Department of Energy
Carlsbad Field Office
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Carlsbad, New Mexico 88221

January 12, 2023

Mr. Rick Shean, 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, Waste Isolation Pilot Plant Hazardous Waste Facility Permit Number: NM4890139088-TSDF

Dear Mr. Shean:

Enclosed is a Class 1 Permit Modification Notifications for the following items:

- Revise Permit Part 4, Table 4.1.1, Underground Hazardous Waste Disposal Units
- Update to Permit Attachment E, Section E-1, Inspection Schedule

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. Michael Gerle at (575) 988-5372.

Sincerely,

Signatures on File

Reinhard Knerr
Manager
Carlsbad Field Office

Sean Dunagan
President and Project Manager
Nuclear Waste Partnership LLC

Enclosure

cc: w/enclosure
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CBFO:ERCD:MG:JV:22-0277

Class 1 Permit Modification Notifications

1. **Revise Permit Part 4, Table 4.1.1, *Underground HWDUs***
2. **Update to Permit Attachment E, Section E-1, *Inspection Schedule***

Waste Isolation Pilot Plant
Carlsbad, New Mexico

WIPP Permit Number - NM4890139088-TSDF

January 2023

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Acronyms and Abbreviations

CFR	Code of Federal Regulations
CH	contact-handled
CHAMPS	Maintenance Management tracking program
DOE	U.S. Department of Energy
LWA	Land Withdrawal Act
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
Permit	Waste Isolation Pilot Plant Hazardous Waste Facility Permit
Permittees	U.S. Department of Energy and Nuclear Waste Partnership LLC
PMN	Permit Modification Notification
RH	remote-handled
TRU	transuranic
WIPP	Waste Isolation Pilot Plant

Overview of the Permit Modification Notifications

This document contains two 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. All 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	Permit Part 4, Table 4.1.1, *Underground HWDUs*	This modification revises the Permit with the following changes: • Permit Part 4, Table 4.1.1, *Underground HWDUs* o Added "372,020.59 ft^3 (10,534.45 m^3)" to the Final Transuranic (**TRU**) Mixed Waste Volume column for Panel 7 contact-handled (**CH**) TRU waste. o Added "914.30 ft^3 (25.89 m^3)" to the Final TRU Mixed Waste Volume column for Panel 7 remote-handled (**RH**) TRU waste. o Added "254,609.57 ft^3 (7,209.74 m^3)" to the Final Land Withdrawal Act (**LWA**) TRU Waste Volume column for Panel 7 CH TRU waste. o Added "393.05 ft^3 (11.13 m^3)" to the Final LWA TRU Waste Volume column for Panel 7 RH TRU waste.	A.1
2	Permit Attachment E, Section E-1, *Inspection Schedule*	This change updates language in Permit Attachment E, Section E-1, *Inspection Schedule,* pertaining to usage of logbooks and recording inspection results. Permit Attachment E, Section E-1, *Inspection Schedule,* was modified as specified below: • Fourth paragraph: o Modified the first sentence to add "inspections" after "Waste handling equipment", replaced "typically controlled through" with "conducted in accordance with", and removed "and the results are recorded in logbooks or on data sheets". o Modified the second sentence to replace "consult the logbook to identify the" with "determine the operational", and removed "any piece of". o Modified the third sentence to add "the status of" after "Once" and replaced "identified" with "determined". o Modified the last sentence to replace "entered in the applicable logbook or data sheet" with "recorded in an inspection log or summary (e.g., equipment logbooks, inspection forms, procedure attachments) in accordance with 20.4.1.500 NMAC (incorporating 40 CFR §264.15(d))". • Sixth paragraph: o Modified the fourth sentence to add ", inspection forms, procedure	A.1

Item No.	Affected Permit Section	Change Description	Category
		attachments" to the parenthetical after "WIPP facility files". • Last paragraph: o Modified the fourth sentence to replace "proceduralized inspections" with "established procedures". o Removed the seventh and eighth sentences and revised the ninth and tenth sentences to read "Equipment inspectors identify the operational status of waste handling equipment prior to beginning an inspection. Waste handling equipment inspection results are maintained in the operating record." o Revised the eleventh sentence to read "Contact-handled transuranic (**TRU**) mixed waste equipment and areas that are subject to inspections are listed in Table E-1. This equipment includes the waste handling forklifts, …". o Revised the twelfth sentence to read "Remote-handled TRU mixed waste equipment and areas that are subject to inspections are listed in Table E-1a. This equipment includes the 140/25-ton RH Bay overhead bridge crane, …". o Modified the thirteenth sentence to replace "on data sheets" with "in an inspection log or summary (e.g., equipment logbook, inspection forms, procedure attachments)".	

Item 1

Description

This modification revises the Permit with the following changes:

- Permit Part 4, Table 4.1.1, *Underground HWDUs*
    - Added "372,020.59 ft^3 (10,534.45 m^3)" to the Final Transuranic (**TRU**) Mixed Waste Volume column for Panel 7 contact-handled (**CH**) TRU waste.
    - Added "914.30 ft^3 (25.89 m^3)" to the Final TRU Mixed Waste Volume column for Panel 7 remote-handled (**RH**) TRU waste.
    - Added "254,609.57 ft^3 (7,209.74 m^3)" to the Final Land Withdrawal Act (**LWA**) TRU Waste Volume column for Panel 7 CH TRU waste.
    - Added "393.05 ft^3 (11.13 m^3)" to the Final LWA TRU Waste Volume column for Panel 7 RH TRU waste.

Basis

This 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

Permit Part 4, Table 4.1.1, requires the final waste volume to be listed for filled panels. Waste emplacement in Panel 7 was completed on October 20, 2022; therefore, its volume must be added to the Permit. This document also serves as the written notification required by Permit Part 6, Section 6.10.1, *Panel Closure*.

Revised Permit Text:

Table 4.1.1 - Underground HWDUs				
Description[1]	**Waste Type**	**Maximum TRU Mixed Waste Capacity[2]**	**Final TRU Mixed Waste Volume[3]**	**Final LWA TRU Waste Volume[4]**
Panel 1	CH TRU	636,000ft^3 (18,000 m^3)	370,685.70 ft^3 (10,496.65 m^3)	267,096.48 ft^3 (7,563.33 m^3)
Panel 2	CH TRU	636,000 ft^3 (18,000 m^3)	635,581.72 ft^3 (17,997.67 m^3)	462,712.19 ft^3 (13,102.55 m^3)
Panel 3	CH TRU	662,150 ft^3 (18,750 m^3)	603,600.40 ft^3 (17,092.06 m^3)	348,299.73 ft^3 (9,862.75 m^3)
Panel 4	CH TRU	662,150 ft^3 (18,750 m^3)	503,500.27 ft^3 (14,257.54 m^3)	367,973.88 ft^3 (10,419.86 m^3)
	RH TRU	12,570 ft^3 (356 m^3)	6,223.15 ft^3 (176.22 m^3)	2,974.91 ft^3 (84.24 m^3)
Panel 5	CH TRU	662,150 ft^3 (18,750 m^3)	562,454.22 ft^3 (15,926.93m^3)	427,749.61 ft^3 (12,112.52 m^3)
	RH TRU	15,720 ft^3 (445 m^3)	8,297.53 ft^3 (234.96 m^3)	5,416.21 ft^3 (153.37 m^3)
Panel 6	CH TRU	662,150 ft^3 (18,750 m^3)	510,911.06 ft^3 (14,467.39 m^3)	403,569.65 ft^3 (11,427.82 m^3)
	RH TRU	18,860 ft^3 (534 m^3)	7,578.53 ft^3 (214.60 m^3)	3,990.20 ft^3 (112.99 m^3)
Panel 7	CH TRU	662,150 ft^3 (18,750 m^3)	372,020.59 ft^3 (10,534.45 m^3)	254,609.57 ft^3 (7,209.74 m^3)
	RH TRU	22,950 ft^3 (650 m^3)	914.30 ft^3 (25.89 m^3)	393.05 ft^3 (11.13 m^3)
Panel 8	CH TRU	662,150 ft^3 (18,750 m^3)		
	RH TRU	22,950 ft^3 (650 m^3)		
Total	**CH TRU**	**5,244,900 ft^3 (148,500 m^3)**		
	RH TRU	**93,050 ft^3 (2,635 m^3)**		

[1] The area of each panel is approximately 124,150 ft2 (11,533 m2).

[2] "Maximum TRU Mixed Waste Capacity" is the maximum TRU mixed waste volume that may be emplaced in each panel. This volume is calculated based on the gross internal volume of the outermost disposal containers.

[3] Final TRU Mixed Waste Volume is calculated based on the gross internal volume of the outermost disposal containers. The volume listed here is reported pursuant to Permit Part 6, Section 6.10.1.

[4] Final LWA TRU Waste Volume is calculated based on the volume of TRU waste inside a disposal container. The volume listed here is tracked and reported by the DOE internally pursuant to the WIPP Land Withdrawal Act total capacity limit of 6.2 million

ft^3 (175,564 m^3) of TRU waste (Pub. L. 102-579, as amended) and is included here for informational purposes. A link to the LWA TRU Waste Volume is posted on www.wipp.energy.gov.

Note: The final TRU mixed waste and final LWA TRU waste volumes in Table 4.1.1 are reported to the nearest hundredth ft^3 and m^3.

Item 2

Description

This change updates language in Permit Attachment E, Section E-1, *Inspection Schedule,* pertaining to usage of logbooks and recording inspection results.

Permit Attachment E, Section E-1, *Inspection Schedule,* was modified as specified below:

- Fourth paragraph:
    - Modified the first sentence to add “inspections” after “Waste handling equipment”, replaced “typically controlled through” with “conducted in accordance with”, and removed “and the results are recorded in logbooks or on data sheets”.
    - Modified the second sentence to replace “consult the logbook to identify the” with “determine the operational”, and removed “any piece of”.
    - Modified the third sentence to add “the status of” after “Once” and replaced “identified” with “determined”.
    - Modified the last sentence to replace “entered in the applicable logbook or data sheet” with “recorded in an inspection log or summary (e.g., equipment logbooks, inspection forms, procedure attachments) in accordance with 20.4.1.500 NMAC (incorporating 40 CFR §264.15(d))”.
- Sixth paragraph:
    - Modified the fourth sentence to add “, inspection forms, procedure attachments” to the parenthetical after “WIPP facility files”.
- Last paragraph:
    - Modified the fourth sentence to replace “proceduralized inspections” with “established procedures”.
    - Removed the seventh and eighth sentences and revised the ninth and tenth sentences to read “Equipment inspectors identify the operational status of waste handling equipment prior to beginning an inspection. Waste handling equipment inspection results are maintained in the operating record.”
    - Revised the eleventh sentence to read “Contact-handled transuranic (**TRU**) mixed waste equipment and areas that are subject to inspections are listed in Table E-1. This equipment includes the waste handling forklifts, …”.
    - Revised the twelfth sentence to read “Remote-handled TRU mixed waste equipment and areas that are subject to inspections are listed in Table E-1a. This equipment includes the 140/25-ton RH Bay overhead bridge crane, …”.
    - Modified the thirteenth sentence to replace “on data sheets” with “in an inspection log or summary (e.g., equipment logbook, inspection forms, procedure attachments)”.

Basis

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

Discussion

These changes to Permit Attachment E, Section E-1, *Inspection Schedule,* update language pertaining to usage of logbooks and recording inspection results for waste handling equipment at the WIPP facility.

Changes to the fourth paragraph of Permit Attachment E, Section E-1, *Inspection Schedule,* update the Permit language that describes the process for performing inspections at the facility and to remove obsolete text regarding how equipment and inspections are controlled. Text is revised at the end of the paragraph to provide updated examples of how inspection results are recorded and to reference the NMAC requirement for recording inspections. The change to the sixth paragraph also incorporates the examples of inspection records to be documented in the WIPP Facility Files, this change is also included in the Ten Year Renewal Application. Similar changes are made to the last paragraph in this section to update the description of the inspection process for waste handling equipment at the facility and removes obsolete language pertaining to logbooks. Some changes that are made to the last paragraph are included in the Ten Year Renewal Application.

Engineering controls such as lockout/tagout control the operational status of equipment and not logbooks. Other administrative controls include reviewing shift turnover information and when applicable the Maintenance Management tracking program (**CHAMPS**) system database. Therefore, obsolete language regarding logbooks as controls for equipment operability and operator use was removed. The facility uses either inspection forms or procedure attachments to document inspections for a majority of the equipment and areas identified in Table E-1. Waste Operations phased out the use of logbooks and is now using inspection forms and procedure attachments for TRU mixed waste handling and processing equipment inspections. These inspection checklists are maintained in the facility operating record, pursuant to 40 CFR §264.73(b)(5). The advantage of inspection forms and procedure attachments as an inspection record ensures inspectors are consistently inspecting equipment against the necessary and required criteria.

The inspection frequency, criteria, and required content have not changed. These changes simply update the Permit text to accurately reflect the inspection process performed at the facility.

These changes are therefore needed to keep the Permit current and to ensure accuracy. These changes do not reduce the ability for the Permittees to provide continued protection of human health or the environment.

Proposed Revised Permit Text:

E-1 Inspection Schedule

Waste handling equipment inspections and area inspections are ~~typically controlled through~~conducted in accordance with established procedures~~, and the results are recorded in logbooks or on data sheets~~. Operators are trained to ~~consult the logbook to identify the~~determine the operational status of ~~any piece of~~ waste handling equipment prior to its use. Once the status of a piece of equipment is ~~identified~~ determined to be operable, a preoperational inspection is initiated in accordance with the appropriate inspection procedure in Tables E-1, E-1a, or in operational procedures. Inspection results as described below are ~~entered in the applicable logbook or data sheet~~ recorded in an inspection log or summary (e.g., equipment logbooks, inspection forms, procedure attachments) in accordance with 20.4.1.500 NMAC (incorporating 40 CFR §264.15(d)).

Items that are operational with restrictions are operated in accordance with applicable compensatory measures. Items that are not operational are scheduled for repair or replacement in accordance with work authorization procedures. In such cases, compensatory measures may be needed until the equipment is returned to service. These compensatory measures will provide an equivalent level of protection, be documented in WIPP facility files (e.g., equipment logbook, inspection forms, procedure attachments), and include an appropriate inspection schedule, when applicable.

Requirements of 20.4.1.500 NMAC (incorporating 40 CFR §264.15(d)), are met by the inspections for each item or system included in Tables E-1 and E-1a. Beginning with the effective date of this Permit, the results of the inspections are maintained in the operating record for three years and are then transferred to the WIPP Records Archive where they are maintained until closure. The inspection logs or summary records include the date and time of inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions. Major pieces of waste handling equipment are inspected using ~~proceduralized inspections~~established procedures. Current copies of inspection forms are maintained in the Operating Record. Non-administrative changes (i.e., changes that affect the frequency or content of inspections) to inspection forms must be submitted to the NMED in accordance with the appropriate portions of 20 NMAC 4.1.900 (incorporating 40 CFR §270.42). ~~The status of these pieces of equipment is maintained in an equipment logbook that is separate from the checklist. The logbook contains information regarding the condition of the equipment.~~ Equipment ~~operators~~ inspectors identify the operational status of waste handling equipment prior to beginning an inspection~~are required, by the inspection checklist, to consult the logbook as the first activity in the inspection procedure~~. ~~This logbook is~~ Waste handling equipment inspection results are maintained in the operating record. ~~CH~~Contact-handled transuranic (**TRU**) mixed waste equipment and areas that ~~is controlled by a logbook~~are subject to inspections are listed in Table E-1. This equipment includes the waste handling forklifts, all waste handling cranes, the adjustable center of gravity lift fixture, the CH TRU underground transporter, the facility transfer vehicle, the trailer jockey, and the push-pull attachment. ~~RH~~Remote-handled TRU mixed waste equipment and areas that are subject to inspections are listed in Table E-1a. ~~that is controlled by a logbook~~ This equipment includes the 140/25-ton RH Bay overhead bridge crane, cask transfer cars, 25-ton cask unloading room crane, transfer cell shuttle car, RH Bay cask lifting yoke, facility grapple, 6.2- ton overhead hoist, facility cask rotating device, hot cell overhead powered manipulator, 15-ton hot cell crane, facility cask

transfer car, 41-ton forklift, facility cask, and emplacement equipment. Inspections of the Cask Unloading Room, Hot Cell, Transfer Cell, Facility Cask Loading Room, RH Bay and radiation monitoring equipment will be recorded ~~on data sheets~~in an inspection log or summary (e.g., equipment logbook, inspection forms, procedure attachments). In addition to the inspections listed in Tables E-1 and E-1a, many pieces of equipment are subject to regular preventive maintenance. This includes more in-depth inspections of mechanical systems, load testing of lifting systems, calibration of measurement equipment and other actions as recommended by the equipment manufacturer or as required by DOE Orders. These preventive maintenance activities along with the inspections in Tables E-1 and E-1a make mechanical failure of waste handling equipment unlikely. The WIPP Safety Analysis Report (DOE, 1999) and the WIPP Remote-Handled Waste Preliminary Safety Analysis Report (RH PSAR) (DOE, 2000) contain the results of a systematic analysis of waste handling equipment and the hazards associated with potential mechanical failures. Equipment subject to failures that cannot practically be mitigated is retained for analysis and is the basis for contingency planning. The inspection procedures maintained in the Operating Record for operational and preventive maintenance are implemented to assure the equipment is maintained. An example equipment inspection checklist and a typical logbook form are shown as Figures E-1 and E-2. Actual checklists or forms are maintained within the Operating Record.