and ship TRU waste to the WIPP. Nonetheless, the Host site retains the responsibility for proper disposal as the waste generator. Accordingly, the following actions will define the level of oversight of the CCP by Host site personnel.

- 6.1 The Host site will accept successful completion of the CBFO certification audit as adequate evidence that the CCP implementation at the Host site is fully compliant with waste disposal requirements as set forth in the WCPIP, WAC, and WAP. However, the Host site may conduct, at their discretion, periodic surveillances of CCP operations.
- 6.2 Following successful completion of the certification audit, the Host site QA will conduct periodic surveillances to ensure CCP work is conducted in accordance with CCP procedures. These surveillances will be conducted in accordance with the Host site QA procedures.
- 6.3 The Host site QA will provide copies of its surveillance reports to the CCP SPM. CCP QA and the SPM will take the following actions:
 - 6.3.1 Review the Host site surveillance reports for any finding or other deficiencies against the CCP SOW.
 - 6.3.2 If required, prepare and process WIPP Forms in accordance with WP 15-GM1002, *Issues Management Processing of WIPP Forms*, for deficiencies identified during the review.
 - 6.3.3 Provide Host site QA with CCP actions to correct the identified deficiencies, as documented in the WIPP Form.
 - 6.3.4 CCP QA will maintain an information file of the Host site surveillance reports conducted on the CCP SOW.

Figure 1. Nuclear Waste Partnership – RH



CCP-PO-510

Revision 2

CCP/SNL Interface Document

EFFECTIVE DATE: 09/29/2015

Irene Joo

PRINTED NAME

APPROVED FOR USE

RECORD OF REVISION

Revision Number	Date Approved	Description of Revision
0	11/18/2010	Initial issue.
1	01/22/2014	Revised to remove references to Head Space Gas (HSG) sampling and SUMMA analysis, and to update reference documents.
2	09/29/2015	Revised to clarify roles and additional responsibilities items in Sections 3.4, 3.6, 4.7, and 4.16. Also revised the Training and Qualification section, and incorporated other editorial changes.

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1.0 PURPOSE

The Central Characterization Program (CCP) is a mobile program designed to characterize, certify, and transport transuranic (TRU) waste from various Department of Energy (DOE) sites to the Waste Isolation Pilot Plant (WIPP) in New Mexico. The CCP is operated by Nuclear Waste Partnership (NWP) at the direction of the DOE Carlsbad Field Office (CBFO) (See Figure 1, Nuclear Waste Partnership – RH).

CBFO has deployed the CCP to the Host site Sandia National Laboratory (SNL). CCP has been deployed to this site to process TRU waste.

This document defines the interfaces between the CCP and the Host site organization(s) necessary to perform this work. This document is invoked via a Statement of Work (SOW) between the Host site organization and NWP. This document is intended to clarify and expand on details contained in the upper tier SOW and program documents. It is not intended to be used in lieu of a task-specific SOW.

CCP has primary responsibility for waste characterization activities. CCP services include compilation, reporting, and confirmation of Acceptable Knowledge (AK), Radiological Characterization, Visual Examination (VE), Data Validation and Verification, Waste Certification, WIPP Waste Information System (WWIS)/Waste Data System (WDS) Data Entry, and Waste Transportation Packaging and Shipment.

In providing these services, CCP may opt to use other CBFO-certified TRU programs. CCP will accept batch data reports (BDRs) validated through the data generation level from these other certified programs and perform all project office activities in accordance with the CCP program.

These services will be performed with CCP and/or Host site equipment with appropriate procedures. All services provided by CCP will comply with remote-handled (RH) TRU requirements delineated in DOE/WIPP-02-3214, *Remote-Handled TRU Waste Characterization Program Implementation Plan* (WCPIP); DOE/WIPP-02-3122, *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant* (WAC); and *Waste Isolation Pilot Plant Hazardous Waste Facility Permit, Waste Analysis Plan* (WAP), including those requirements pertaining to waste disposal and transportation. This work will be performed under CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*, that meets requirements defined in DOE/CBFO-94-1012, *U.S. Department of Energy Carlsbad Field Office Quality Assurance Program Document* (QAPD).

The Host site may augment CCP characterization efforts as requested by CCP. Where required, all augmented services provided by the Host site shall comply with CCP-certified procedures.

CCP will coordinate with the Host site to ensure that requirements for safety, (including Radiological Control, Emergency Management, Industrial Safety, and Industrial Hygiene [IH]), security, safety basis, environmental permits, and other areas are met for CCP activities, and that CCP activities support the scheduled objectives.

Throughout this document the Host site contractors' responsibilities are limited to the specific CCP activities being conducted within their facilities.

The CCP will certify DOE RH-TRU waste at the Host site in accordance with the certification authority that has been granted by the DOE/CBFO. This certified waste will be shipped directly to WIPP for disposal.

The CCP will certify DOE contact-handled (CH) TRU waste for shipment to Idaho National Laboratory (INL) for certification and disposal at WIPP.

This document addresses specific requirements for the following areas:

- Training and Qualification
- Container Management
- Deficiencies and Nonconformances
- VE
- Radiological Characterization (includes dose-to-curie methodology)
- Source Control
- AK
- Data Validation and Reconciliation
- Measuring and Test Equipment (M&TE)
- Work Standards
- Quality Assurance (QA)
- Project Control
- Procedures
- Document Transmittals
- Procurements
- Records
- Waste Certification and WWIS/WDS Data Entry
- Transportation
- Authorization Safety Basis and Configuration Management

The Host site will report conditions or concerns that have or may have safety, health, QA, security, operational or environmental implications to CCP and DOE/Albuquerque. CCP shall report their similar issues to the Host site and to DOE/CBFO.

2.0 REQUIREMENTS

This document implements the applicable requirements of the following:

- DOE/WIPP-02-3122, *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant (WAC)*
- DOE/WIPP-02-3214, *Remote-Handled TRU Waste Characterization Program Implementation Plan (WCPIP)*
- CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- CCP-PO-002, *CCP Transuranic Waste Certification Plan*
- CCP-PO-003, *CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC)*
- CCP-PO-505, *CCP Remote-Handled Transuranic Waste Authorized Methods for Payload Control (CCP RH-TRAMPAC)*

3.0 RESPONSIBILITIES

3.1 Initial Setup

3.1.1 CCP is responsible for the following during initial setup:

- [A] Providing information and procedures to the Host Site Technical Representative (STR)/Designee, who will coordinate facility, QA, and Environmental Safety & Health (ES&H) reviews to determine satisfactory compliance with Host site safety basis requirements, radiological control requirements, and other safety and operational requirements.
- [B] Completing readiness activities as needed to support authorization of CCP activities at the Host site.
- [C] Providing project support to complete administrative reviews and approvals of technical and administrative procedures or processes.
- [D] Mobilization of project management and staff.

3.2 Operations

3.2.1 CCP is responsible for the following activities to support operations:

- [A] Performing system start-up and calibration of characterization equipment at the Host site.
- [B] Performing safety walk-downs, management, and laboratory assessments prior to operation.
- [C] Responding to and resolving assessment and surveillance findings for CCP startup activities.
- [D] Ensuring CCP and Host site personnel are trained and qualified in accordance with the requirements specified in Section 4.1.
- [E] Successful completion of DOE/CBFO Certification Audit.
- [F] Providing drum tracking support for the drums introduced into characterization activities.

- [G] CCP, through NWP established programs, maintains the responsibility for reporting potential Price-Anderson Amendments Act (PAAA) issues resulting from the certification of TRU waste by CCP at the Host site. This includes filing any Occurrence Reporting and Processing System (ORPS) reports resulting from the certification of TRU waste by CCP at the Host site. CCP shall allow the Host site to participate in the investigation of any waste certification event that results in an ORPS or PAAA report.
- [H] CCP shall support and participate in Host site investigations when CCP characterization activities result in a Host site-initiated ORPS or PAAA report.
- [I] CCP shall maintain records in accordance with CCP-QP-008, *CCP Records Management*, and CCP-QP-028, *CCP Records Filing, Inventorying, Scheduling, and Dispositioning*.

3.2.2 The Host site provides the following support for CCP activities:

- [A] Radiological controls as needed to support characterization activities, including:
 - Radiological postings.
 - Radiation protection surveys, both initial and routine, on characterization equipment and provide approved survey reports to the CCP Site Project Manager (SPM), as required.
 - Personnel dosimetry.
 - Dose assessments and dosimetry reports.
 - Calibrated and source checked survey instrumentation, as required.
 - Radiological Technical Work Documents (RTWDs) to support CCP activities, as required.

- Bioassay sample collection, evaluation, and reports. Bioassay reports will be provided to the CCP Vendor Project Manager (VPM) within 90 days of sample collection, if applicable.
- Radiological source controls.
- Radiological Technicians for monitoring.
- Responsible for secondary generated waste which is not TRU waste.
- Personal Protective Equipment, as necessary.
- Personnel facilities to accommodate the characterization and loading process.

[B] Provides site-specific training, as needed, to ensure safe operations within the facility.

[C] Provides ES&H support, as needed.

[D] Provides Fire Protection and Emergency Management support, as needed.

[E] Provides Nuclear Regulatory Commission License oversight.

[F] Provides drum handling, inventory control, and storage location tracking.

[G] Provides personnel to be trained and qualified under the CCP program as needed to support CCP activities such as AK, VE, and radiological characterization, if applicable.

NOTE

Sandia National Laboratories/New Mexico is responsible for classification releases of AK summary reports and source documents.

- [H] Performs document reviews as required to allow the public release of documents such as the AK Summary Report. The Host site maintains the responsibility for reporting potential issues resulting from issues with safe operation of CCP characterization activities (e.g., Technical Specifications, Radiation Safety, Industrial Safety, IH, Maintenance, Lockout/Tagout (LO/TO), Conduct of Operations, etc.) at Host site. The Host site shall allow CCP to participate in investigations resulting in reports from issues with safe operation of CCP characterization activities at Host site.
- [I] The Host site will be allowed to participate in CCP investigations when a waste certification event results in a CCP-initiated ORPS or PAAA report.
- [J] Provides adequate space and file storage capacity for CCP personnel to maintain records.

3.3 CCP Site Project Manager (SPM)

- 3.3.1 Functions as CCP's primary interface and point-of-contact between CCP and the Host site for all waste characterization, certification, and transportation activities.
- 3.3.2 Ensures CCP and Host site personnel are trained and qualified to perform WIPP-compliant TRU waste characterization and transportation activities at the Host site prior to commencement of work activities.
- 3.3.3 Confirms sufficient characterization equipment is available to perform the required characterization activities at the Host site.
- 3.3.4 Provides the AK Summary Report for DOE waste characterized by the CCP to the Host site STR/Designee.
- 3.3.5 Works in conjunction with Host site operations to establish and maintain reasonable and appropriate throughput of waste containers.
- 3.3.6 Ensures that project level verification and validation of BDRs are completed.

- 3.3.7 Provides status on CCP characterization operations to the Host site STR/Designee.
- 3.3.8 Reviews required software QA per CCP-QP-022, *CCP Software Quality Assurance Plan*.
- 3.4 Acceptable Knowledge Expert (AKE)
 - 3.4.1 Collects, compiles reviews, and documents AK in accordance with CCP-TP-005, *CCP Acceptable Knowledge Documentation*.
 - 3.4.2 Ensures CCP has obtained necessary container information prior to characterization.
- 3.5 CCP Quality Assurance (QA)
 - 3.5.1 Functions as CCP's primary interface and point-of-contact for QA matters between CCP, Host site, DOE/Albuquerque, and DOE/CBFO.
 - 3.5.2 Validates Nonconformance Reports (NCRs) and corrective action documentation generated by CCP personnel performing characterization activities at the Host site.
 - 3.5.3 Notifies the Host site STR/Designee of any potential ORPS or Noncompliance Tracking System-Reportable PAAA issues resulting from the certification of TRU waste by CCP at SNL.
 - 3.5.4 Provides information copies of NCRs and corrective action documentation to the Host site STR/Designee, as requested.
 - 3.5.5 Ensures that nonconformances are dispositioned in a timely manner in accordance with CCP-QP-005, *CCP TRU Nonconforming Item Reporting and Control*.
 - 3.5.6 Ensures that programmatic deficiencies are documented for corrective action and resolution in accordance with NWP issues management requirements.
 - 3.5.7 Ensures receipt inspection per CCP-QP-026, *CCP Inspection Control*, of procured items and services is performed when procured by CCP.
 - 3.5.8 Provides the Host site STR/Designee with a copy of the semi-annual trending summary reports per CCP-QP-014, *CCP Quality Assurance Trend Analysis and Reporting*.

- 3.6 Host Site Subcontract Technical Representative (STR)/Designee (Host Site Management Representative)
 - 3.6.1 Functions as the Host site's primary interface and point-of-contact between the Host site and CCP.
 - 3.6.2 Ensures cognizant Host site and generator Point of Contacts/Subject Matter Experts (SMEs) are identified and available as necessary to support the review of CCP documents defined in step 4.16.3.
 - 3.6.3 Coordinates review, provides comments, and approves comments resolutions on documents listed in Section 4.16.3. This includes facilitating generator document review and comment resolution as necessary. The review and comment resolution will be documented in accordance with CCP-QP-010, *CCP Document Preparation, Approval, and Control*.
 - 3.6.4 Ensures safety reviews that may be needed for proposed modifications to CCP hardware, software, or procedures are prepared and approved by the appropriately qualified Host site personnel prior to CCP implementing the proposed modification.
 - 3.6.5 Ensures needed site infrastructure support, such as radiological, industrial safety and IH, is available for waste characterization.
 - 3.6.6 Ensures documentation of completed Host site-specific training is delivered to the CCP SPM.
 - 3.6.7 Coordinates review, provides comments, and approves comment resolutions on procedures listed in Section 4.16.3 for the purpose of ensuring facility safety requirements are met.
 - 3.6.8 Provides local support to CCP, including supporting characterization operations as needed. Also provides personnel to support the CCP AK Experts (AKE) in the collection of required documents and procedures as needed.
 - 3.6.9 Ensures that periodic QA surveillances of CCP operations by the Host site are conducted and reported to CCP.
 - 3.6.10 Distributes the CCP documents listed in Section 4.16.3 to Host site reviewers as required by the Host site administrative controls.
 - 3.6.11 Reviews and concurs in accordance with CCP-QP-010, on documents in Section 4.16.3 of this Interface Document.

- 3.6.12 Provides facilities, construction services, utilities, phone services, office services, and supplies.
- 3.7 Nuclear Facility Manager (NFM) (Host site position)
 - 3.7.1 Responsible for equipment, structures, activities, processes, and personnel assigned nuclear facilities.
 - 3.7.2 Develop and maintain the authorization basis.
 - 3.7.3 Maintains compliance with the authorization basis documents.
 - 3.7.4 Oversees the authorization of work in assigned facilities.
- 3.8 CCP Vendor Project Manager (VPM)
 - 3.8.1 Monitors the List of Qualified Individuals (LOQI) daily (when characterization activities are being performed) to confirm that only qualified personnel perform waste characterization activities.
 - 3.8.2 Functions as CCP's primary interface and point-of-contact between CCP and the Host site STR/Designee for characterization field operations.
 - 3.8.3 Provides pre-operation briefings when activities are being conducted.
 - 3.8.4 Ensures that in-process documents and the documents listed in Section 4.17.2 are transmitted to the CCP Site Project Office as soon as practicable in accordance with CCP-QP-008.
 - 3.8.5 Ensures applicable Material Safety Data Sheets (MSDSs) are maintained and available to support operations.
 - 3.8.6 Provides oversight of field operations to ensure safe, efficient operations.
 - 3.8.7 Supervises day-to-day TRU waste characterization activities.
 - 3.8.8 Notifies the CCP SPM and the Nuclear Facility Manager (NFM) of any abnormal events associated with safe operation of CCP characterization activities for reporting purposes.

4.0 PROCEDURE

4.1 Training and Qualification

- 4.1.1 CCP personnel or Host site personnel who perform work under CCP procedures will be trained and qualified to WIPP requirements in accordance with CCP-QP-002, *CCP Training and Qualification Plan* and/or CCP-QP-040, *Support Training*, as applicable.
- 4.1.2 CCP and Host site personnel assigned to field operations must complete the Host site-specific training. The STR will ensure the Host site-specific training documentation is sent to CCP Training.
- 4.1.3 Both the CCP training and Host site-specific training must be completed prior to the individual being assigned to perform independent work at the Host site.
- 4.1.4 Administrative work, such as BDR reviews requiring no access to the characterization activities or processes at the Host site, may be completed by personnel who have not completed the required Host site-specific training. Personnel who have not completed Host site-specific training will not be allowed unescorted access to the characterization activities.
- 4.1.5 A LOQI will be monitored daily by the CCP VPM to confirm CCP personnel and Host site personnel assigned to CCP are qualified.

4.2 Container Management

- 4.2.1 The Host site is responsible for drum movement and storage.
- 4.2.2 The Host site will provide the dose rate and surface contamination information necessary to certify the container or canister.
- 4.2.3 CCP is responsible for container management throughout the CCP characterization process.
- 4.2.4 The Host site is responsible for providing documented information to the CCP SPM on any modification to a drum or canister after closure and/or AK has been approved.

- 4.2.5 The CCP SPM will review the documented information of modified drums and will notify the STR when the drums are approved for entrance into the CCP characterization process.

4.3 Deficiencies and Nonconformances

4.3.1 CCP-Identified Deficiencies and Nonconformances

- [A] If CCP personnel identify a nonconforming condition associated with a waste container during the CCP characterization or certification process, CCP personnel will initiate an NCR in accordance with CCP-QP-005.
- [B] Programmatic deficiencies will be addressed in accordance with the NWP Issues Management process.
- [C] If the deficiency or nonconformance is an issue that will be resolved by CCP, CCP QA will ensure appropriate closure in accordance with CCP procedures. A copy of any CCP documentation related to CCP-identified nonconformances or deficiencies associated with DOE TRU waste at Host site will be provided to the Host site STR/Designee upon request.

NOTE

In some cases, Host site may perform the work required to resolve deficiencies identified in CCP NCRs and will initiate internal documentation as required by the Host site program. However, the CCP NCRs will remain open, and CCP NCR Hold Tags will remain on the affected TRU containers until resolution of the NCR condition has been confirmed by CCP under its certified program. At that point, CCP will close the NCRs and remove the NCR tags on TRU drums. Other methods used to control the affected items may include segregation and/or the use of dual independent check systems (for non-compliant RH waste packages based on the As Low As Reasonably Achievable [ALARA] principle) which utilize two separate and distinct processes and data sets for verifying waste packages are acceptable for shipment.

- [D] If the deficiency or nonconformance cannot be resolved by CCP (e.g., does not meet TRU Waste Acceptance Criteria), then the specific drum will be returned with all required documentation to the Host site for disposition. CCP will work with the Host site to resolve all issues with drums.

[E] CCP personnel will immediately notify the CCP VPM of any abnormal event associated with the safe operation of CCP characterization activities. The CCP VPM will notify the CCP SPM and the SNL NFM and the STR of the abnormal event.

[F] CCP QA will notify the STR/Designee of potential CCP ORPS and PAAA reports resulting from the certification of waste by CCP at SNL.

4.3.2 Host Site Identified Deficiencies and Nonconformances

[A] Deficiencies or nonconformances identified by the Host site during this project that affect waste characterization or certification activities shall be promptly identified to the CCP Project Manager (PM) or CCP VPM, who will perform the actions described in Sections 4.3.1[A] or 4.3.1[B], to ensure that the deficiencies or nonconformances are documented and resolved.

[B] For deficiencies or nonconformances that are the responsibility of the Host site to resolve, the Host site will initiate the appropriate documentation in accordance with the Host site QA program and its implementing procedures.

4.4 Visual Examination (VE)

4.4.1 CCP will conduct VE at the time of waste packaging or as required by the governing documents in accordance with CCP-TP-500, *CCP Remote-Handled Waste Visual Examination*, using a facility provided by the Host site.

4.4.2 Host site will be responsible for all maintenance and repairs to the facility used for VE and/or repackaging operations.

4.5 Radiological Characterization

4.5.1 The Host site will provide a technical lead to support radiological characterization efforts based on the use of AK for stored RH-TRU waste.

4.5.2 CCP will provide qualified personnel, including Host site personnel, to perform radiological characterization activities.

4.5.3 The Host site will provide support for the CCP for performing operational checks of radiological characterization instrumentation. This support includes source control, as needed.

4.6 Source Control

4.6.1 No Special Nuclear Material (SNM) sources are anticipated to be required to support radiological characterization.

4.6.2 The Host site will be responsible for management of all radiological characterization non-SNM reference sources. Responsibilities consist of: inventory control, storage, shipment, and usage. The Host site will provide CCP the names of the custodian and authorized users when required or requested by CCP.

4.6.3 The Host site will be responsible for providing radiological control support associated with the CCP non-SNM reference sources. This support consists of maintaining the radioactive materials area (RMA) postings, periodic surveys and performing a semi-annual leak check on the sources as requested by CCP.

4.6.4 The Host site, as custodian of non-SNM sources, will provide to CCP the necessary sources for operational checks as requested. CCP personnel will be trained as users of the sources to the Host site procedures, as required.

4.7 Acceptable Knowledge (AK)

4.7.1 CCP records personnel will maintain the auditable AK record necessary to support the AK Summary Report in accordance with the WAP and QAPD.

4.7.2 CCP AK personnel collect, compile, and review AK documentation in accordance with CCP-TP-005 and/or the WCPIP.

[A] Site Management Representative (SMR) assist CCP AK personnel with AK collection.

4.7.3 CCP AK personnel and Host site/generator personnel develop an Interface Waste Management Documents List (IWMDL) that includes facility processes, plans, and procedures that control the following waste management activities as applicable:

- Waste generating activities
- Waste retrieval activities
- Waste packaging/repackaging
- Waste treatment/processing (e.g., neutralization, deactivation, and solidification/immobilization)
- Waste inspection, testing, and characterization
- Decontamination and Decommissioning operations
- Any other activity that changes the physical, chemical, or radiological properties of waste to be characterized by CCP

[A] The AKE develops the new or revised IWMDL in accordance with CCP-TP-005 using the existing body of AK documentation.

[B] The SMR ensures cognizant Host site/generator personnel (CP) are assigned to review the new or revised AKDL for accuracy and completeness and provide written comments as appropriate.

[C] The AKE and SMR resolve comments and questions.

[D] CCP posts the new revised IWMDL on the CCP secure file transfer protocol (sftp) site.

NOTE

This note applies to step 4.7.4. The activities of step 4.7.4 may be initiated as necessary by the AKE for existing waste streams, new waste streams, or during AK revisions/updates.

4.7.4 AK Assessments (AKA) are performed in accordance with CCP-TP-005.

[A] SPM provides SMR with the AKA results.

[B] SMR distributes results of the AKA to designated CPs for review and comment.

[C] AKE resolves comments with SMR and CPs.

[D] SMR concurs with final AKA in writing.

4.7.5 CCP submits new or revised AK Summary Reports to the SMR/Designee for review and concurrence.

[A] The SMR ensures CP review the AK Summary Report for accuracy and completeness providing comments in accordance with CCP-QP-010.

4.7.6 A Host site/generator CP attends a briefing on new or revised AK Summary Reports.

4.7.7 SMR notifies the SPM and AKE in writing of any new revised waste management activities that would necessitate a change to the IWMDL.

4.7.8 The SPM and AKE evaluate new or revised waste management activities and determine if revision to the IWMDL and/or AK Summary Report is needed.

4.7.9 SPM request CCP Management Assessment to review and verify new or revised waste management activities that require revision to IWMDL and/or AK Summary Report.

4.7.10 The Host site will not provide any waste container to CCP for characterization until the AKE has received the latest version of the work document (including field changes, other immediate procedure changes, Timely Orders/Standing Order, Operator Aids, etc.) used to generate, package, and/or repackage the container.

[A] The work document(s) provided to the AKE will contain the following information at a minimum:

- Identification (including revision) of the work document(s) used to generate the container
- Type of activity (e.g., packaging/repackaging only, remediation, treatment)

- Amount (estimated) and type (if known) of liquids
- Type and quantity (estimated) of absorbents used
- Type and quantity (estimated) of neutralization agents used
- Any unexpected conditions or reactions encountered
- General description of waste items
- Packaging configuration (e.g., 55-gallon drum with 20 mil liner bag)
- Filter data including model and quantity used
- Parent container identification

4.7.11 The AKE will ensure they have obtained and reviewed the correct version of IWMDL documentation used to generate/manage a container before adding it to the AK Tracking Spread Sheet.

4.7.12 At a minimum of once per calendar quarter, SMR will review the current IWMDL and provide written assurance to the CCP SPM that the list is up to date OR provide necessary documentation to revise the list.

4.8 Data Validation and Reconciliation

4.8.1 CCP, using CCP-trained Host site personnel where applicable, will provide data generation level validated data packages for all characterization activities. CCP will provide data generation level validated data packages for VE, and radiological characterization, in accordance with the approved CCP procedures governing these processes.

4.8.2 Wherever CCP has obtained the services of another CBFO-certified TRU Waste Program, that program will provide data generation level BDRs to CCP in accordance with their own programmatic documents.

4.8.3 CCP will provide project level validated data packages for radiological characterization, and VE.

- 4.8.4 The CCP SPM and AKE will perform data reconciliation with applicable data quality objectives (DQOs) in accordance with CCP-TP-002, *CCP Reconciliation of DQOs and Reporting Characterization Data*, and/or the Characterization Reconciliation Report.

4.9 Measuring and Test Equipment (M&TE)

- 4.9.1 CCP operations personnel will provide a list of equipment that requires calibration to the Host site STR/Designee.
- 4.9.2 CCP is responsible for providing any National Institute Standard Technology traceable or equivalent calibrated M&TE.
- 4.9.3 The Host site will make available national standard-traceable calibration certificates for gamma and neutron dose measurement instrumentation. Copies of the Certificates of Calibration will be provided to the CCP VPM and CCP M&TE Custodian.
- 4.9.4 The Host site STR/Designee will make calibration documentation and processes accessible as needed for internal and external audits.

4.10 Work Standards

- 4.10.1 CCP operations personnel will work under the Host site LO/TO procedure.
- 4.10.2 CCP and Host site-provided personnel will perform quality-affecting work under CCP procedures for TRU waste characterization and certification activities. Host site procedures and work packages will be used for non-waste characterization activities (e.g., equipment repairs).
- 4.10.3 CCP operations personnel will operate in accordance with CCP-PO-005, *CCP Conduct of Operations*.
- 4.10.4 CCP operations personnel will comply with Host site procedures as they apply to established characterization areas.

- 4.10.5 CCP personnel will work under the Host site safety basis and work control standards, (i.e., General Employee Radiological Training [GERT]). Maintenance work control activities for CCP supplied equipment will be controlled using CCP-TP-140, *CCP Equipment Maintenance*. Maintenance work control activities on Host site-supplied equipment will be controlled using Host site work authorization procedures.
- 4.10.6 As outlined in CCP-CM-001, *CCP Equipment Change Authorization and Documentation*, and CCP-PO-005, it is the responsibility of the CCP VPM to maintain equipment configuration and authorize equipment changes to ensure characterization systems are operated and maintained in accordance with the Host site safety basis. The CCP VPM will not authorize a change to any characterization system until steps 4.10.6[A] and [A] have occurred:
- [A] The CCP Cognizant Engineer has reviewed and approved the proposed change in writing to the CCP VPM (this may be accomplished via e-mail). In addition, any proposed change to any vendor-supplied characterization system must be reviewed and approved by an appropriate vendor engineer or representative. The vendor engineer or authorized representative must provide written approval to the CCP VPM (this may be accomplished via e-mail) for the proposed change.
- [B] The Host site STR/Designee must concur with the proposed change in writing (this may be accomplished by e-mail) and provide a copy of the approved Unreviewed Safety Question (USQ), if it is required.
- 4.10.7 All CCP personnel will provide bioassay samples to the Host site, as required, under the routine/random program established by the Host site. All CCP personnel will submit the bioassay samples required to establish a baseline for activities at the Host site, if applicable.
- 4.10.8 The Host site will analyze bioassay samples provided by CCP personnel within 90 days of collection, if applicable.
- 4.10.9 The CCP VPM will be notified if any bioassay sample provided by CCP personnel indicates that an uptake of any radioactive isotopes may have occurred as soon as is reasonably possible.

- 4.10.10 Host site radiological controls personnel will perform routine surveys for contamination and radiation as specified in Host site policies or procedures. The CCP SPM or CCP VPM and appropriate Host site management personnel will be notified immediately upon the discovery of any loose surface contamination in any CCP-occupied buildings or any of the CCP-operated characterization equipment contained in these buildings. Access to and copies of routine survey results will be made available to CCP upon request.
- 4.10.11 The Host site will provide the CCP SPM or CCP VPM with the positive results of continuous or fixed air sample filter analysis within 45 days of removal of the filter from the sampler head, in any monitored area routinely occupied by CCP personnel.
- 4.10.12 The Host site will provide the necessary dosimetry for CCP personnel. Dosimetry reports will be provided to the CCP SPM or CCP VPM.
- 4.10.13 CCP will provide historical information on the operation of any CCP equipment deployed at Host site for the purpose of lessons learned and the implementation of any mitigating actions from these lessons learned.
- 4.11 Waste Certification and WIPP Waste Information System (WWIS/WDS) Data Entry
 - 4.11.1 CCP will prepare Waste Stream Profile Forms (WSPFs) for the subject Host site waste in accordance with CCP-TP-002.
 - 4.11.2 CCP will transmit characterization and certification data in accordance with WWIS/WDS and CCP-TP-030, *CCP CH TRU Waste Certification and WWIS/WDS Data Entry*, and CCP-TP-530, *RH TRU Waste Certification and WWIS/WDS Entry*.
 - 4.11.3 CCP shall submit copies of WSPFs to the Host site for approval before submittal to CBFO. The Host site will provide written concurrence on the basis of continued compliance with procedures and programs and CBFO certification of the CCP characterization program.
 - 4.11.4 The CCP Waste Certification Officials (WCO) will document and certify that all TRU waste payload containers meet the requirements of the WAC and submit the data to the WWIS/WDS for approval.

- 4.11.5 The CCP WCO will provide listings of drums requiring retrieval from storage for the purposes of loading into RH-TRU 72B canisters.
- 4.11.6 CCP will begin their loading and shipping process using payload containers approved in WWIS/WDS.
- 4.12 Transportation
 - 4.12.1 CCP is responsible for meeting all requirements for loading and shipping TRU waste certified by CCP as approved in WWIS/WDS.
 - 4.12.2 CCP will load drums according to CCP WCO listings, using approved procedures, and will provide the CCP WCO with the necessary data to complete the process.
 - 4.12.3 The CCP WCO and Transportation Certification Official (TCO) will work with the Host site as necessary to complete the appropriate transportation activities.
 - 4.12.4 The CCP TCO will work with the Host site as necessary to load the shipping casks.
 - 4.12.5 The CCP TCO will coordinate the completion of the preparations of the cask for shipment in accordance with DOE/CBFO and CCP controlled procedures.
- 4.13 Quality Assurance (QA)
 - 4.13.1 All work performed in the completion of this waste characterization and certification scope will be in compliance with applicable CCP and NWP procedures.
 - 4.13.2 CCP will conduct periodic QA surveillances to assess compliance with applicable CCP Program requirements.
 - 4.13.3 The Host site will conduct audits/surveillances to assess compliance with applicable procedures.

4.14 Procurement

4.14.1 All items and services to be purchased under CCP-PO-001 will be graded by CCP in accordance with CCP-QP-001, *CCP Graded Approach*. The grading will determine whether the items and services are quality-affecting (Quality Level 1 or Quality Level 2) or non quality-affecting (Quality Level 0) for WIPP characterization, certification, and transportation.

- [A] CCP will procure all quality-affecting items and services in accordance with CCP-QP-015, *CCP Procurement*. These items and services are the sole responsibility of CCP with regard to their quality integrity.
- [B] Host site will procure items and services determined by the CCP grading process to be non-quality-affecting for WIPP characterization, certification, and transportation. The Host site will be responsible for verification and compliance for these items and services.
- [C] Items and services that are related to safe operation of the facility, and which do not affect WIPP characterization, certification, and transportation, are not required to be graded by CCP.
- [D] Receipt inspection of quality-affecting items will be performed by personnel trained and qualified in accordance with CCP QA requirements.
- [E] CCP QA will perform receipt inspections of CCP procured items/material and will maintain Source/Receipt Inspection Verification Sheets and associated objective evidence for each shipment in accordance with CCP-QP-026.
- [F] The Host site shall provide support to CCP in the performance of the receipt inspection and material control. The minimum support to be as follows:
- Provide notification to CCP QA of items/material received.
 - Maintain material in a hold status until inspected and released by CCP QA.
 - Provide suitable staging area or warehouse location to perform inspections.

- Provide personnel, tools, and other resources required to facilitate inspections.
- Provide adequate storage facilities and maintain control of the items/material provided to Host site.

4.15 Project Control

- 4.15.1 CCP and Host site will provide weekly status for their respective scheduled activities.
- 4.15.2 CCP will maintain and provide Host site with an up-to-date organization chart listing CCP personnel, along with associated roles and responsibilities.

4.16 Procedures

- 4.16.1 As defined in CCP-QP-010, editorial or minor changes may be made to all CCP documents except CCP-PO-001; CCP-PO-002, *CCP Transuranic Waste Certification Plan*; CCP-PO-003, *CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC)*; CCP-PO-505, *CCP Remote-Handled Transuranic Waste Authorized Methods for Payload Control (CCP RH-TRAMPAC)*, and CCP-QP-001 without the same level of review and approval as the original document. CCP will process any required changes in accordance with CCP-QP-010.
- 4.16.2 New Technical Operating Procedures (procedures that operate equipment) developed by CCP, scheduled to be used at the Host site, shall be evaluated by the Host site STR/Designee to determine if the procedure shall be added to the Host site review lists defined below.
- 4.16.3 The following documents, and all revisions to these documents, will be provided to the Host site STR/Designee for review:
 - CCP AK Reports
 - CCP Interface Waste Management Documents List
 - CCP AK Assessments
 - CCP Waste Stream Profile Forms

- CCP Health and Safety Plans, as required as per 10 CFR 851
- CCP-TP-140, *CCP Equipment Maintenance*
- CCP-TP-500, *CCP Remote-Handled Waste Visual Examination*
- CCP-TP-504, *CCP Dose-to-Curie Survey Procedure for Remote-Handled Transuranic Waste*
- CCP-TP-509, *CCP Remote-Handled Transuranic Container Tracking*

NOTE

This note applies to step 4.16.4. Examples of cognizant personnel may include, but is limited to SMEs for the following as applicable to the document reviewed:

- Waste generating/packaging/repackaging processes
- Chemical and physical characteristics of waste streams
- Chemical compatibilities
- Radiological properties of waste streams
- Treatment permits
- Nuclear Safety
- Environmental compliance
- Facility operations

4.16.4 Upon receipt of a document listed in step 4.16.3 the SMR/Designee will ensure the document is reviewed by cognizant personnel responsible for the waste management activities relevant to the scope of the document.

4.16.5 As warranted, the SMR/Designee will provide written comments to CCP using Document Review Record in accordance with CCP-QP-010.

4.16.6 CCP, at its direction, may request objective evidence to support the competency of Host site/generator reviewers.

4.16.7 The CCP SPM will confirm that the SMR/Designee written comments are resolved with the Host site STR/Designee concurrence prior to proceeding with CCP operations under the scope of the document being reviewed.

4.16.8 The following documents, and all revisions to these documents, will be provided to the Host site STR/Designee as Notify Only for review:

- CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- CCP-PO-002, *CCP Transuranic Waste Certification Plan*
- CCP-PO-005, *CCP Conduct of Operations*
- CCP-PO-505, *CCP Remote-Handled Transuranic Waste Authorized Methods for Payload Control (CCP RH-TRAMPAC)*
- CCP-QP-002, *CCP Training and Qualification Plan*
- CCP-QP-005, *CCP TRU Nonconforming Item Reporting and Control*
- CCP-QP-008, *CCP Records Management*
- CCP-QP-010, *CCP Document Preparation, Approval, and Control*
- CCP-TP-001, *CCP Project Level Data Validation and Verification*
- CCP-TP-002, *CCP Reconciliation of DQOs and Reporting Characterization Data*

4.16.9 CCP will maintain control of procedures in accordance with CCP-QP-010.

4.16.10 The Host site STR/Designee will review or designate the appropriate reviews of the CCP procedures listed in Section 4.16.3 and forward written comments to CCP Document Control in accordance with CCP-QP-010 for resolution.

4.16.11 The CCP SPM will confirm that the Host site STR/Designee written comments are resolved with the Host site STR/Designee concurrence prior to proceeding with CCP operations.

4.17 Document Transmittals

4.17.1 Documents listed in this section, which are provided from one organization to the other as information copies, may be transmitted via memo, fax, e-mail, or formal correspondence. Documents identified as QA records will be transmitted in accordance with CCP-QP-008.

4.17.2 Documents to be provided to the Host site by CCP include, as required:

- [A] List of equipment requiring calibration
- [B] Copies of NCRs and corrective action documentation as requested
- [C] Copies of AK Summary Reports
- [D] Copies of AK source documents and source document summaries, as requested
- [E] Copies of semi-annual trending summary reports
- [F] Copies of QA surveillance reports
- [G] Copies of WSPFs
- [H] Copies of VE and radiological characterization information and data, as requested
- [I] Information on chemical usage, sources required, and copies of applicable MSDSs as requested for inventory or reporting reasons
- [J] Copies of training requirements and associated training records for CCP personnel supporting the Host site, upon request.
- [K] CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- [L] CCP-PO-002, *CCP Transuranic Waste Certification Plan*

[M] Results of all DOE/CBFO/New Mexico Environment Department (NMED)/Department of Environmental Quality/United States Environmental Protection Agency (EPA) or other regulatory audit or compliance/enforcement actions that may impact its ability to characterize and transport TRU waste.

[N] Copy of final data package to WIPP via Waste Information System, as requested.

[O] NMED and EPA approval of the CBFO Certification Audit Report.

[P] Documents called out in Section 4.16.

4.17.3 Documents to be provided to CCP by Host site include:

[A] Documentation of required training

[B] Notification of training completion for CCP for training received from the Host site

[C] Copies of AK source documentation requested by CCP

[D] Radiological dose rate and surface contamination results on waste drums as needed to support WWIS/WDS data entry

[E] Radiological information as described per step 3.2.2[A] of this document

[F] Copies of NCRs, deficiency reports, or other nonconformance documentation per Section 4.3

[G] Copies of the results of Host site assessments pertaining to CCP

[H] Copies of calibration certifications

[I] Copies of QA surveillance reports

[J] Radiological workplace and exposure data including ALARA Planning documents for evaluation of activities.

4.18 Authorization Safety Basis and Configuration Management

- 4.18.1 CCP will coordinate activities with the Host site to ensure site license requirements have been met.
- 4.18.2 The Host site has primary responsibility to ensure that CCP equipment and processes have been appropriately considered within the Host site license requirements.
- 4.18.3 CCP has primary responsibility to control operations and equipment configurations to ensure compliance with CCP and Host site procedures that protect the personnel, public, and environment.
- 4.18.4 For CCP-provided equipment, CCP will provide documentation necessary for the Host site to perform the evaluation against the safety analysis. This documentation may include health and safety plans, hazards assessments, system descriptions, equipment drawings, or other information deemed necessary by the Host site.
- 4.18.5 For Host site-provided equipment, CCP will review operational and authorization basis documentation to ensure the safety of CCP personnel while operating equipment.
- 4.18.6 All changes to equipment operated by CCP will be controlled by the Host site work-control program to ensure appropriate authorization basis evaluations are conducted and associated controls are established.
- 4.18.7 The Host site will submit all changes to authorization basis requirements that affect CCP operations for review and concurrence prior to implementation.

5.0 RECORDS

- 5.1 Records generated during the performance of the waste characterization and certification scope are controlled by CCP.
- 5.2 QA records generated by CCP documents referenced in this plan are maintained in accordance with CCP-QP-008.
- 5.3 QA records generated by CCP will be maintained and dispositioned in accordance with CCP-QP-028.
- 5.4 Host site will maintain the following records in accordance with Host site requirements. The list includes, but is not limited to, the following:
 - 5.4.1 MSDSs
 - 5.4.2 Calibration Certifications
 - 5.4.3 Project Control schedules and cost data reports
 - 5.4.4 Radiological records (Exposure records)

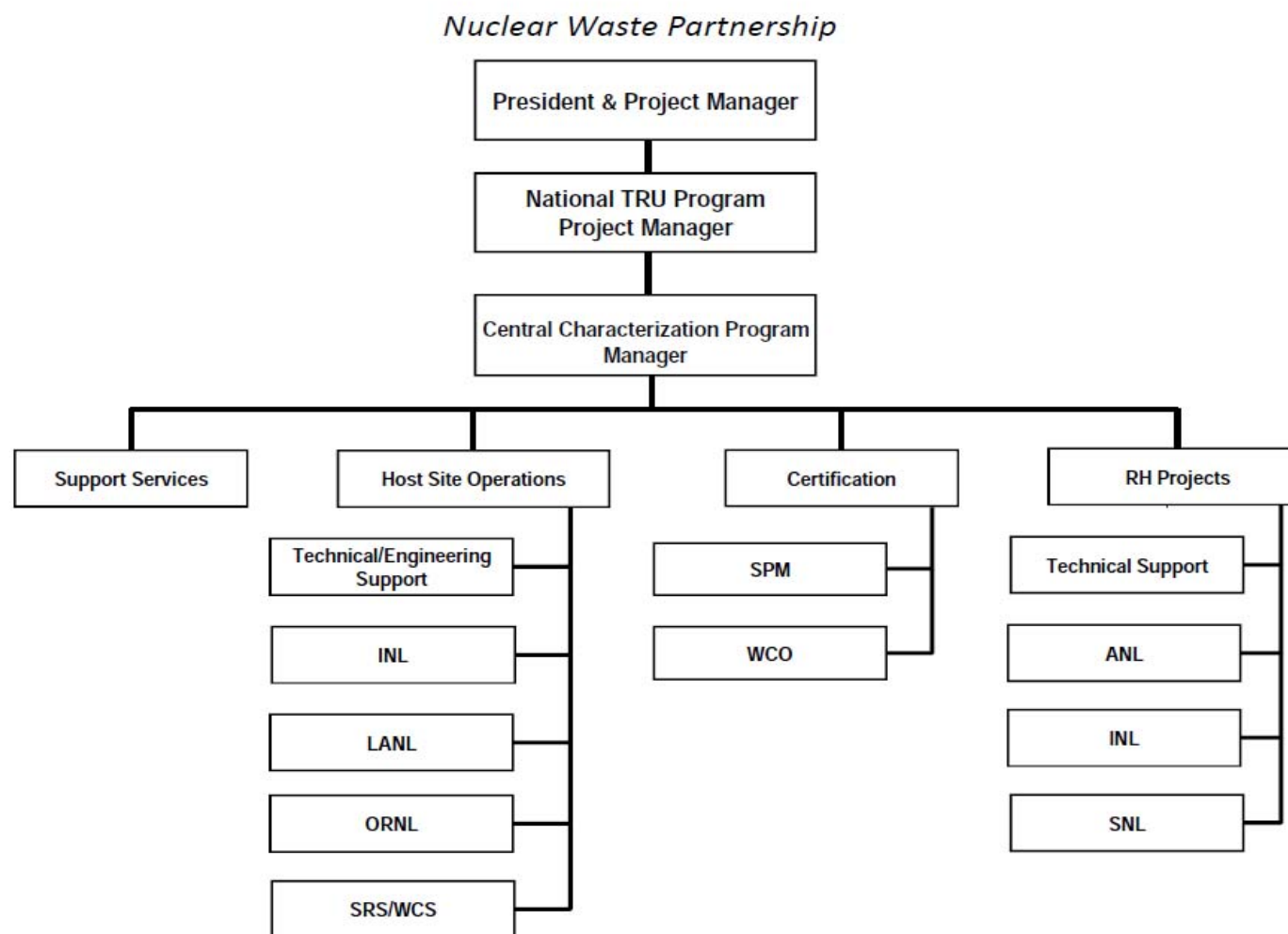
6.0 OVERSIGHT

NOTE

Through the associated SOW, the Host site has delegated the authority to characterize, certify, and ship TRU waste to the WIPP or to INL. Nonetheless, the Host site retains the responsibility for proper disposal as the waste generator. Accordingly, the following actions will define the level of oversight of the CCP by Host site personnel.

- 6.1 The Host site will accept successful completion of the CBFO certification audit as adequate evidence that the CCP implementation at the Host site is fully compliant with waste disposal requirements as set forth in the WCCIP, WAC, and WAP. However, the Host site may conduct, at their discretion, periodic surveillances of CCP operations.
- 6.2 Following successful completion of the certification audit, the Host site QA will conduct periodic surveillances to ensure CCP work is conducted in accordance with CCP procedures. These surveillances will be conducted in accordance with the Host site QA procedures.
- 6.3 The Host site QA will provide copies of its surveillance reports to the CCP PM and CCP SPM. CCP QA and the SPM will take the following actions:
 - 6.3.1 Review the Host site surveillance reports for any finding or other deficiencies against the CCP SOW.
 - 6.3.2 Provide Host site QA with CCP actions to correct the identified deficiencies.
 - 6.3.3 CCP QA will maintain an information file of the Host site surveillance reports conducted on the CCP SOW.

Figure 1. Nuclear Waste Partnership – RH



ATTACHMENT 47
WP 08-NT.03 WASTE STREAM PROFILE FORM REVIEW AND
APPROVAL PROGRAM

13 PAGES

WP 08-NT.03
Revision 16

Waste Stream Profile Form Review and Approval Program

Cognizant Section: Regulatory Environmental Services

Approved By: Rick Chavez



An AECOM-led partnership with B&W and AREVA

Waste Stream Profile Review and Approval Program
WP 08-NT.03, Rev. 16

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Waste Stream Profile Review and Approval Program
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CHANGE HISTORY SUMMARY

REVISION NUMBER	DATE ISSUED	DESCRIPTION OF CHANGES
12	12/29/10	<ul style="list-style-type: none"> • Section 1.0: Updated the definition of a waste stream to align with the revised definition in the HWFP. • Section 3.0: Removed discussion regarding verification of waste compatibility using Appendix C1 of the RCRA Part B Permit Application (DOE, 1997). • Section 4.0: Updated criteria that describe two of the verification checks performed by the DA. • Section 11.0: Inserted a reference to the ATWIR Report. Global: Updated citations to attachments from the HWFP.
13	01/02/13	<ul style="list-style-type: none"> • Editorial changes in accordance with MD 1.1. • Updated review criteria in section 7.0.
14	04/09/13	<ul style="list-style-type: none"> • Updated review criteria in sections 1.0 through 8.0 to incorporate new Hazardous Waste Facility Permit requirements for waste characterization methods. • Deleted Section 5.0, Review Criteria for Statistical Evaluations.
15	09/10/13	<ul style="list-style-type: none"> • Deleted review criteria in section 4.0 (criteria now covered in WP 08-NT1001). • Deleted review criteria in section 6.0 (criteria now covered in WP 08-PT3400).
16	09/28/15	<ul style="list-style-type: none"> • Deleted review criteria in section 5.0 (criteria now covered in WP 08-NT1005). • Made editorial changes necessary to avoid confusion with the use of term “package” which has a specific connotation in the Waste Analysis Plan relative to WSPF reviews.

Waste Stream Profile Review and Approval Program
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ABBREVIATIONS/ ACRONYMS

AK	Acceptable Knowledge
CBFO	Carlsbad Field Office
CFR	<i>Code of Federal Regulations</i>
CIS	Characterization Information Summary
DA	Data Administrator
DOE	U.S. Department of Energy
DRR	Document Review Record
EPA	U.S. Environmental Protection Agency
HWFP	Hazardous Waste Facility Permit
HWN	Hazardous Waste Number
NMED	New Mexico Environment Department
NWP	Nuclear Waste Partnership LLC
RCRA	Resource Conservation and Recovery Act
RES	Regulatory Environmental Services
TRU	Transuranic
TRUCON	Transuranic Content (Codes)
VE	Visual Examination
WAC	Waste Acceptance Criteria
WAP	Waste Analysis Plan
WDS	Waste Data System
WIPP	Waste Isolation Pilot Plant
WSPF	Waste Stream Profile Form

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1.0 INTRODUCTION ¹

This document summarizes the applicable requirements and criteria for Waste Isolation Pilot Plant (WIPP) review and approval of Waste Stream Profile Forms (WSPFs) that are prepared by the U.S. Department of Energy (DOE) Transuranic (TRU) Waste Generator/Storage Sites (DOE Sites) and submitted to the Permittees for approval. Each WSPF and accompanying Characterization Information Summary (CIS), herein referred jointly as the WSPF, submitted for approval must meet the applicable requirements described in the Hazardous Waste Facility Permit (HWFP) Waste Analysis Plan (WAP) and the WIPP Waste Acceptance Criteria (WAC) (DOE/WIPP 02-3122, *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant*).

Characterization requirements for individual containers of TRU mixed waste are specified on a waste stream basis. A waste stream is defined as waste materials that have common physical form, contain similar hazardous constituents, and are generated from a single process or activity.

This document describes the processes for internal distribution of each WSPF to the reviewers, refers to procedures used by reviewers to assess each WSPF, and summarizes the processes that are used for transmittal of comments and comment resolution.

Each WSPF is reviewed to verify that the information provided is complete and accurate, and that the waste stream complies with the WAC and the WAP prior to approval. In the event more detailed information is required by a WSPF reviewer during conduct of the review, the DOE Site will be requested to provide a Waste Stream Characterization Package that supports waste characterization determinations. Additionally, chemical sampling and analysis data consisting of a sampling and analysis plan, EPA SW-846 (or equivalent) test methods, and identification of the laboratory to be used for the analysis may be requested. The option for the Permittees to request additional information ensures that the waste being offered for disposal is adequately characterized and accurately described on the WSPF.

2.0 REQUIREMENTS

After a complete Acceptable Knowledge (AK) record has been compiled and either a Determination Request has been approved by DOE or the generator/storage site has completed the applicable testing requirements, the DOE site will complete a WSPF and submit it to the Permittees for review.

All data necessary to check the accuracy of the WSPF will be transmitted to the Permittees for verification. Prior to the first shipment of containers from the approved waste stream, the approved WSPF will be provided to the New Mexico Environment Department (NMED).

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If discrepancies regarding hazardous waste number (HWN) assignment or waste matrix code designation arise as a result of the WIPP WSPF review, the DOE Site will be contacted and required to provide the necessary additional information to resolve the discrepancy before that waste stream is approved for disposal at the WIPP facility. The Permittees will notify NMED of any discrepancies identified during WSPF Review and the resulting discrepancy resolution prior to waste shipment. Containers from the waste stream will not be managed, stored, or disposed of until this discrepancy is resolved in accordance with the WAP (WAP Section C-5a).

2.1 Transmittal From DOE Site to the Permittees

The WSPF for the waste stream shall be transmitted to the Permittees from the DOE Site.

To implement this requirement, sites will transmit each WSPF electronically to site.documents@wipp.ws.

2.2 Distribution From the Carlsbad Field Office to Regulatory Environmental Services

Carlsbad Field Office (CBFO) and designated WIPP contractor personnel who are responsible for distributing documents that are electronically submitted to the CBFO by the DOE Sites will forward the WSPF submittal to Regulatory Environmental Services (RES). RES management will designate an individual to coordinate the review. Hereafter, this individual is referred to as the WSPF Review Coordinator.

2.3 Distribution From RES to Reviewers

The WSPF Review Coordinator electronically distributes the WSPF via email to Nuclear Waste Partnership LLC (NWP) Central Characterization Program Waste Information Tracking Systems, and designated technical reviewers for review. The coordinator should verify that each team member received the WSPF to be reviewed.

The reviews of WSPFs will be conducted using a document review record (DRR) form (e.g., CBFO Form 4.2-2). WSPFs are reviewed by RES, NWP, and others on behalf of the Permittees.

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3.0 REVIEW OF THE WASTE STREAM PROFILE FORM

Reviewers will compare the radiographic and visual examination (VE) data obtained subsequent to submittal and approval of the WSPF with characterization information presented in the WSPF. If the reviewers determine (through the data comparison) that the characterization information is adequate, the WSPF will be approved. If the data comparison indicates that analyzed containers have hazardous wastes not present on the WSPF, or a different waste matrix code applies, the WSPF is in error and shall be resubmitted.

For waste streams that do not have an AK Sufficiency Determination approved by the Permittees, the verification of waste stream will be performed by reviewing the Waste Data System (WDS) data for consistency with the WSPF. Information contained in the AK Summary must indicate if the waste has been checked for the characteristics of ignitability, corrosivity, and reactivity. The final verification of waste compatibility will be performed using WDS.

Each reviewer performs an evaluation of the AK Summary to identify the following:

- Inconsistent presentation of information.
- Information that is deemed irrelevant to characterization of the waste stream.
- If the information presented will require additional reviews due to potential impacts to WIPP, such as safety basis or Compliance Certification Application.

If the information presented in the AK Summary is unclear or leaves any doubt about the waste stream meeting the applicable WIPP requirements, the reviewer will request the DOE Site to clarify the discussion and provide additional objective evidence to justify why the entire waste stream (generated and projected) meets all the WIPP requirements.

Development of a checklist to ensure compliance with the review criteria identified in the sections below will be at the discretion of the department managers and/or the individuals assigned to perform the WSPF review. Reviewers should use the criteria in sections 4.0, 5.0, and 6.0 of this document, and the implementing procedures where noted, to perform their reviews and provide results of their evaluations and comments to the WSPF Review Coordinator.

4.0 REVIEW CRITERIA FOR THE DATA ADMINISTRATOR

The WDS includes all of the elements that were implemented in the WIPP Waste Information System to meet regulatory requirements for the operation of WIPP. The criteria used for reviews conducted by the Data Administrators (DAs) are detailed in WP 08-NT1001, *Waste Data System Waste Stream Profile Review*.

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5.0 CRITERIA FOR RCRA REVIEW OF WSPFs

The Resource Conservation and Recovery Act (RCRA) reviewer performs a review of the WSPF in accordance with WP 08-NT1005, *RCRA Review Criteria for Waste Stream Profile Forms*. RCRA reviewers may use the waste container data from the database, when needed, to perform the review of the WSPF. In accordance with RES instructions and procedures, the RCRA reviewer will verify that information submitted in the WSPF meets the applicable requirements of the WAP and applicable portions of Title 40 *Code of Federal Regulations* (CFR) Part 261, *Identification and Listing of Hazardous Waste*.

6.0 CRITERIA FOR TRANSPORTATION REVIEW OF WSPFs

The NWP Packaging Implementation and Technical Support group will review the transportation aspects of WSPF including chemical compatibility, gas generation, isotopic inventory, and nuclear safety in accordance with WP 08-PT3400, *Criteria for Transportation Packaging Review of Waste Stream Profile Forms*.

7.0 COLLECTION, EVALUATION, CONSOLIDATION, AND TRANSMITTAL OF WSPF REVIEW COMMENTS

7.1 Collection, Evaluation, and Consolidation of WSPF Review Comments

On or after the established due date for transmittal of comments to the DOE Site, the WSPF Review Coordinator collects comments from all reviewers.

The WSPF Review Coordinator evaluates all comments for validity and clarity.

The WSPF Review Coordinator may recommend removal of any comment found to be not applicable (e.g., the comment is addressed elsewhere, is in error, or the information is not required).

The WSPF Review Coordinator may reword or reformat comments that will not provide an appropriate level of clarity to be properly addressed by the DOE Site.

The WSPF Review Coordinator may combine similar comments into one.

When a comment is reworded, reformatted, or removed, the WSPF Review Coordinator will notify the reviewer. Alternatively, if comments are identified that require removal or rework, the WSPF Review Coordinator may schedule and conduct a meeting with the review team members to discuss the comments.

If there are no comments from any of the reviewers, a DRR stating that there were no comments will be developed and transmitted to the authorized approving manager along with the WSPF.

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7.2 Transmittal of Comments

The WSPF Review Coordinator will transmit the comments to the DOE Site electronically via site.documents@wipp.ws.

7.3 Comment Resolution

A teleconference may be scheduled to discuss the comments with the DOE Site. The review team, NWP management, RES management, and CBFO personnel may be invited to participate in review meetings or teleconferences. If the review team is made aware of any programmatic schedule issues that may arise from the need to develop extensive changes to the WSPF, NWP, and RES management will be notified.

Upon receipt of comment resolutions and a revised WSPF that incorporates resolutions to the comments, the WSPF Review Coordinator will obtain concurrence from each reviewer that each comment has been adequately resolved.

In cases where a comment that is also defined as a discrepancy is not resolved to the satisfaction of the review team, a recommendation(s) may be provided to RES management to impose restrictions that are applicable to the unresolved discrepancy in the approval letter for the waste stream. Such restrictions may allow only a portion of the containers from a waste stream to be certified and shipped until such time that the discrepancy is resolved.

7.4 Acceptance of Approved WSPF

Prior to the first shipment of containers from the approved waste stream, the Permittees will provide copies of the approved WSPF to the NMED. Upon written notification of approval of the WSPF by the Permittees, the DOE Site is authorized to ship waste to WIPP. Upon receipt of the Permittees' approval letter for the waste stream, the DA enters the approval date into the WSPF Administrative Table, which causes the database to recognize the approved waste stream profile number. This allows the shipper generator WDS user to submit certification data to the WDS for waste containers from the approved waste stream and subsequently allows DA approval of certified container data prior to shipment of containers from the approved waste stream.

8.0 REVIEW OF CHANGE NOTICES AND REVISIONS TO WSPFs

When a DOE Site needs to make administrative changes to an approved WSPF, they shall submit a "Change Notice" or a revised WSPF to site.documents@wipp.ws. Changes that could affect data quality must be submitted as a new revision to the approved WSPF and shall undergo the same review as the original package.

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8.1 Examples of Administrative Changes

Examples of administrative changes include, but are not limited to, the following:

- Changes to add or change material parameter weight estimates per unit of waste and the method for determining waste material parameter weights per unit of waste.
- Changes to a waste matrix code that encompasses the code in the approved WSPF (e.g., change S5410 to S5400).
- Revisions to estimated numbers of waste containers.
- Applicable TRUCON Codes (i.e., addition of new packaging configurations to existing TRUCON Codes that have been approved and have no impact to chemical compatibility as applicable to characterization, shipment or disposal of the waste).
- Changes to the AK Summary that have no impact related to RCRA characterization of the waste, generation processes, and radionuclide information as presented in the approved WSPF.

8.2 Distribution and Review of Change Notices or Revisions to WSPFs

Upon receipt of a Change Notice or WSPF revision, the WSPF Review Coordinator or designee will provide both the approved WSPF and the change notice or revision to the designated reviewers. Change notices will be reviewed using the following steps:

- The reviewers will perform a comparison of the described changes with the approved WSPF.
- The reviewers will verify that each administrative change, as described in the change notice, does not qualify as a data quality-affecting change that requires a revision to the WSPF.
- The reviewers will verify that the DOE Site has provided a reason for each administrative change with justification as to why a new WSPF or a revision to the approved package should not be required.
- The reviewers will assess the impacts, if any, that the change(s) will have to the approved characterization information and conclude that the requested change(s) do not create a discrepancy that is directly related to information contained in the approved WSPF.

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- The reviewers will verify that the DOE Site has provided the certification statement.

WSPF revisions will be reviewed in accordance with the requirements for WSPF review in this document.

8.3 Approval of Change Notices

If the information contained in the Change Notice is complete and meets all of the applicable criteria for an administrative change, the Permittees will provide written notification to the DOE site, and the documentation will be provided to Site Environmental Compliance for inclusion in the operating record file.

If the Change Notice is determined to be data quality affecting, refer to Section 8.4.

8.4 Data Quality Affecting Changes and Revisions to WSPFs

If it is determined that the requested change(s) to a WSPF is data quality affecting in nature, the WSPF Review Coordinator will notify the DOE Site to prepare a revision to the WSPF and resubmit the entire package to the Permittees for distribution to the WSPF reviewers.

Examples of data quality-affecting changes include, but are not limited to, the following:

- Waste Matrix Code Group designation
- Significant Changes to the CIS
- Changes to the AK Summary that have impact related to RCRA characterization of the waste, changes in generation processes, and radionuclide information as presented in the approved WSPF
- Addition of EPA HWNs

9.0 RECORDS MANAGEMENT

Implementation of this process will generate the following records that are compiled in a file by the WSPF Review Coordinator:

- WSPF
- CIS (including a complete AK Summary)
- WDS Waste Container Data Reports, if applicable

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- A consolidated list of review comments and comment resolutions
- Waste Stream Characterization Package (when requested) and any additional documentation requested for completion of the WSPF review
- Letter to the DOE Site indicating approval of the WSPF
- Transmittal letter to the NMED

When the file is complete, it will be forwarded to Site Environmental Compliance and an electronic version will be provided to WIPP Records Archive to be maintained in the WIPP facility operating record, and be available for inspection by the NMED. These records from submittals of WSPFs and from performance of WSPF reviews will be retained in accordance with the Regulatory Environmental Services Records Inventory and Disposition Schedule.

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REFERENCES	
DOCUMENT NUMBER AND TITLE	KEY STEP
Title 40 <i>Code of Federal Regulations</i> Part 261, <i>Identification and Listing of Hazardous Waste</i> , applicable sections	
Hazardous Waste Facility Permit, EPA Identification No. NM4890139088, Attachment C, Waste Analysis Plan, applicable sections	
DOE/WIPP-02-3122, <i>Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant</i>	1
WP 08-NT1001, <i>Waste Data System Waste Stream Profile Review</i>	
WP 08-NT1005, <i>RCRA Review Criteria for Waste Stream Profile Forms</i>	
WP 08-PT3400, <i>Criteria for Transportation Packaging Review of Waste Stream Profile Forms</i>	
WP 15-PS3002, <i>Controlled Document Processing</i>	

ATTACHMENT 48
WP 08-NT.1005 RCRA REVIEW CRITERIA FOR WASTE STREAM
PROFILE FORMS

10 PAGES

WP 08-NT1005

Revision 0

RCRA Review Criteria for Waste Stream Profile Forms

Management Control Procedure

EFFECTIVE DATE: 09/28/15

Rick Chavez
APPROVED FOR USE

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CHANGE HISTORY SUMMARY

REVISION NUMBER	DATE ISSUED	DESCRIPTION OF CHANGES
0	09/28/15	<ul style="list-style-type: none">• This is a new procedure.

INTRODUCTION

This procedure provides instructions for review criteria of Waste Stream Profile Forms (WSPFs) by Regulatory Environmental Services (RES) Resource Conservation and Recovery Act (RCRA) reviewers. Each WSPF is reviewed to verify that the Permit required information provided is complete and accurate, and that the waste stream complies with the applicable hazardous waste requirements described in the Hazardous Waste Facility Permit (HWFP) Waste Analysis Plan (WAP) and the WIPP Waste Acceptance Criteria (WAC) (DOE/WIPP 02-3122, *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant*), prior to approval. The RES RCRA reviewers will review applicable information pertaining to chemical compatibility, and remediation or treatment (e.g. waste neutralization, deactivation, and solidification/immobilization).

Performance of this procedure generates the following record(s), as applicable. Any records generated are handled in accordance with departmental Records Inventory and Disposition Schedules.

- Attachment 1, *WSPF RCRA Review Checklist*

REFERENCES			
DOCUMENT NUMBER AND TITLE	BASELINE DOCUMENT	REFERENCED DOCUMENT	KEY STEP
40 CFR Part 261, Identification and Listing of Hazardous Waste	✓		
Hazardous Waste Facility Permit, EPA Identification Number NM4890139088-TSDF	✓		
DOE-HDBK-1081-94, <i>Primer on Spontaneous Heating and Pyrophoricity</i>		✓	
DOE/WIPP-02-3122, <i>Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant</i>	✓		
DOE/WIPP 07-3372, <i>Waste Isolation Pilot Plant Documented Safety Analysis</i>	✓		
EPA-600/2-80-076, <i>A Method for Determining the Compatibility of Hazardous Wastes</i>		✓	
WP 08-NT.03, <i>Waste Stream Profile Form Review and Approval Program</i>		✓	
WP 08-NT1001, <i>Waste Data System Waste Stream Profile Review</i>	✓		
WP 08-PT3400, <i>Criteria for Transportation Packaging Review of Waste Stream Profile Forms</i>	✓		

PERFORMANCE**1.0 REVIEW OF THE WSPF REQUEST**

- 1.1 Upon receipt of the request from the WSPF Review Coordinator, the RCRA reviewer shall, at a minimum, perform the evaluations listed:
 - 1.1.1 Verify that the applicable requirements of the Treatment, Storage and Disposal Facility WAC have been met, the ten WIPP-tracked radionuclides are discussed or listed, and the two most prevalent TRU radionuclides (Contact-Handled waste only) are identified.
 - 1.1.2 Verify that the generator site is authorized to ship PCB-containing wastes to the WIPP, if the waste stream includes polychlorinated biphenyls (PCBs).
 - 1.1.3 Verify that the WSPF, CIS, and other requested information are complete and accurate, (Information required by the HWFP is specified in Attachment C3, Sections C3-6b[1] and C3-6b[2], and Section C3-6b[3]) and other required/requested information has been provided by the DOE Site.
 - 1.1.4 Examine the assignment of the waste stream description, Waste Matrix Code Group, and Summary Category Group, the results of waste analyses (as applicable), the acceptable knowledge summary documentation, the methods used for characterization, the CBFO certification, and appropriate designation of U.S. Environmental Protection Agency (EPA) HWNs.
 - 1.1.5 Review the WSPF to verify that the waste has been classified correctly with respect to assignment of HWNs.
 - 1.1.6 Verify that the AK Summary is complete and that the summary category group and the waste matrix code group on the WSPF are supported by the waste stream name and the AK Summary description.
 - 1.1.7 Verify that the EPA HWNs listed on the WSPF are consistent with the HWNs discussed in the AK Summary.

- 1.1.8 Verify that the chemical compatibility of the waste stream has been evaluated and documented (see the following reference documents as needed: Hatayama et al., *A Method for Determining the Compatibility of Hazardous Wastes*, EPA-600/2-80-076 and DOE-HDBK-1081-94, *Primer on Spontaneous Heating and Pyrophoricity*). Also ensure that any other applicable required treatment or remediation methods have been assessed for the waste stream.
- 1.1.9 Verify that the AK Summary provides adequate justification for assignment of EPA HWNs and that the justifications are supported with technically correct AK information.
- 1.1.10 Verify that the EPA HWNs listed on the WSPF are as identified/permitted in the HWFP Attachment C, Table C-5.
- 1.1.11 Verify that an indication has been provided in the CIS that no liquid is present in the waste, if any waste stream is assigned the EPA HWN U134 (hydrofluoric acid).
- 1.1.12 Verify, when applicable, that the VE/Real-Time Radiography Summary (Exclusion of Prohibited Items) documents the absence of prohibited items.
- 1.1.13 Verify, when applicable, that the initial site certification letter for the summary category group has been issued by the CBFO and that recertification dates are valid.
- 1.1.14 Review the most current CBFO certification letter to verify that processes listed under Certification Program Status cover the waste stream and the procedures that are either described or listed in the WSPF.
- 1.1.15 Verify that the cover sheet of the Waste Container Data report printout is signed and dated.
- 1.1.16 Verify that the AK Summary adequately indicates that the waste has been checked for the characteristics of ignitability, corrosivity, and reactivity, and that justifications for not applying D001, D002, and D003 EPA HWNs are included. Verify that the justifications are defensible and technically correct.

NOTE

These wastes (D001, D002, D003) are prohibited pursuant to the Permit Part 2, Section 2.3.3., Treatment, Storage, and Disposal Facility Waste Acceptance Criteria (**TSDf-WAC**); and require remediation or treatment (e.g. waste neutralization, deactivation, and solidification/immobilization) in order to meet the TSDf WAC. Examples of this waste include, but are not limited to the following: nitrate salt bearing waste, sodium bearing waste, or roaster oxides. WSPFs and accompanying CIS identified with this type of waste require additional reviews.

[A] **IF** the WSPF or CIS indicates the presence of potentially ignitable, reactive or corrosive waste,
THEN verify the following:

- Has the waste stream been identified previously as a potentially ignitable, reactive or corrosive waste (check with CBFO/NTP and/or SPM/AKE)?
- Have the remediation or treatment procedures/processes been assessed? If not clearly documented on the WSPF or CIS then contact the SPM and/or AK Expert to obtain relevant documentation.
- Was the absorbent or material/chemical used in remediation or treatment assessed for compatibility with the waste and determined to be appropriate for use with the waste?
- Was the material/chemical used to neutralize liquids assessed for compatibility with the waste and determined to be appropriate for use with the waste?

1.2 RCRA reviewer completes, signs, and dates Attachment 1, *WSPF RCRA Review Checklist*.

1.3 **IF** the answer is no to any item identified in section 1.1.16,
THEN the WSPF cannot be recommended for approval. The RCRA reviewer shall annotate that the profile and/or CIS is incomplete on attachment 1 and provide this information to the WSPF Review Coordinator.

2.0 RESPONSIBILITIES

2.1 WSPF Review Coordinator

- 2.1.1 Provide WSPF, related information and corresponding DRR to RCRA reviewers.
- 2.1.2 Facilitate clarification and/or revised requests between requestor and RCRA reviewers.
- 2.1.3 Obtain DRRs and attachment 1 from RCRA reviewers. Review DRRs and attachment 1 for completeness and compile information as required by WP 08-NT.03, *Waste Stream Profile Form Review and Approval Program*.

2.2 RCRA Reviewer

- 2.2.1 Review the request for completeness and evaluate the request for compliance with applicable hazardous waste requirements described in the Hazardous Waste Facility Permit (HWFP) Waste Analysis Plan (WAP) and the WIPP Waste Acceptance Criteria (WAC) (DOE/WIPP 02-3122, *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant*).
- 2.2.2 Complete attachment 1.
- 2.2.3 Provide attachment 1 and comments to WSPF Review Coordinator.
- 2.2.4 Interface with WSPF Review Coordinator for comment resolution, additional clarification, and/or revised WSPF, as necessary.

Attachment 1 – WSPF RCRA Review Checklist

		Complete			Accurate		
Waste Stream Profile Form - Verification of Completeness and Accuracy		Yes	No	N/A	Yes	No	Comments
C3-6b(1) Does the Waste Stream Profile Form (WSPF, Figure C-1) include the following information and has the information been reviewed for accuracy:	• Generator/storage site name						
	• Generator/storage site EPA ID						
	• Date of audit report approval by NMED (if obtained)						
	• Original generator of waste stream						
	• Whether waste is Contact-Handled or Remote-Handled						
	• The Waste Stream WIPP Identification Number						
	• Summary Category Group						
	• Waste Matrix Code Group						
	• Waste Material Parameter Weight Estimates per unit of waste						
	• Waste stream name						
	• A description of the waste stream						
	• Applicable EPA hazardous waste numbers						
	• Applicable TRUCON codes						
	• A listing of acceptable knowledge documentation used to identify the waste stream						
	• The waste characterization procedures used and the reference and date of the procedure						
• Certification signature of Site Project Manager, name, title, and date signed							
Characterization Information Summary - Verification of Completeness and Accuracy		Yes	No	N/A	Yes	No	Comments
C3-6b(2) Does the Characterization Information Summary include the following elements, if applicable and has the information been reviewed for accuracy:	• Data reconciliation with DQOs						
	• Radiography and VE summary to document that all prohibited items are absent in the waste and to verify that the physical form of the waste matches the waste stream description as determined by AK (if applicable).						
	• A justification for the selection of radiography and/or VE as an appropriate method for characterizing the waste.						
	• A complete listing of all container identification numbers used to generate the WSPF, cross-referenced to each Batch Data Report						
	• Complete AK summary, including						
	- stream name and number						
	- point of generation						
	- waste stream volume (current and projected)						
	- generation dates						
	- TRUCON codes						
	- Summary Category Group						
	- Waste Matrix Code(s)						
	- Waste Matrix Code Group						
	- Other TWBIR information						

Attachment 1 – WSPF RCRA Review Checklist

	- waste stream description						
	- areas of operation						
	- generating processes						
	- RCRA determinations						
	- radionuclide information						
	- all references used to generate the AK summary						
	- and any other information required by Permit Attachment C4, Section C4-2b						
	• Method for determining Waste Material Parameter Weights per unit of waste.						
	• List of any AK Sufficiency Determinations requested for the waste stream.						
	• Certification through acceptable knowledge or testing that any waste assigned the hazardous waste number of U134 (hydrofluoric acid) no longer exhibits the characteristic of corrosivity. This is verified by ensuring that no liquid is present in U134 waste.						
		Complete			Accurate		
C-5a(2) Verify the appropriate designation of EPA hazardous waste number(s).	Review the justification in the CIS to verify the characteristic of ignitability (D001), corrosivity (D002), and reactivity (D003)	Yes	No	N/A	Yes	No	Comments
	• Has the waste been identified as a potentially ignitable, reactive or corrosive waste?						
	• Has the remediation process/procedure or treatment been assessed?						
	• Was the absorbent or material/chemicals used in remediation or treatment assessed and determined to be compatible with the waste and determined to be appropriate for use with the waste?						
	• Was the material/chemical used to neutralize corrosive liquids assessed and determined to be compatible with the waste and is appropriate for use with the waste?						
	Review the justification in the CIS to verify the assignment of Toxicity Characteristic Hazardous Waste Numbers						
	Review the justification in the CIS to verify the assignment of listed hazardous waste numbers						
	Review the justification in the CIS/AK Summary to verify that the waste is compatible.						
C-5a(2) Are EPA hazardous waste numbers associated with waste stream acceptable for management, storage, or disposal at WIPP?	Review the EPA hazardous waste numbers on the WSPF to ensure that they are included on Attachment C, Table C-5 of the Permit.						

Prepared By:

Signature:

Date: