U.S. DEPARTMENT OF ENERGY
CARLSBAD FIELD OFFICE

FINAL CERTIFICATION AUDIT REPORT

OF THE

SAVANNAH RIVER SITE
CENTRAL CHARACTERIZATION PROGRAM
AREA E

FOR

TRANSURANIC WASTE ACTIVITIES

CARLSBAD, NEW MEXICO

AUDIT NUMBER A-21-08

December 8 – 10, 2020

Prepared by: Shelly Gomez Digitally signed by Shelly Gomez Date: 2021.02.23 11:48:48 -07'00' **Date:** _____

For Priscilla Yanez, CTAC
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Approved by: Michael Brown for Digitally signed by Michael Brown Date: 2021.02.23 13:23:09 -07'00' **Date:** _____

Darren Jolley, Director
CBFO Office of Quality Assurance

1.0 EXECUTIVE SUMMARY

U.S. Department of Energy (DOE) Carlsbad Field Office (CBFO) Certification Audit A-21-08 was performed to evaluate the adequacy, implementation, and effectiveness of the established programs for transuranic (TRU) waste characterization activities performed at the Savannah River Site (SRS) by the Nuclear Waste Partnership LLC (NWP) Central Characterization Program (CCP) in Area E. The audit team evaluated the programs, procedures, and processes for characterizing contact-handled (CH) Summary Category Group (SCG) S5000 debris waste. The audit was conducted relative to the requirements of the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (HWFP), the *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant* (WAC), the *CBFO Quality Assurance Program Document* (QAPD), and the *Waste Isolation Pilot Plant Documented Safety Analysis* (DSA), Chapter 18.

Due to travel restrictions and to decrease the potential development, spread, and impact of the acute respiratory illness, COVID-19, the audit team did not travel to the SRS. However, a CBFO Technical Assistance Contractor (CTAC) auditor residing in the SRS area was utilized to conduct Quality Assurance (QA) related evaluations at the SRS, Area E. Most audit activities were conducted via teleconference and live-streaming, on December 8 – 10, 2020.

In response to the New Mexico Environment Department (NMED) letter, dated April 24, 2020, from Kevin Pierard, Chief, Hazardous Waste Bureau, to Greg Sosson, Acting Manager, CBFO, and Sean Dunagan, Project Manager, NWP, this report documents in detail the actions taken by auditors and technical specialists to verify compliance to Waste Analysis Plan (WAP) requirements. Field activities were evaluated at the SRS Area E facility via live-streaming. Therefore, verification of compliance was demonstrated. Verification was also performed through review of Batch Data Reports (BDRs), logbooks, and interviews conducted with appropriate operations and project management personnel.

The HWFP issued to the WIPP by the NMED requires that the DOE conduct audits of each generator/storage site prior to certifying that the site meets the waste characterization requirements for shipment of waste to the WIPP. In accordance with Attachment C6 of the HWFP, audits must be performed at least annually after the initial audit to determine continued compliance with the HWFP WAP.

The audit team concluded that the SRS TRU waste characterization program procedures for characterizing CH SCG S5000 debris waste, adequately address upper-tier requirements. The processes for characterizing CH SCG S5000 debris waste were satisfactorily implemented and effective in achieving the desired results. Due to the scope of this audit and inactivity at the SRS since Audit A-21-02, the audit team's focus was the certification of the TRU waste characterization program in Area E.

Since an SRS recertification audit (A-21-02) was conducted recently that addressed this SCG, the focus of the AK audit activity for this audit was the traceability exercise involving recently characterized waste. The AK auditors conducted a full evaluation of the AK process for characterizing CH SCG S5000 debris waste.

No WIPP HWFP WAP-affecting conditions adverse to quality (CAQs) or WAP-affecting Observations were identified during the audit. One non-WAP-affecting CAQ was identified during the audit. It was identified as a corrective action report (CAR) (see section 6.1.2). One non-WAP-affecting Observation was identified during the audit (see section 6.3.2), and no concerns were offered to management as a Recommendation.

2.0 SCOPE AND PURPOSE

2.1 Scope

The scope of the audit included evaluations for the adequacy, implementation, and effectiveness of the technical and quality assurance activities performed by the NWP CCP for characterization of CH SCG S5000 debris waste in Area E. Due to travel restrictions and to decrease the potential development, spread, and impact of the acute respiratory illness, COVID-19, the audit team did not travel to the SRS. However, a CTAC auditor residing in the SRS area was utilized to conduct QA related evaluations at the SRS, Area E. Most audit activities were conducted via teleconference and live-streaming, on December 8 – 10, 2020. The following areas were evaluated remotely:

General Activities

- Results of Previous Audits
- Changes in Programs or Operations
- New Programs or Activities Being Implemented
- Changes in Key Personnel
- Generator Site Technical Review (GSTR) (non-WAP-related)

WAP-Related Quality Assurance Activities

- Control of Nonconforming Items
- Personnel Qualification and Training
- Records

Non-WAP-Related Quality Assurance Activities

- SRS-CCP Program Interface

WAP-Related Technical Activities

- Acceptable Knowledge (AK)
- WIPP Waste Information System/Waste Data System (WWIS/WDS)

The evaluation of adequacy of SRS-CCP documents was based on current revisions of the following documents:

- Waste Isolation Pilot Plant Hazardous Waste Facility Permit NM4890139088-TSDF
- DOE/CBFO-94-1012, *Quality Assurance Program Document* (QAPD)
- WP 13-1, *Nuclear Waste Partnership LLC Quality Assurance Program Description*
- DOE/WIPP-02-3122, *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant* (WAC)
- DOE/WIPP-07-3372, *Waste Isolation Pilot Plant Documented Safety Analysis* (DSA), Chapter 18

Programmatic and technical checklists were developed from the current versions of the following documents:

- CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan* (QAPjP)
- CCP-PO-002, *CCP Transuranic Waste Certification Plan*
- CCP-PO-004, *CCP/SRS Interface Document*
- Related CCP QA and technical implementing procedures

2.2 Purpose

Audit A-21-08 was conducted to evaluate the adequacy and effective implementation of program requirements for the certification of CH SCG S5000 debris waste, at the SRS Area E, for compliance with applicable upper-tier requirements.

3.0 AUDIT TEAM, MANAGEMENT REPRESENTATIVE, TECHNICAL SPECIALISTS, AND OBSERVERS

Micheal Stapleton	CBFO QA Management Representative
Priscilla Yanez	Audit Team Leader, CTAC
Tim Boswell	Auditor, CTAC (Program Status)
Nathan Denney	Auditor, CTAC (AK)
Katie Gentry	Auditor, CTAC (C6 QA, WWIS/WDS)
Paul Gilbert	Auditor-in-Training, CTAC (C6 QA, WWIS/WDS)
Bob Prentiss	Auditor, CTAC (Training/Records)
Stephen Shafer	Auditor, CTAC (NDA QA)

Richard Blauvelt	Technical Specialist, CTAC (AK)
Randy Fitzgerald	Technical Specialist, CTAC (AK)
Paul Gomez	Technical Specialist, CTAC (PL/FGA/CM)
Dustin Stegman	Technical Specialist-in-Training (PL)
Shelly Gomez	Technical Specialist (RTR)
Jim Oliver	Technical Specialist (NDA)

OBSERVERS

Tom Carver	CBFO Office of National TRU Program (ONTP)
Joe Lopez	CBFO Office of Quality Assurance (OQA)
Ricardo Maestas	NMED
David Biswell	NMED
Megan McLean	NMED
Jana Dawson	Trinity Engineering on behalf of NMED

4.0 AUDIT MEETING ATTENDEES AND PERSONNEL CONTACTED

The audit meeting attendees and personnel contacted during the audit are identified in Attachment 1. A pre-audit meeting was held on December 8, 2020, via teleconference. Daily management briefings were held to update SRS-CCP management and staff on audit progress and identified concerns. The audit was concluded with a post-audit meeting held on December 10, 2020, via teleconference.

Attachment 2 lists the SRS-CCP personnel contacted during the audit by subject area. Attachment 3 contains a summary table of audit results. Attachment 4 identifies the WAP-related objective evidence compiled (provided in boxes). Attachment 5 lists the audited procedures. Attachment 6 lists the processes and equipment evaluated.

5.0 SUMMARY OF AUDIT RESULTS

5.1 Program Adequacy, Implementation, and Effectiveness

This audit was performed to assess the capability of SRS-CCP to characterize CH SCG S5000 debris waste for compliance with the requirements specified in the WIPP HWFP WAP, the WIPP WAC, Chapter 18 of the WIPP DSA, and the CBFO QAPD. The characterization methods assessed were AK, Project-Level Validation and Verification (PL V&V), RTR, FGA, NDA, WWIS/WDS data entry, data quality objective (DQO) reconciliation, container management (CM), and the preparation of Waste Stream Profile Forms (WSPFs). SRS-CCP characterization field activities for Area E were evaluated and observed via live-streaming during the audit.

The audit team concluded that, based on personnel interviews and review of associated documentation and records, the SRS-CCP TRU waste characterization program procedures utilized in Area E, for CH SCG S5000 debris waste, adequately address upper-tier requirements. The characterization of this waste stream was satisfactorily implemented and effective in achieving the desired results.

5.2 General Activities

The audit team conducted interviews and reviewed implementing procedures to determine the degree to which the procedures adequately address upper-tier requirements:

- CCP-PO-001, Rev. 23, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- CCP-PO-002, Rev.31, *CCP Transuranic Waste Certification Plan*
- CCP-PO-004, Rev. 39, *CCP/SRS Interface Document*
- CCP-PO-043, Rev. 0, *CCP Interface Document Preparation*
- WP 13-QA.03, Rev. 30, *QA Independent Assessment Program*

Results of the review indicate that the procedures adequately address upper-tier requirements.

5.2.1 Results of Previous Audits

There were no results from previous audits in Area E because this audit is an initial certification audit.

5.2.2 Changes in Programs or Operations

There were no changes in programs or operations evaluated in Area E. This audit is an initial certification audit.

5.2.3 New Programs or Activities Being Implemented

All SRS-CCP programs and activities being implemented for this audit, Area E, are new because this audit is an initial certification audit.

5.2.4 Changes in Key Personnel

Review of personnel changes is a function of a recertification audit, not an initial certification audit; however, the audit team acknowledges that Recertification Audit A-21-02 conducted in October 2020 confirmed that SRS-CCP experienced changes in key personnel, including a new project manager (PM), two new vendor project managers (VPMs), and two new site project managers (SPMs).

5.2.5 Generator Site Technical Review (non-WAP-related)

The CBFO and NWP, as WIPP HWFP co-permittees, performed GSTR SR-1-17-01 at the SRS, July 17 – 21, 2017. The GSTR Final Report was issued on February 20, 2018 (CBFO:ONTP:CF:RMS:17-2377:UFC 5900.00). The GSTR team completed their review of the program, and determined that the SRS satisfactorily addressed and

resolved all of the identified issues related to the GSTR. The GSTR closure letter was issued on March 28, 2018 (CBFO:ONTP:CF:RMS:18-0595:UFC 5900.00).

5.3 WAP-Related Quality Assurance Activities

The audit team evaluated the QA elements for personnel qualification and training, control of nonconformances, and records for compliance with requirements applicable to the WIPP HWFP WAP. The evaluation results for each area audited are described below.

5.3.1 Personnel Qualification and Training

The audit team conducted interviews and reviewed implementing procedures to determine the degree to which the procedures adequately address upper-tier requirements:

- CCP-PO-001, Rev. 23, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- CCP-PO-047, Rev. 3, *CCP Training and Qualification Program Document*
- CCP-PO-049, Rev. 2, *CCP Training Implementation Matrix*
- CCP-QP-002, Rev. 46, *CCP Training and Qualification Plan*
- CCP-QP-041, Rev. 4, *CCP Job Needs Analysis and Design*
- CCP-QP-042, Rev. 2, *CCP Project Level Training and Qualification*
- CCP-QP-043, Rev. 3, *CCP Operations Level Training and Qualification*

Results of the review indicated that the procedures adequately address upper-tier requirements.

Personnel training records associated with AK Experts (AKEs), PL V&V, SPMs, RTR, FGA, CM, and NDA were examined to verify implementation of associated requirements. The audit team verified that personnel performing characterization activities are appropriately trained and qualified.

Record reviews included an evaluation of the SRS-CCP CH List of Qualified Individuals (LOQI) dated November 30, 2020. Other record reviews included qualification cards and pertinent supporting qualification documentation, such as: attendance sheets/briefings on newly-revised AKSRs for RTR operators; NDA expert analysts (EAs); FGA along with comprehensive exams; training container documentation; eye examinations; and American Society of Nondestructive Testing (ASNT)-SNT-TC-1A NDE certificates for qualified RTR operators.

The procedures reviewed, and objective evidence assembled, provided evidence that the applicable requirements for personnel qualification and training are adequately

established for compliance with upper-tier requirements, satisfactorily implemented, and effective in achieving the desired results. No WAP-affecting, or non-WAP-affecting, concerns in the area of personnel qualification and training were identified.

5.3.2 Control of Nonconforming Items

The audit team reviewed implementing procedure CCP-QP-005, Rev. 27, *CCP TRU Nonconforming Item Reporting and Control,* to determine the degree to which the procedure adequately addresses upper-tier requirements. Results of the review indicated that the procedure adequately addresses upper-tier requirements.

The audit team interviewed the NWP QA engineer and selected a random sample of nonconformance reports (NCRs) from the NCR Log to review.

The following NCRs were reviewed:

NCR-SRS-0516-20 Rev. 0	NCR-SRS-0537-20 Rev. 0
NCR-SRS-0598-20 Rev. 0	NCR-SRS-0627-20 Rev. 0

The audit team verified CCP personnel are familiar with the process for reporting NCRs to the Permittees via email to the CBFO within the time frame required by the Permit. The audit team determined there were no NCRs generated at PL within the last 12 months that required reporting to the Permittees.

The team concluded that nonconformances are appropriately documented and tracked through resolution, or voided in accordance with the procedure. NCRs reviewed included original NCRs and all applicable supporting documentation in the records package. The NCRs examined were verified to have been entered, managed, and tracked in the NCR log/module located within the CCP Integrated Data Center (IDC).

The procedures reviewed and objective evidence assembled provided evidence that the applicable requirements for nonconformances are adequately established for compliance with upper-tier requirements, satisfactorily implemented, and effective in achieving the desired results. No WAP-affecting or non-WAP-affecting concerns in the area of nonconformances were identified.

5.3.3 QA Records

The audit team conducted interviews with responsible personnel and reviewed the following implementing procedures relative to the control and administration of QA records to determine the degree to which the procedures adequately address upper-tier requirements:

- CCP-PO-001, Rev. 23, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- CCP-QP-008, Rev. 27, *CCP Records Management*

- CCP-QP-010, Rev. 32, *CCP Document Preparation, Approval, and Control*
- CCP-QP-028, Rev. 17, *CCP Records Filing, Inventorying, Scheduling, and Dispositioning*

Results of the review indicated that the procedures adequately address upper-tier requirements.

The level of control for QA records was verified through review of the CH Records Inventory and Disposition Schedule (RIDS) dated January 27, 2020. RIDS are reviewed annually by the CCP Records Manager, as required.

Due to the social distancing restrictions during the audit, the audit team was unable to visually inspect the records facility. However, the audit team selected and reviewed digitally captured records packages transmitted from the SRS-CCP Facility Records Coordinator to the CCP Records Center in Carlsbad, NM. The audit team verified that the completed transmittal forms adequately described the records being transmitted, and that the transmittal process was performed in accordance with the procedure.

It was determined through an interview with the CCP Records Manager that files are adequately organized and maintained in both paper and electronic file systems. Records are adequately segregated from non-record documents. In addition, electronic files that require control of access (such as those determined to be Unclassified Controlled Nuclear Information [UCNI], Official Use Only [OUO], Internal Use Only [IUO], and No Foreign National [NFORN] documents) are maintained on separate file servers where computer access is restricted. Hard copies of these restricted access documents are stored separate from other documents. Records personnel are familiar with requirements for restricted access files and adequately control distribution. Access to electronic files and restricted files are controlled administratively in the case of physical electronic media and by use of network server logon/password methods for electronic files maintained on computer servers.

The procedures reviewed and objective evidence assembled provided evidence that the applicable requirements for records are adequately established for compliance with upper-tier requirements, satisfactorily implemented, and effective in achieving the desired results. No WAP-affecting or non-WAP-affecting concerns in the area of QA records were identified.

5.4 Non-WAP-Related Quality Assurance Activities

Each non-WAP-related quality assurance area audited is discussed in detail in the following sections. The method used to select objective evidence is discussed; the objective evidence used to assess compliance with the CBFO QAPD, WIPP WAC, or WIPP DSA, as applicable, is cited briefly; and the result of the assessment is provided.

5.4.1 CCP/SRS Program Interface

The audit team reviewed documents and conducted interviews with the PM and the CCP SPM responsible for SRS-CCP waste characterization activities. The program interface was evaluated as established between the CCP and SRS and documented in CCP-PO-004, Rev. 39, *CCP/SRS Interface Document.* This document describes the interfaces, roles, responsibilities, and program requirements applicable to both organizations in support of CCP waste characterization activities at SRS. The audit team verified that CCP-PO-004 addresses flow-down requirements of CCP-PO-043, Rev. 0, *CCP Interface Document Preparation.*

The audit team verified CCP and SRS provide routine status for their respective scheduled activities. The audit team also verified that documents and revisions of procedures are provided by CCP to SRS for review and comment.

The audit team verified that the CCP VPM monitors the LOQI at the beginning of the shift to confirm that only qualified personnel perform waste characterization activities, that CCP performs safety walk-downs, and SRS management releases/approves of work prior to performing CCP operations daily. The audit team verified that the SRS oversight of the CCP program is performed to ensure CCP work is performed in accordance with CCP procedures, as required by CCP-PO-004, Section 6, *Oversight*. The audit team verified that the CCP QA organization conducts periodic surveillances to assess compliance with applicable WIPP requirements. The audit team evaluated the NWP QA Independent Assessment Schedule for fiscal year 2021, per WP 13-QA.03, Rev. 30, *Quality Assurance Independent Assessment Program.* As a result of this review, the audit team examined NWP surveillance S-21-07, *CCP Compliance With Conduct of Operations at Savannah River Site.*

The procedures reviewed and objective evidence assembled provided evidence that the applicable requirements for the interface document are adequately established for compliance with upper-tier requirements, satisfactorily implemented, and effective in achieving the desired results. No non-WAP-affecting concerns in the area of CCP/SRS Program Interface were identified.

5.5 WAP-Related Technical Activities

Each technical area audited is discussed in detail in the following sections. The method used to select objective evidence is discussed, the objective evidence used to assess compliance with the WIPP HWFP is cited briefly, and the result of the assessment is provided.

5.5.1 Table C6-1, WAP Checklist

The C6-1 WAP Checklist addresses general program requirements from an overall management perspective. The general requirements checklist addresses both technical requirements and specific WIPP HWFP WAP-related QA programmatic requirements that, when collectively implemented, ensure effective overall management of TRU waste characterization activities. Requirements are integrated into controlled documents to ensure the waste characterization strategy, as defined in the WAP, is accomplished and documented in accordance with controlled processes and procedures.

Technical elements evaluated for waste characterization activities consisted of AK, PL V&V, RTR, NDA, FGA, and WWIS/WDS. Objective evidence was selected and reviewed to evaluate the implementation of the associated waste characterization activities. BDRs, sampling records, and personnel qualification and training documentation were included in the evaluation. Each characterization process involves:

- Collecting raw data
- Collecting QA/quality control samples or information
- Reducing the data to a useable format, including a standard report
- Review of the report by the data generation facility and the site project office
- Comparing the data against program DQOs
- Reporting the final waste characterization information to the WIPP

The flow of data from the point of generation to inclusion in the WSPF for each waste characterization technique was reviewed to ensure that all applicable requirements were captured in the site operating procedures. The specific procedures audited and the objective evidence reviewed are described in the following sections.

During the audit, SRS-CCP demonstrated compliance with the waste characterization requirements of the WAP through interviews and documentation.

Project-Level Data Validation and Verification (PL V&V)

The audit team conducted interviews with responsible personnel and reviewed the following implementing procedures relative to the PL V&V process to determine the degree to which the procedures address upper-tier requirements:

- CCP-QP-042, Rev. 2, *CCP Project Level Training and Qualification*
- CCP-TP-001, Rev. 22, *CCP Project Level Data Validation and Verification*
- CCP-TP-002, Rev. 29, *CCP Reconciliation of DQOs and Reporting Characterization Data*
- CCP-TP-005, Rev. 32, *CCP Acceptable Knowledge Documentation*

Results of the review indicated that the procedures adequately address upper-tier requirements.

The audit team verified that the SPM who conducted work for SRS-CCP Area E was appropriately trained and qualified as required by CCP-QP-042.

The audit team evaluated the following BDRs in support of waste characterization activities completed at the SRS Area E to verify that PL V&V activities are performed in compliance with applicable procedural requirements:

RTR

- SR-RTR8-20-0001
- SR-RTR8-20-0002
- SR-RTR8-20-0003
- SR-RTR8-20-0005

NDA

- SR-MILCC6-0004
- SR-MILCC6-0005
- SR-MILCC6-0006
- SR-MILCC6-0007
- SR-MILCC6-0008
- SR-MILCC6-0009
- SR-MILCC6-0010

The BDRs were verified to be complete and accurate, and were found to be in compliance with all applicable procedural requirements.

The audit team verified the use of WSPF and Characterization Information Summary (CIS) for the BDRs evaluated. The WSPF and CIS was reviewed for the following:

- CP:12:01477 – Transmittal of SRS Waste Stream Profile Form SR-W027-773A-HET Rev. 1, to be placed in records for SR-W027-773A-HET dated 10/10/12
- CP:14:01264 – Transmittal of SRS CIS for Waste Stream #SR-W.27-773-HET (CCP-AK-SRS-007), Lot 96 and Lot 97 dated 10/21/14

The audit team verified the quarterly repeat information of the Data Generation Level (DGL) data by the project level:

- The first quarterly repeat of DGL data review will be initiated in January 2021 from the RTR data collected between October 1 and December 31, 2020.

No concerns were identified in PL V&V activities.

The procedures reviewed and objective evidence assembled and evaluated during the audit, provided evidence that the applicable requirements for PL V&V activities are adequately established for compliance with upper-tier requirements, satisfactorily implemented, and are determined effective in achieving the desired results. No WAP-affecting concerns in the area of PL V&V were identified.

WIPP Waste Information System/Waste Data System

The audit team conducted interviews and reviewed implementing procedure CCP-TP-030, Rev. 39, *CCP CH TRU Waste Certification and WWIS/WDS Data Entry,* relative to the WWIS/WDS data entry process to determine the degree to which the procedure adequately addresses upper-tier requirements. Results of the review indicate that the procedure adequately addresses upper-tier requirements.

The audit team evaluated the implementation of the WWIS/WDS data entry procedure for electronic population of data, manual update of data, and electronic transfer of data from the IDC software database to the WWIS/WDS. The audit team determined that the IDC process for CH waste container certification for the example audit package provided was performed in accordance with the appropriate procedures. Per interviews with CCP personnel, the audit team determined that personnel are familiar with the processes for characterization of CH waste containers and building of CH waste packages, and that procedure implementation is expected to be adequate once the certification of Area E is complete.

The example record package reviewed included container information summaries, pages from BDRs showing analyses values in the IDC, WWIS/WDS Waste Container Data Reports, and submittals for WWIS/WDS review/approval. Records for data entry of CH waste characterization and certification data were reviewed.

The audit team reviewed waste characterization case files for the following shipments of CH containers:

- SR-W027-221H-HET-C
  - HBL120456
  - HBL120457
- SR-W027-221H-HEPA
  - HBL120568
  - HBL120569
- SR-W027-221H-HET
  - WMPSWB582A
- SR-W027-773A-HET
  - TEMP17A

The SRS CH containers listed above were certified under the current procedural process from CCP-TP-030, which provides certification for using modules of the IDC. The audit team determined that the IDC processes for CH waste container certification were performed in accordance with the appropriate procedure.

The audit team interviewed the CCP Lead Waste Certification Official (WCO) regarding procedure work steps for performance of Unreviewed Safety Question Determinations (USQDs) and Material at Risk (MAR) evaluations. The audit team determined that WCO personnel have not received containers for certification that exceed the WIPP WAC Plutonium-Equivalent Curie (PE-Ci) limit requiring a USQD. The WCO personnel have received a request from a Transportation Certification Official (TCO) for a MAR evaluation. MAR evaluation 19-0025, Rev. 1, was completed for shipment SR320001.

The MAR override for assemblies in shipment SR320001 was applied in the WDS, as required by the procedure.

The procedures reviewed and objective evidence assembled provided evidence that the applicable requirements for WWIS/WDS data entry are adequately established for compliance with upper-tier requirements, satisfactorily implemented, and effective in achieving the desired results. No WAP-affecting or non-WAP-affecting concerns in the area of WWIS/WDS were identified.

5.5.2 Table C6-2, Acceptable Knowledge Checklist

The audit team conducted interviews with responsible personnel and reviewed the following implementing procedures relevant to the AK process to determine the degree to which the procedures address upper-tier requirements:

- CCP-PO-001, Rev. 23, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- CCP-QP-002, Rev. 46, *CCP Training and Qualification Plan*
- CCP-QP-042, Rev. 2, *CCP Project Level Training and Qualification*
- CCP-TP-001, Rev. 22, *CCP Project Level Data Validation and Verification*
- CCP-TP-002, Rev. 29, *CCP Reconciliation of DQOs and Reporting Characterization Data*
- CCP-TP-005, Rev. 32, *CCP Acceptable Knowledge Documentation*
- CCP-TP-200, Rev. 7, *Enhanced Acceptable Knowledge Review*
- WP 13-QA.03, Rev. 30, *QA Independent Assessment Program*

Results of the review indicated that the procedures adequately address upper-tier requirements as noted below.

This certification audit was primarily focused on the resumption of certified characterization activities which were last performed in 2014. This effort is initially characterizing waste from the SRS Area E. Currently there are no new waste streams created from this project. The AK audit team selected a waste stream to examine from five waste streams receiving characterized waste containers from Area E. The waste stream selected was SR-W027-221H-HET-C, CH SCG S5000 debris waste stream. Since an SRS recertification audit was conducted recently that addressed this SCG, the unique aspect of the AK audit activity for this audit was the traceability exercise involving recently characterized waste.

Nevertheless, the AK auditors conducted a full evaluation of the AK process for characterizing CH SCG S5000 debris waste. The AK audit team specifically evaluated compliance with the most recent WAP requirements listed in the C6-2 checklist along

with portions of the C6-1 and C6-3 checklists, as well as the requirements of the WIPP WAC, DOE/WIPP-02-3122 R10, Appendix H, including the development of EAKPs. Objective Evidence (OE) was reviewed and compiled to demonstrate compliance with each of the applicable requirements.

The AK auditors reviewed the latest revision to the AKSR for a relevant waste stream representing the respective SCG. The AKSR and waste stream designation is as follows:

- AK Summary Report CCP-AK-SRS-4, Rev. 16, for CH SCG S5000 debris waste stream SR-W027-221H-HET-C

This AKSR was reviewed by the audit team with respect to the information that relates to specific WAP and WIPP WAC requirements. It was examined along with relevant AK Source Documents to verify support for the waste stream description and relevant WAP and WAC required parameters, including description of waste processing activities, assignment of hazardous waste numbers (HWNs), identification of the two most prevalent radionuclides, and waste stream volume and period of generation. Furthermore, the auditors examined the most current WSPF and attachments.

The audit team also examined the following completed AK attachments from CCP-TP-005 for this waste stream:

- Attachment 1- AK Documentation Checklist
- Attachment 4- AK Source Document Information List
- Attachment 5- AK Hazardous Constituents List
- Attachment 6- AK Waste Form, Waste Material Parameters, Prohibited Items, and Packaging along with the justification memos for waste material parameter weight estimates
- Attachment 7- Radionuclides List along with AK/NDA memo for the CH waste stream
- Attachment 8- Waste Container List along with the two supporting waste stream container evaluation memos that demonstrate that the parameters and properties of containers provided by the generator to be added to a waste stream have been examined to assure that the assignment is appropriate.

The AK audit team reviewed examples of discrepancies in the AK record and the resolution of those discrepancies along with discrepancy resolutions at characterization, and the requisite AK Re-evaluation forms to demonstrate that CCP has adequate procedures in place to address relevant requirements. Limited examples of NCRs dealing with prohibited items identified during characterization were examined and compiled as OE. Available Waste Stream Characterization Checklists reconciling the results of the characterization activities with the corresponding information in the AK record were examined for the five containers from this waste stream shipped this year

along with the requisite CISs. Since characterization activities have not been active for an extended period of time for this waste stream, there was no AK Accuracy Report to review.

The WAP-required traceability exercise was conducted by the audit team for a total of six waste containers selected from the waste stream examined. These containers were recently characterized. For the six containers selected, the auditors examined BDRs for RTR and NDA. Additional traceability documentation was collected through IDC database screenshots, the AK Tracking Spreadsheet data, the AK Waste Container List, and SRS waste container input forms completed by the waste generators.

With regard to the QA aspects of the AK portion of the audit, the audit team reviewed training records for three AKEs and one SPM who currently participate in characterization activities for SRS-CCP. The audit team reviewed BDRs, discrepancy resolutions (DRs), and NCRs. The audit team examined the handling of AK records for compliance with preparation, legibility, accuracy, review, approval, and maintenance requirements. The distribution, control, and use of appropriate AK procedures was reviewed.

The audit team also examined internal audit reports. Because no characterization activities have taken place at SRS since 2014, no recent internal assessments for the AK process at SRS were available to review. However, internal audit NWP I20-01 was performed on November 5, 2019, at Lawrence Livermore National Laboratory. While this audit is not specific to SRS, it does provide evidence of independent internal assessments being performed to verify the CCP AK process. The audit team also reviewed internal assessment 2020-SA-002671, which was performed on June 16-17, 2020. 2020-SA-002671 assessed the NCR process in anticipation of characterization activities restarting at SRS. No concerns related to the QA aspects of AK were observed.

Enhanced Acceptable Knowledge Products (EAKPs)

With regard to EAKP for the waste stream reviewed, the following documents were examined during the audit.

IWMDL

The WIPP WAC, Rev. 9, placed a hold on the use of an Interface Waste Management Documents List (IWMDL) (AK attachment 9) as one of the EAKPs required to support shipment of a waste stream to the WIPP. Earlier this year, the issuance of WAC, Rev.10, restored the IWMDL process, however for waste stream SR-W027-221H-HET-C, an Acceptable Knowledge Assessment (AKA) was the appropriate process utilized. Therefore, no IWMDL was available for examination during this audit.

AKA

Acceptable Knowledge Assessments were reviewed for waste stream SR-W027-221H-HET-C (AKA11). In addition to the AKA contents, including both historic and more

current remediation and repackaging waste management practices and procedures and a list of applicable absorbents and a detailed description of the contents of each waste container bounded by the AKA, the auditors also examined comments from the internal CCP and generator site reviews and the CCP-TP-200 OAKES checklist for the AKA.

CCE
A Chemical Compatibility Evaluation (CCE03) was developed by CCP and approved by CBFO, covering several waste streams associated with the H Canyon and the HB–line (HBL) including the waste stream examined during this audit, SR-W027-221H-HET-C**.** In addition to a detailed examination of the CCE, which included consolidated material input entries, technical evaluations, waste materials and chemicals of concern, and insignificant trace chemicals and materials of concern, the AK audit team also reviewed and compiled as OE: DRRs from internal and CBFO reviews, the CBFO approval letter, and associated CBFO Form 4.15-2, *Chemical Compatibility Evaluation Checklist.* In addition, a copy of the CCP-TP-200 OAKES checklist for CCE was also examined.

BoK
CBFO approved Basis of Knowledge documentation (BOK11) was reviewed for a subpopulation of waste stream SR-W027-221H-HET-C that was determined to be exempt from the BoK requirements based upon a review of the container contents. Each of the 32 containers identified in AKA11 above was examined to determine BoK exemption, that is, the absence of oxidizing chemicals. Of these, seven containers were considered exempt and five containers have been shipped to WIPP, having met the disposal requirements.

AK Briefings
When an AKSR is issued or revised, a presentation is prepared and provided to requisite CCP waste characterization staff and appropriate generator site personnel. Since the AKSR reviewed has not been revised recently, no AK Briefings have been prepared.

The AK auditors presented one concern that deals with the maintenance of AK Attachment 4, the AK Source Document Information List. An observation was drafted that sought some clarification of this activity (see section 6.3.2).

With the exception of the one non-WAP-affecting concern identified, the procedures reviewed and objective evidence assembled, provided evidence that the applicable requirements for AK are adequately established. For the waste stream containing CH S5000 debris waste reviewed by the audit team, all elements of Enhanced AK were verified to be implemented. The information provided demonstrated that the AK process was satisfactorily implemented and effective in achieving the desired results. No WAP-affecting concerns in the area of AK were identified.

5.5.3 Table C6-3, Radiography Checklist

The audit team evaluated the adequacy, implementation, and effectiveness of the SRS-CCP RTR characterization process for CH SCG S5000 debris waste using the RTR #8 Unit.

The audit team conducted interviews with responsible personnel and reviewed the following implementing procedures as they relate to the RTR process to determine the degree to which the procedures adequately address the applicable upper-tier requirements:

- CCP-PO-005, Rev. 30, *CCP Conduct of Operations*
- CCP-QP-002, Rev. 46, *CCP Training and Qualification Plan*
- CCP-QP-043, Rev. 3, *CCP Operations Level Training and Qualification*
- CCP-TP-028, Rev. 11, *CCP Radiographic Training Container Construction*
- CCP-TP-053, Rev. 18, *CCP Standard Real-Time Radiography (RTR) Inspection Procedure*
- CCP-TP-021, Rev. 0, *CCP Real-Time Radiography #8 Operating Procedure*

Results of the review indicated that the procedures adequately address upper-tier requirements.

The audit team examined the following CH RTR BDRs generated from operations performed using the RTR #8 unit to verify implementation and compliance with the requirements for documenting RTR activities, as specified in CCP-TP-053 .

- SR-RTR8-20-0001
- SR-RTR8-20-0002
- SR-RTR8-20-0003
- SR-RTR8-20-0005

The BDRs were verified to be complete and accurate, and found to be in compliance with all applicable procedural requirements. The corresponding videos for the containers found within these BDRs were reviewed and compared to the applicable AK, CCP-AK-SRS-7, Rev 8. The audit team found when reviewing videos of containers that additional horsetails seen within the waste are not being identified or called-out by RTR operators. Per the AK packaging description these horsetails could potentially be layers of confinement. Without RTR operators providing detailed descriptions of the horsetails seen within the waste, these twist and tape closures (horsetails) not identified by RTR operators appear to be unidentified layers of confinement (see CAR 21-009 in section 6.1.2.).

During the audit the team was able to view a live stream video of a container being performed in real time. The container scanned was container ID# V35C012006. The operator was able to show the unit contained the components required by the HWFP

WAP to effectively characterize waste and the necessary components were verified by the auditors. The team observed the scan of the CH S5000 debris waste container from AK 6, Rev. 11, using WSPF-SR-W027-235-F-HET. The audit team noted one operator aid posted (OA160 Rev 0) indicating the tare weight of the drums for RTR operator use. The audit team interviewed the RTR operator and Lead Operator. The audit team also examined the 2020 RTR operational logbook while performing live stream operations (CCP-CH-SRS-NDE-RTR8-01) and verified logbook entries were logged correctly and reviewed by the VPM as required. Logbook evaluation confirmed the current revision of the associated procedures and the AKSR is verified prior to performing RTR operations.

The audit team interviewed the RTR operators to confirm the availability of current AKSRs and RTR operating procedures during waste container scans. The audit team also verified that RTR operators received waste stream-specific AK summary briefings prior to scanning containers for newly released waste streams. The audit team reviewed several image test pattern (lines/pair) exams that were performed by operators prior to operating equipment as required. The lines/pair test exams reviewed were all found to be acceptable. The audit team examined multiple entries from the CH RTR Unit #8 operational logbook: CCP-CH-SRS-NDE-RTR8-01. The audit team verified logbook entries were logged correctly and reviewed by the VPM, as required.

The audit team verified that RTR operators were appropriately trained and qualified as required by the HWFP WAP, WAC, CCP-QP-002, and CCP-QP-043. The audit team examined required RTR operator training container data and evaluation sheets, extension request letters as applicable, and the applicable audio/video media for four RTR operators. RTR training and qualification records reviewed included ASNT SNT-TC-1A certificates; container inventory sheets Radiography Training Container Data Sheets; annual eye exams; and waste stream training for the applicable AKSRs, RTR Subject Matter Expert (SME) appointment letters, and RTR-101, Rev. 6.

With the exception of one non-WAP-related concern identified, the evaluated RTR activities, field and live- stream video observations, procedure reviews, BDR, video reviews, and document reviews provided evidence that the applicable requirements for RTR characterization of CH S5000 debris waste are adequately established for compliance with upper-tier requirements, satisfactorily implemented as evaluated, and effective in achieving the desired results. No WAP-affecting concerns in the area of RTR were identified.

5.5.4 Table C6-4, Visual Examination Checklist

The audit team conducted interviews with responsible personnel and verified no waste characterization field activities for Visual Examination have been performed by SRS-CCP in Area E. Visual Examination is not applicable to the scope of this audit.

5.6 Non-WAP-related Technical Activities

Each non-WAP-related technical area audited is discussed in detail in the following

sections. The method used to select objective evidence is discussed; the objective evidence used to assess compliance with the CBFO QAPD, WIPP WAC, or WIPP DSA, as applicable, is cited briefly; and the result of the assessment is provided.

5.6.1 Nondestructive Assay

The audit team evaluated the adequacy, implementation, and effectiveness of the SRS-CCP NDA characterization process for CH SCG S5000 debris wastes through objective evidence, interviews, and onsite observation. The audit team conducted these interviews with responsible personnel and reviewed the following implementing procedures relative to the NDA process to determine the degree to which the procedures adequately address upper-tier requirements:

- CCP-TP-048, Rev. 18, *CCP NDA System Data Reviewing, Validating and Reporting Procedure;*
- CCP-TP-058, Rev. 6, *CCP NDA Performance Demonstration Program*;
- CCP-TP-076, Rev. 5, *CCP Operating the Mobile ISOCS Large Container Counter Using NDA 2000*; and
- CCP-TP-077, Rev. 4, *CCP Calibrating the Mobile ISOCS Large Container Counter Using NDA 2000*.

Results of the review indicated these procedures adequately addressed upper-tier requirements.

The audit team evaluated the following NDA equipment: Mobile ISOCS Large Container Counter (MILCC) unit # 6. The MILCC6 is currently in building 660-4E (Pad 4) in Area E.

Based on a review of the current revisions of SRS-CCP procedures, checklists were prepared and used to observe, evaluate, and verify the following:

- System stability as evidenced by the implementation and effectiveness of quality control measurements and calibration verifications;
- Applicability of each system's calibration and operational range to the matrix, geometry, and radionuclide content of waste being assayed;
- Successful participation in the CBFO-sponsored NDA Performance Demonstration Program (PDP);
- A review of all BDRs generated through project level (14 BDRs) since acceptance testing was completed in order to ensure data are reported, analyzed, and reviewed as required;
- Data generation and documentation legibility, accuracy, and completeness;
- Data and documentation review, storage, control, protection, and retrievability;

- Personnel qualification and training for Operators, Independent Technical Reviewers (ITRs), SPMs, SMEs and NDA EAs;
- Continued system protection, tracking, operability and condition of the MILCC6; and
- Data Quality and use of operational logbooks including current software versions in use.

The operations process and associated procedures were evaluated and observed for the SRS-CCP NDA system. The audit team witnessed waste characterization activities using the MILCC6 unit with an audit team member on site and other audit team members observing remotely via camera. Through observations and interviews with operators/ITRs the description and steps of operations were discussed and documented by the audit team on audit checklists.

MILCC6

SRS completed the MILCC6 unit test measurements for PDP cycles 27A, prior to this audit, on July 14, 2020, and submitted data for scoring on August 3, 2020. The sample test matrices were combustibles, glass, and metals. The SRS MILCC6 has assayed approximately 123 containers through project level review as of the audit cutoff. These assays resulted in the generation of 14 BDRs. All 14 BDRs were derived from the CH SCG S5000 debris waste stream and were reviewed to verify implementation and compliance with the requirements for documenting MILCC6 activities, as specified in CCP-TP-076. These BDRs were:

- SR-MILCC6-0004 (5 containers) (11/18/2020)
- SR-MILCC6-0005 (9 containers) (11/18/2020)
- SR-MILCC6-0006 (10 containers) (11/18/2020)
- SR-MILCC6-0007 (10 containers) (11/18/2020)
- SR-MILCC6-0008 (10 containers) (11/18/2020)
- SR-MILCC6-0009 (11 containers) (11/18/2020)
- SR-MILCC6-0010 (6 containers) (11/18/2020)
- SR-MILCC6-0011 (6 containers) (11/18/2020)
- SR-MILCC6-0012 (10 containers) (12/1/2020)
- SR-MILCC6-0013 (10 containers) (12/1/2020)
- SR-MILCC6-0014 (9 containers) (12/1/2020)
- SR-MILCC6-0015 (10 containers) (12/1/2020)
- SR-MILCC6-0016 (7 containers) (12/3/2020)
- SR-MILCC6-0017(10 containers) (12/3/2020)

CCP performed one calibration verification documented in a report dated August 18, 2020. During the verification analysis runs on August 13, 2020, the MILCC system alerted the operator with an Action (Ac) flag that the decay corrected activity (DCA), a daily quality control check, for the 964 keV gamma energy exceeded statistical control

limits. This occurrence is common in the operation of new systems as the data set for establishing control statistics is very small. An NCR was initiated (NCR-SRS-0627-20) regarding this flag and was closed on August 19, 2020. More quality control data has been collected since the initial limited data set was used to set the initial statistical limits so, new limits were established based on the larger and more representative data set. Calibration verification measurements were collected on August 17, 2020, analyzed and found to be acceptable, and the analysis documented in the calibration verification report dated August 18, 2020.

As part of the audit, the audit team selected a sample of 14 BDRs (100%). Three of those BDRs contained one NCR each involving four containers, the status of these NCRs was open at the time of the audit. The four containers were found to have hold tags and were segregated on building 660-6E (Pad 6). These NCRs were:

- NCR-SRS-0628-20 (BDR SR-MILCC6-0014) was identified in the MILCC6 program where containers CLAB160009 and CLAB160018 were determined to have TRU Alpha Activities less than or equal to 100nCi/g, which does not meet the definition of TRU waste;

- NCR-SRS-0629-20 (BDR SR-MILCC6-0016) was identified in the MILCC6 program where container CLAB160010 was determined to have TRU Alpha Activities less than or equal to 100nCi/g, which does not meet the definition of TRU waste; and

- NCR-SRS-0630-20 (BDR SR-MILCC6-0017) was identified in the MILCC6 program where container CLAB160017 was determined to have TRU Alpha Activities less than or equal to 100nCi/g, which does not meet the definition of TRU waste.

The following calibration documents were requested and provided to the audit team for evaluation:

- MILCC6-NDA-1000, Rev. 0, 1/27/2020, *Savannah River Site MILCC6 ISOCS Calibration Report*;

- MILCC6-NDA-1000, Rev. A, 7/8/2020*, Savannah River Site MILCC6 ISOCS Calibration Report*;

- CI-MILCC6-NDA-1001, Rev. 0, 7/1/2020, *Calibration Confirmation Report for the Mobile ISOCS Large Container Counter (MILCC6) at the Savannah River Site*;

- CI-MILCC6-TMU-1001, Rev. 0, 3/5/2020, *Central Characterization Project Mobile ISOCS Large Container Counter 6 (MILCC6) Total Measurement Uncertainty* Report;

The audit team interviews of MILCC6 NDA staff adequately verified the calibration range, operating parameters, and measurement uncertainty in accordance with upper-tier requirements and CCP-TP-077.

The audit team examined training records for NDA personnel and confirmed they were appropriately trained and qualified as required, and the equipment software versions installed and used to perform NDA operations were appropriately identified, documented in logbook # CCP-CH-SRS-NDA-MILCC6-01 (2020) and consistent with the versions listed in the CCP-QP-022, Rev. 19, *CCP Software Quality Assurance Plan*.

The procedures reviewed, field observation thru live-streaming, and objective evidence assembled provided evidence that the applicable requirements for NDA characterization of CH SCG S5000 debris wastes using the MILCC6 was adequately established for compliance with upper-tier requirements. The processes for characterizing CH SCG S5000 debris wastes were satisfactorily implemented and effective in achieving the desired results. No non-WAP-affecting concerns in the area of NDA were identified.

5.6.2 Container Management

The audit team interviewed SRS-CCP Container Management personnel and reviewed documentation to verify that SRS-CCP complies with the requirements of CCP-TP-068, Rev. 12, *CCP Standardized Container Management*.

The audit team verified the vendor project manager verifies the container IDs are in the AK tracking spreadsheet and recorded on Attachment 2 prior to entering the controlled area. The audit team confirmed through interview and live video of containers HBL130035 and HBL130036, that the container integrity checks are performed. The container traveler is placed in an attached plastic pocket on the drum. The audit team confirmed container management personnel use a certified scale and check weights for all waste containers. The calibration check for scale LIFT-SCL-001 was verified to be accurate and current, and the due date on the scale for recalibration is 10-12-2021.

The audit team reviewed three container travelers (Attachment 1) and three container inspection/weight reports (Attachment 2). All documents were complete as required and entered into the CCP records system.

The audit team examined training and qualification documentation for Container Management personnel and determined the operators were qualified and able to perform Container Management operations.

The procedure reviewed, field observation thru live-streaming, and objective evidence assembled provided evidence that the applicable requirements for container management are adequately established for compliance with upper-tier requirements,

satisfactorily implemented, and effective in achieving the desired results. No non-WAP-related concerns in the area of container management were identified.

5.6.3 Flammable Gas Analysis

The audit team verified and reviewed documentation to verify that SRS-CCP complies with the requirements of the DOE/WIPP-06-3345, *Waste Isolation Plant Flammable Gas Analysis*.

The SRS-CCP FGA is implemented using the DOE/WIPP procedure DOE/WIPP-06-3345, Revision 10, *Waste Isolation Plant Flammable Gas Analysis*.

The SRS-CCP FGA Batch Data Reports reviewed were:

- SR20FG14003_ICAL (Initial Calibration Report)
- SR20FG14004_MDL (Minimum Detection Limit Level Report)
- SR20FG14005
- SR20FG14006
- SR20FG14007

All reports were complete, reviewed as required, and entered into the CCP records system. There were no NCRs associated with the FGA BDRs. The site did report a WIPP Form resulting in a CAQ; WF20-1300 was written on container 773A120012 for a faulty needle assembly and potential integrity issues. The WF20-1300 has a lessons learned associated with the WIPP Form.

The audit team examined training and qualification documentation for FGA operators and determined the operators were qualified and able to perform FGA operations. The audit team verified the results from sampling of containers in the BDRs and analytical operations records utilizing an Agilent Technologies Gas Chromatograph 7890B series GC for CH waste containers as reported in the BDRs, immediately followed by sample analysis. The team also verified the use of the procedure to determine the sampling scenario, determination of the drum age criteria, recording of the filter number, and all information properly documented on the procedure attachments. All appropriate tools were utilized on the NucFil-19DS filter and needle assembly. No discrepancies were verified for either sampling or analysis of CH containers.

The audit team verified the use and proper VPM review of logbook CCP-CH-SRS-FGA-14-01 from the field. The audit team verified that Independent Technical Review was performed following analytical BDR completion, that any discrepancies were noted and returned to the analyst for correction, and that the completed and reviewed BDR was submitted to CCP Records in accordance with CCP procedures.

NorLab Certificates of Accuracy were examined for Internal Standards and Bromofluorobenzene (BFB), Initial Calibration Standards, and for Continuing Calibration

Standards. All standards were within their expiration dates and provided the required number of volatile compounds including hydrogen.

The procedures reviewed, field observation thru live-streaming, and objective evidence assembled provided evidence that the applicable requirements for FGA characterization of CH SCG S5000 debris wastes was adequately established for compliance with upper-tier requirements. The processes for characterizing CH SCG S5000 debris wastes were satisfactorily implemented and effective in achieving the desired results. No non-WAP-affecting concerns in the area of FGA were identified.

5.6.4 Dose-to-Curie

The audit team conducted interviews with responsible personnel and verified no waste characterization field activities for Dose-to-Curie have been performed by SRS-CCP in Area E. Dose-to-Curie is not applicable to the scope of this audit.

6.0 CARs, CDAs, OBSERVATIONS, AND RECOMMENDATIONS

6.1 Corrective Action Reports

During the audit, the audit team may identify conditions adverse to quality (CAQs), as defined below, and document such conditions on corrective action reports (CARs).

> 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.
>
> Significant Condition Adverse to Quality – A condition which, if uncorrected, could have a serious effect on safety, operability, waste confinement, TRU waste site certification, regulatory compliance demonstration, or the effective implementation of the QA program.

6.1.1 WAP-Affecting Corrective Action Reports

No WAP-affecting CARs were identified during the audit.

6.1.2 Non-WAP-Affecting Corrective Action Reports

One non-WAP-affecting CAR was identified during the audit.

CAR 21-009
Condition Adverse to Quality:

RTR operators are not consistently identifying multiple horsetails found within the waste. Per the AK packaging description these horsetails could potentially be layers of confinement. Without RTR operators providing detailed descriptions of the horsetails seen within the waste, these twist and tape closures (horsetails) not identified by RTR operators appear to be unidentified layers of confinement. Containers reviewed included: 773A160001, 773A160003, 773A160006, 773A160011, 773A140015, 773A140002, and 773A170001. Container V35C012006 was viewed over live stream video. Container V35C012001 was viewed live in the field.

Requirement:

CCP-TP-053, Rev. 18, *CCP Standard Real-Time Radiography (RTR) Inspection Procedure*, Section 4.4.2, Data Entry for applicable radiography data sheet, Sections 1 through 4, states:

[B] Ensure the following data are recorded or displayed in Section 2, as applicable.

- Estimated number of Layers of Confinement

6.2 Deficiencies Corrected During the Audit

During the audit, the audit team may identify CAQs. Audit team members, the Audit Team Leader (ATL), and the CBFO QA Management Representative evaluate the CAQs to determine if they are significant. Once a determination is made that the CAQ is not significant, the audit team member, in conjunction with the ATL and the CBFO QA Management Representative, determines if the CAQ is a minor and isolated case requiring only remedial action and therefore can be corrected during the audit.

Upon determination that the CAQ is minor and isolated, the audit team member, in conjunction with the ATL and the CBFO QA Management Representative, evaluates/verifies any objective evidence/actions submitted or taken by the audited organization and determines if the condition was corrected in an acceptable manner. Once it has been determined that the CAQ has been corrected, the CBFO QA Management Representative categorizes the condition as corrected during audit (CDA) according to the definition below.

> CDAs – Isolated deficiencies that do not require a root cause determination or actions to preclude recurrence. Correction of the deficiency can be verified prior to the end of the audit. Examples include one or two minor changes required to correct a procedure (isolated), one or two forms not signed or not dated (isolated), and one or two individuals that have not completed a reading assignment.

6.2.1 WAP-Affecting Deficiencies Corrected During the Audit

No WAP-affecting CAQs were identified or corrected during this audit.

6.2.2 Non-WAP-Affecting Deficiencies Corrected During the Audit

No non-WAP-affecting CAQs were identified and corrected during the audit.

6.3 Observations

During the audit, the audit team may identify potential problems that should be communicated to the audited organization. The audit team members, in conjunction with the ATL, evaluate these conditions and classify them as Observations using the following definition:

> Observation – A condition that, if not controlled, could result in a CAQ. Once a determination is made, the audit team member, in conjunction with the ATL, categorizes the condition appropriately.

6.3.1 WAP-Affecting Observations

No WAP-affecting Observations were identified during the audit.

6.3.2 Non-WAP-Affecting Observations

One non-WAP-affecting Observation was identified during the audit.

Observation 1

Additional discussions with CCP personnel have determined that the historic issues regarding maintenance of AK Attachment 4, the Acceptable Knowledge Information List, have been addressed. CCP is maintaining the applicable and appropriate AK Source Documents by waste stream and in a format consistent with the elements of Attachment 4. In addition, the AK procedure CCP-TP-005 has been revised to call for the generation of a complete Attachment 4 for each waste stream identified in an AKSR when that report is issued or revised. Furthermore, CCP will continue the practice of issuing a current Attachment 4 for a waste steam upon request such as might come from an auditor. A response to this Observation is requested to provide additional information regarding CCP maintenance of the AK Source Document records and other ideas regarding the appropriate use of this element of the AK record.

6.4 Recommendations

During the audit, the audit team may identify suggestions for improvement that should be communicated to the audited organization. The audit team members, in conjunction with the ATL, evaluate these conditions and classify them as Recommendations using the following definition:

Recommendations – Suggestions that are directed toward identifying opportunities for improvement and enhancing methods of implementing requirements.

Once a determination is made, the audit team member, in conjunction with the ATL, categorizes the condition appropriately.

No Recommendations were identified during the audit.

7.0 LIST OF ATTACHMENTS

Attachment 1: Meeting Attendees and Personnel Contacted During Audit A-21-08
Attachment 2: Personnel Contacted During the Audit by Subject Area
Attachment 3 Summary Table of Audit Results
Attachment 4: WAP-Related Objective Evidence Reviewed During the Audit
Attachment 5: Table of Audited Procedures
Attachment 6: List of Processes and Equipment Reviewed

MEETING ATTENDEES AND PERSONNEL CONTACTED DURING AUDIT A-21-08				
NAME	**ORG/TITLE**	**PRE-AUDIT MEETING**	**CONTACTED DURING AUDIT**	**POST-AUDIT MEETING**
Ballew, Veronica	NWP/QA Program/Project Integration Manager	X	X	X
Bruce, Devin	NWP/CCP FGA Operator		X	
Biswell, David	NMED/Observer	X	X	X
Brantly, Todd	SRS Radcon Manager		X	
Carlton, Tim	Mirion/NDA Operator	X	X	
Carver, Tom	DOE/CBFO Waste Characterization/ ONTP	X	X	X
Comeau, Chuck	DOE-SRS		X	X
Dawson, Jana	Trinity Engineering/ for NMED	X	X	X
Dover, Dale	NWP/CCP FGA Lead Operator	X	X	X
Gallegos, Adam	Mirion/NDA EA	X	X	X
Gonzalez, Jorge	NWP/CCP SPM	X	X	X
Groover, Terry-Anne	NWP/CCP Cog Eng. NDE		X	X
Haar, Kevin	NWP/CCP NDA Cog Engineer	X	X	X
Harvill, Joe	NWP/CCP NDA Tech Advisor	X	X	
Hernandez, Jennifer	NWP/CCP Training Manager	X	X	X

MEETING ATTENDEES AND PERSONNEL CONTACTED DURING AUDIT A-21-08				
NAME	**ORG/TITLE**	**PRE-AUDIT MEETING**	**CONTACTED DURING AUDIT**	**POST-AUDIT MEETING**
Jolly, Darren	CBFO/OQA Manager		X	
Kantrowitz, Rich	NWP/CCP Technical Support	X	X	X
Kareis, Nikki	NWP/CCP RTR Manager	X	X	X
Kirkes, Creta	NWP/CCP WCO	X	X	X
Lee, Ronnie	NWP/CCP Manager	X	X	
Lopez, Joe	CBFO/OQA Software QA Specialist	X	X	X
Maestas, Ricardo	NMED/Observer		X	X
Matheny, Derek	NWP/CCP VPM	X	X	X
McLean, Megan	NMED/Observer	X	X	X
Morgan, Tom	SRS 58-E		X	X
Pace, Berry	NWP/CCP Characterization Advisor	X	X	X
Peters, Kevin	Tech-Specs/CCP AKE	X	X	X
Pyeatt, Brandie	NWP/CCP QA	X		
Reeves, Ron	NWP/CCP Operations Manager	X	X	X
Riordan, Ryan	Tech-Specs/CCP AKE	X	X	X
Saiz, Sheri	NWP/QA Admin. Specialist	X	X	
Salter, Scott	NWP/CCP Manager		X	X

MEETING ATTENDEES AND PERSONNEL CONTACTED DURING AUDIT A-21-08				
NAME	**ORG/TITLE**	**PRE-AUDIT MEETING**	**CONTACTED DURING AUDIT**	**POST-AUDIT MEETING**
Searcy, William	Mirion/NDA Operator		X	
Shepley, Todd	TBS Services Subcontractor NDA Operator		X	
Smith, Patrick	NWP/CCP QA	X		X
Teal, James	NWP/CCP RTR Operator		X	
Tilmon, Giovanna	TFE/CCP Records	X	X	X
Tilmon, Pat	NWP/CCP VPM	X	X	X
Treadway, Shawn	NWP/CCP Container Management Manager	X	X	
Wade, Daniel	NWP/CCP Manager	X	X	X
Walker, Connie	Tech-Specs/CCP AKE	X	X	X
Webb, Jessica	TFE/CCP Document Service Manager		X	X
Yturralde, Jewell	TFE/CCP Record Manager	X	X	X

PERSONNEL CONTACTED DURING THE AUDIT BY SUBJECT AREA (WAP-RELATED)

Acceptable Knowledge	Kevin Peters Ryan Riordan Connie Walker
Project Level V&V	Jorge Gonzalez Daniel Wade
Real-Time Radiography	Nikki Karris James Teal Terry-Anne Groover Derek Matheny Pat Tilmon
Flammable Gas Analysis	Devin Bruce Dale Dover
Personnel Qualification and Training	Jennifer Hernandez
Control of Nonconforming Items	Veronica Ballew Brandy Pyeatt
Records	Jewell Yturralde
WIPP Waste Information System (WWIS Data Entry)	Creta Kirkes

Audit A-21-08
SUMMARY TABLE OF AUDIT RESULTS

QA / Technical Elements	Concern Classification				QA Evaluation		Technical Evaluation
	CARs	CDAs	Obs	Rec	Adequacy	Implementation	Effectiveness
Program Status/Program Changes/Interface					A	S	E
Acceptable Knowledge & Waste Certification			1		A	S	E
Project Level V&V					A	S	E
Real-Time Radiography	1				A	S	E
Nondestructive Assay					A	S	E
Container Management					A	S	E
Flammable Gas Analysis					A	S	E
C6 General QA Elements (NCRs, Quals & Training, Records)					A	S	E
C6 General QA Elements (WWIS/WDS)					A	S	E
TOTALS	1	0	1	0	A	S	E

Definitions

E = Effective
S = Satisfactory
I = Indeterminate
M = Marginal
U = Unsatisfactory

CAR = Corrective Action Report
CDA = Corrected During Audit
NE = Not Effective

Obs – Observation
Rec = Recommendation
A = Adequate
NA = Not Adequate

WAP-Related Objective Evidence Reviewed During the Audit

The WAP-related objective evidence supporting the Audit A-21-08 are included in the shipping box(es) submitted with the final audit report. Included in the shipping box(es) is a “Content Map” describing the location (using color coding) and identity of all required objective evidence supporting the performance of the audit.

Audit A-21-08
TABLE OF AUDITED PROCEDURES

	Document No.	Revision Number	Document Title
1.	CCP-PO-001	23	CCP Transuranic Waste Characterization Quality Assurance Project Plan
2.	CCP-PO-002	31	CCP Transuranic Waste Certification Plan
3.	CCP-PO-004	39	CCP/SRS Interface Document
4.	CCP-PO-005	30	CCP Conduct of Operations
5.	CCP-PO-043	0	CCP Interface Document Preparation
6.	CCP-PO-047	3	CCP Training and Qualification Program Document
7.	CCP-PO-049	2	CCP Training Implementation Matrix
8.	CCP-QP-002	46	CCP Training and Qualification Plan
9.	CCP-QP-005	27	CCP TRU Nonconforming Item Reporting and Control
10.	CCP-QP-008	27	CCP Records Management
11.	CCP-QP-010	32	CCP Document Preparation, Approval, and Control
12.	CCP-QP-022	19	CCP Software Quality Assurance Plan
13.	CCP-QP-028	17	CCP Records Filing, Inventorying, Scheduling, and Dispositioning
14.	CCP-QP-041	4	CCP Job Needs Analysis and Design
15.	CCP-QP-042	2	CCP Project Level Training and Qualification
16.	CCP-QP-043	3	CCP Operations Level Training and Qualification
17.	CCP-TP-001	22	CCP Project Level Data Validation and Verification
18.	CCP-TP-002	29	CCP Reconciliation of DQOs and Reporting Characterization Data
19.	CCP-TP-005	32	CCP Acceptable Knowledge Documentation
20.	CCP-TP-021	0	CCP Real-Time Radiography #8 Operating Procedure
21.	CCP-TP-028	11	CCP Radiographic Training Container Construction
22.	CCP-TP-030	39	CCP CH TRU Waste Certification and WWIS/WDS Data Entry
23.	CCP-TP-048	18	CCP NDA System Data Reviewing, Validating, and Reporting Procedure
24.	CCP-TP-053	18	CCP Standard Real-Time Radiography (RTR) Inspection Procedure
25.	CCP-TP-058	6	CCP NDA Performance Demonstration Program
26.	CCP-TP-068	12	CCP Standardized Container Management
27.	CCP-TP-076	5	CCP Operating the Mobile ISOCS Large Container Counter Using NDA 2000
28.	CCP-TP-077	4	CCP Calibrating the Mobile ISOCS Large Container Counter Using NDA 2000
29.	CCP-TP-200	7	Enhanced Acceptable Knowledge Review
30.	DOE/WIPP-06-3345	10	Waste Isolation Plant Flammable Gas Analysis
31.	WP 13-1	39	Nuclear Waste Partnership LLC, Quality Assurance Program Description
32.	WP 13-QA.03	30	Quality Assurance Independent Assessment Program

List of Processes and Equipment Evaluated

WIPP #	Process/Equipment Description	Applicable to the Following Waste Streams/Groups of Waste Streams
LIST OF PROCESSES/EQUIPMENT		
To Be Assigned	Non-Destructive Assay (NDA) Equipment MILCC6	Debris (S5000) - CH
To Be Assigned	Non-Destructive Examination (NDE) Equipment RTR #8	Debris (S5000) - CH
To Be Assigned	Flammable Gas Analysis (FGA) Process FGA 14	Debris (S5000) - CH
N/A	Acceptable Knowledge (AK)	Debris (S5000) - CH
N/A	Project Level Validation and Verification (V&V)	Debris (S5000) - CH
N/A	WIPP Waste Information System/Waste Data System (WWIS/WDS)	Debris (S5000) - CH
N/A	Quality Assurance Program	Debris (S5000) - CH