

United States Government

Department of Energy

memorandum

Carlsbad Field Office
Carlsbad, New Mexico 88221

DATE: August 15, 2022

**REPLY TO
ATTN OF:** CBFO:QAD:MS:JM:22-0872:UFC 2300.00

SUBJECT: Interim Audit Report for CBFO Audit A-22-16, of ANL/CCP Transuranic Waste Characterization and Certification

TO: Noreen Brachman, DOE-CH

The Carlsbad Field Office (CBFO) conducted the annual Recertification Audit A-22-16, Argonne National Laboratory Central Characterization Program (ANL/CCP) Transuranic (TRU) Waste Characterization and Certification, July 26 – 28, 2022. The interim audit report is attached.

The audit team concluded that the ANL/CCP TRU waste characterization programs for characterizing remote-handled and contact-handled Summary Category Group S5000 debris waste are adequate relative to the flow-down of requirements, and the technical activities evaluated are satisfactorily implemented and effective, in the areas evaluated, with the exceptions documented in the audit report.

No conditions adverse to quality were identified during this audit.

If you have any questions concerning the audit, please contact me at (814) 421-3322.

**MICHEAL
STAPLETON** Digitally signed by
MICHEAL STAPLETON
Date: 2022.08.15
12:44:13 -06'00'

Micheal Stapleton,
Senior Quality Assurance Specialist
Quality Assurance Division
Carlsbad Field Office

Attachment

cc: w/attachment

J. Lorence, EM-3.113	* ED	R. Kantrowitz, NWP/CCP	ED
R. Toro, EM-3.113	ED	K. Gentry, NWP/CCP	ED
R. Knerr, CBFO	ED	T. Groover, NWP/CCP	ED
M. Bollinger, CBFO	ED	J. Carter, NWP/CCP	ED
K. Princen, CBFO	ED	D. Ivey, NWP/QA	ED
E. Garza, CBFO	ED	V. Ballew, NWP/QA	ED
D. C. Gadbury, CBFO	ED	S. Saiz, NWP/QA	ED
D. Jolley, CBFO	ED	A. Boyea, NWP/QA	ED
J. Lopez, CBFO	ED	J. Ellis, EPA	ED
J. Montemayor, CBFO	ED	T. Peake, EPA	ED
J. Biesecker, CBFO	ED	E. Felts, EPA	ED
H. Cruickshank, CBFO	ED	R. Shean, NMED	ED
A. Walker, CBFO	ED	R. Maestas, NMD	ED
M. Toothman, CBFO	ED	D. Biswell, NMED	ED
D. Bamper, CBFO	ED	M. McLean, NMED	ED
M. Luckey, CBFO	ED	S. Kopp, CTAC	ED
W. Iqbal, CBFO	ED	W. Ledford, CTAC	ED
D. Smith, CBFO	ED	S. Gomez, CTAC	ED
K. Joshi, DOE-CH	ED	R. Castillo, CTAC	ED
S. Dunagan, NWP	ED	J. Maupin, CTAC	ED
S. Strong, NWP	ED	D. Harvill, CTAC	ED
K. Stone, NWP/CCP	ED	G. White, CTAC	ED
R. Lee, NWP/CCP	ED	Site Documents	ED
R. Reeves, NWP/CCP	ED	S. Sifuentes, SNL	ED
D. Wade, NWP/CCP	ED	WWIS Database Admin.	ED
C. Simmons, NWP/CCP	ED	CBFO M&RC	ED
J. Harvill, NWP/CCP	ED	CBFO QA File	
B. Pace, NWP/CCP	ED	*ED denotes electronic distribution	

U.S. DEPARTMENT OF ENERGY
CARLSBAD FIELD OFFICE

INTERIM AUDIT REPORT

OF THE

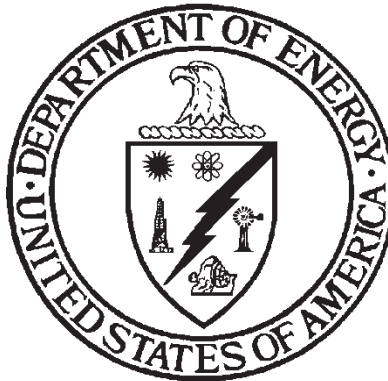
ARGONNE NATIONAL LABORATORY
CENTRAL CHARACTERIZATION PROGRAM

FOR

TRU WASTE CHARACTERIZATION ACTIVITIES
AT
LEMONT, ILLINOIS
and CARLSBAD, NEW MEXICO

AUDIT NUMBER A-22-16

July 26 – 28, 2022



Prepared by: Shelly Gomez Digitally signed by Shelly Gomez
Date: 2022.08.12 15:11:10 -06'00' **Date:** 8/12/2022
Shelly Gomez, CTAC
Audit Team Leader

Concurred by: MICHEAL STAPLETON Digitally signed by MICHEAL STAPLETON
Date: 2022.08.15 12:24:30 -06'00' **Date:** _____
Micheal Stapleton, CBFO
Quality Assurance Lead

Approved by: DARREN JOLLEY Digitally signed by DARREN JOLLEY
Date: 2022.08.15 12:26:45 -06'00' **Date:** _____
Darren Jolley, Director
CBFO Quality Assurance Division

1.0 EXECUTIVE SUMMARY

U.S. Department of Energy (DOE) Carlsbad Field Office (CBFO) Audit A-22-16 was performed to evaluate the adequacy, implementation, and effectiveness of the programs for transuranic (TRU) waste characterization activities performed for the Argonne National Laboratory (ANL) by the Nuclear Waste Partnership LLC (NWP) Central Characterization Program (CCP). The audit was conducted for the purpose of recertification of the ANL/CCP programs for characterizing remote-handled (RH) TRU Summary Category Group (SCG) S5000 debris waste, and for the initial certification of the programs for characterizing contact-handled (CH) TRU 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 *CBFO Quality Assurance Program Document* (QAPD), the *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant* (WAC), the *Remote-Handled TRU Waste Characterization Program Implementation Plan* (RH-TRU WCPIP), and the *Waste Isolation Pilot Plant Documented Safety Analysis* (DSA), Chapter 18.

Some audit activities were conducted from Carlsbad, NM, via teleconference and other remote locations. Waste transportation activities were not included in the scope of this audit. Audit activities were conducted July 26-28, 2022. Although previously certified shipping activities for shielded containers have been evaluated and verified for compliance, a surveillance is needed prior to the shipment of any RH waste in a RH-TRU 72-B Cask.

This report documents in detail the actions taken by auditors and technical specialists to verify compliance to HWFP Waste Analysis Plan (WAP) requirements. Verification of compliance was demonstrated through observation of field activities at the ANL facilities, and through review of batch data reports (BDRs) and specific waste characterization process logbooks. Interviews were conducted with appropriate operations and project management personnel.

The audit team concluded that the ANL/CCP TRU waste characterization program procedures for characterizing RH and CH TRU SCG S5000 debris waste adequately address upper-tier requirements, were satisfactorily implemented, and effective in achieving the desired results. However, waste characterization activities have not been performed, nor BDRs generated, for nondestructive assay (NDA) or dimensional/gravimetric measurement (DG), and have therefore been deemed indeterminate. The acceptable knowledge (AK) traceability exercise could not be performed due to the lack of BDRs for NDA, resulting in AK for CH waste being deemed indeterminate as well.

No WIPP HWFP WAP-affecting conditions adverse to quality (CAQs) or WAP-affecting Observations were identified during the audit. There were no non-WAP-affecting CAQs, Observations, or Recommendations identified during the audit.

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 (QA) activities performed by the NWP/CCP at ANL for characterization of RH and CH TRU SCG S5000 debris waste. This was an initial certification for CH waste characterization activities. Some audit activities were conducted from Carlsbad, NM, via teleconference and other remote locations. Transportation activities were not included in the scope of this audit.

The following areas were evaluated:

General Activities

- Results of Previous Audits
- Changes in Programs or Operations
- New Programs or Activities Being Implemented
- Changes in Key Personnel

WAP-Related Quality Assurance Activities

- Nonconformances
- Personnel Qualification and Training
- Records

Non-WAP-Related Quality Assurance Activities

- ANL/CCP Program Interface
 - Measuring and Test Equipment (M&TE)*
 - Software Version Installation*
- *These QA activity evaluations are found within the report and do not have their own respective sections.

WAP-Related Technical Activities

- Acceptable Knowledge (AK)
- Project-Level Data Validation and Verification (PL V&V)
- Visual Examination (VE)
- WIPP Waste Information System (WWIS)/Waste Data System (WDS)

Non-WAP-Related Technical Activities

- Radiological Characterization (Dose-to-Curie [DTC])
- Container Management (CM)
- Dimensional/Gravimetric Measurement (DG)
- Nondestructive Assay (NDA)

The evaluation of the adequacy of ANL/CCP documents was based on current versions of the following documents:

- Waste Isolation Pilot Plant Hazardous Waste Facility Permit NM4890139088-TSDF
- DOE/CBFO-94-1012, *CBFO 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-02-3214, *Remote-Handled TRU Waste Characterization Program Implementation Plan (RH TRU WCPIP)*
- DOE/WIPP-07-3372, *Waste Isolation Pilot Plant Documented Safety Analysis (DSA)*, Chapter 18

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

- CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- CCP-PO-002, *CCP Transuranic Waste Certification Plan*
- CCP-PO-500, *CCP/ANL Interface Document*
- Related CCP QA and technical implementing procedures

2.2 Purpose

Audit A-22-16 was conducted to evaluate the adequacy and effective implementation of program requirements for the characterization and certification of RH and CH TRU SCG S5000 debris waste at the ANL for compliance with applicable upper-tier requirements.

3.0 QUALITY ASSURANCE LEAD, AUDIT TEAM, TECHNICAL SPECIALISTS, AND OBSERVERS

Micheal Stapleton	CBFO Quality Assurance Lead*
Shelly Gomez	Audit Team Leader, CBFO Technical Assistance Contractor (CTAC)*
Wayne Ledford	Auditor, CTAC (Program Status)*
Paul Gilbert	Auditor, CTAC (C6 QA)
Bob Prentiss	Auditor, CTAC (C6 QA)
Dick Blauvelt	Technical Specialist, CTAC (AK)
Randy Fitzgerald	Technical Specialist, CTAC (AK)
Maria Escarcega	Auditor, CTAC (AK QA)
Jim Oliver	Technical Specialist, CTAC (DTC/NDA)*
Tim Boswell	Auditor, CTAC (DTC/NDA)*
Dale Dover	Auditor/Technical Specialist, CTAC (PL V&V)*
Dustin Stegman	Auditor/Technical Specialist, CTAC (VE/CM)*
Eric Lyles	Auditor, CTAC (VE/CM)*

OBSERVERS

Morgan Luckey	CBFO Office of the National TRU Program Certification Division (ONTPCD)*
Porf Martinez	CBFO ONTPCD
David Biswell	New Mexico Environment Department (NMED)

* Indicates on-site presence

4.0 AUDIT MEETING ATTENDEES AND PERSONNEL CONTACTED

The audit meeting attendees and personnel contacted during the audit process are identified in Attachment 1. A pre-audit meeting was held on July 26, 2022, at the ANL site and via teleconference. No management briefings were held as no concerns were identified during the audit. ANL/CCP management and staff were updated daily on the audit progress. A post-audit meeting was held on July 28, 2022, on-site and via teleconference.

Attachment 2 lists the ANL/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 ANL/CCP to characterize RH and CH TRU SCG S5000 debris waste for compliance with the requirements specified in the WIPP HWFP WAP, the WIPP WAC, Chapter 18 of the WIPP DSA, the RH-TRU WCPPI, and the CBFO QAPD. The characterization methods assessed were AK, VE, DG, NDA, and DTC. Other areas evaluated were data generation level (DGL) and PL V&V, WWIS/WDS data entry, data quality objective (DQO) reconciliation, CM, and the preparation of Waste Stream Profile Forms (WSPFs).

The audit team concluded that, based on field observations, personnel interviews, and review of associated documentation and records, the ANL/CCP TRU waste characterization program and activities for characterizing RH and CH TRU SCG S5000 debris waste adequately address upper-tier requirements. The processes for characterizing RH and CH TRU SCG S5000 debris waste were satisfactorily implemented and effective in achieving the desired results. Batch data reports have not yet been generated and field activities have not yet been performed for NDA. Likewise, BDRs have not been generated and field activities were not performed for DG since the previous recertification audit. The AK for CH waste traceability is deemed indeterminate due to the inability to perform the traceability exercise for lack of NDA BDRs.

5.2 General Activities

5.2.1 Results of Previous Audits

The audit team examined the results of the previous CBFO recertification audit of the ANL/CCP for RH waste characterization activities (A-21-24), wherein no CAQs were identified.

5.2.2 Changes in Programs or Operations

There have been no changes to the currently certified programs and operations since the last audit.

5.2.3 New Programs or Activities Being Implemented

The ANL/CCP has commenced VE of CH waste. The containers processed through CH VE are under administrative hold until CH VE is approved in a certification letter. The ANL/CCP plans to add NDA to the program, but the NDA system was not ready for a certification audit during Audit A-22-16.

5.2.4 Changes in Key Personnel

There have been no significant changes to key personnel since the last audit. Personnel to support CH VE and NDA have been qualified under the CCP program.

5.3 WAP-Related Quality Assurance Activities

The audit team evaluated the QA elements for personnel qualification and training, nonconformances, and records for compliance with requirements in 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 the following 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-QP-002, Rev. 48, *CCP Training and Qualification Plan*
- CCP-QP-042, Rev. 3, *CCP Project Level Training and Qualification*
- CCP-QP-043, Rev. 6, *CCP Operations Level Training and Qualification*

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

Personnel training records associated with VE, DTC, DG, AK, and Site Project Managers (SPMs) were examined to verify implementation of associated requirements. The audit team verified that personnel performing waste characterization and certification activities are appropriately qualified.

Record reviews included an evaluation of the ANL/CCP CH List of Qualified Individuals (LOQI) dated July 12 and 26, 2022. The audit team also reviewed the RH LOQI dated July 29, 2021, and July 12 and 26, 2022. Other record reviews included qualification cards and pertinent supporting qualification documentation, such as appointment letters for VE Experts (VEEs).

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. 28, *CCP TRU Nonconforming Item Reporting and Control*, 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.

Central Characterization Program personnel were interviewed and the audit team determined that no NCRs were processed since the last audit, A-21-24, performed July 20 – 21, 2021. The results of audit A-21-24 concluded that the procedures reviewed and objective evidence assembled provided evidence that the applicable requirements for nonconforming items 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 nonconforming items 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. 28, *CCP Records Management*
- CCP-QP-028, Rev. 17, *CCP Records Filing, Inventorying, Scheduling, and Dispositioning*

Results of the review indicate 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 March 29, 2022, and RH RIDS dated April 04, 2022. The RIDS are reviewed annually by the CCP Records Manager, as required.

As part of the records review, the audit team reviewed three CCP CH waste shipping records packages, for shipments AE180002, AE190001, and AE190002, to ensure that the U.S. Environmental Protection Agency (EPA) Hazardous Waste Manifest (HWM) was completed prior to shipping the waste to the WIPP. The audit team verified that the HWM contained the generator site name and EPA identification (ID); site contact name and phone number; quantity of waste; the hazardous waste numbers for each line item; the listing of all container identification numbers; and the signature of authorized generator site representative. Further, it was determined that the waste stream identification number, hazardous waste numbers, certification data, and shipping date were included in the shipment records.

It was determined through interview with the CCP Records Manager that 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 user access is restricted. 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 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 QA 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 ANL/CCP Program Interface

The audit team conducted interviews with the CCP RH Manager and reviewed the following implementing procedures relative to the program interface established between the CCP and the ANL 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 (QAPjP)*
- CCP-PO-500, Rev. 9, *CCP/ANL Waste Interface Document*

The results of the reviews indicate the procedures adequately address the associated requirements and are effectively implemented.

The audit team interviewed the CCP RH Manager responsible for ANL/CCP waste characterization activities. The audit team reviewed objective evidence to confirm requirements were met as specified in CCP-PO-500, Rev. 9, for RH TRU waste characterization activities.

The audit team verified the level of oversight by the Host site of the CCP program and that the Host site QA organization conducts periodic oversight to ensure CCP operations at the ANL site are conducted in accordance with CCP procedures. The audit team evaluated the following management assessments:

- NWM-FY22-MA-003, CH-TRU Program Startup Activities (WCD and associated CCP Procedure compliance for CH-TRU VE packaging activities)
- NWM-FY22-MA-005, Evaluate NWM RH-TRU Repatriation Activities

This review provided evidence that the Host site conducted periodic oversight of the waste certification program.

The audit team verified that the CCP QA organization conducts periodic surveillances to assess compliance with applicable WIPP requirements. Nuclear Waste Partnership QA had not performed a surveillance at ANL since the last audit. A surveillance is scheduled for September 2022.

The audit team verified that the Host Site Management Representative (SMR) coordinates, reviews, provides comments, and approves comment resolutions on documents. This included facilitating generator document review and comment

resolution as necessary. The review and comment resolutions were documented in accordance with CCP-QP-010, *CCP Document Preparation, Approval, and Control*.

The audit team verified through review of the July 26, 2022, Plan of the Day, that the CCP Vendor Project Manager (VPM) obtains Host site management daily release/approval prior to performing CCP operations. The audit team verified through review of the June 26, 2022, Plan of the Week, that CCP and the Host site provide weekly status updates for the respective scheduled activities.

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 ANL/CCP 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 DGL and PL V&V, AK, VE, WWIS/WDS, and preparation of WSPFs. Objective evidence was selected and reviewed to evaluate the implementation of the associated waste characterization activities. Batch data reports 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, ANL/CCP demonstrated compliance with the waste characterization requirements of the WAP through interviews, documentation, and field observations.

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. 3, *CCP Project Level Training and Qualification*
- CCP-TP-001, Rev. 23, *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-500, Rev. 17, *CCP Remote-Handled Waste Visual Examination*
- CCP-TP-504, Rev. 22, *CCP Dose-to-Curie Survey Procedure for Remote-Handled Transuranic Waste*
- CCP-TP-512, Rev. 7, *CCP Remote-Handled Waste Sampling*

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

The audit team verified that the SPMs who performed work for ANL/CCP were appropriately trained and qualified as required by CCP-QP-042, Rev. 3.

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

VE
AEVECH0001
AEVECH0002
AEVECH0003
AEVECH0004
ANLRHVE22001

DTC
ANLRHDTC21002

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 that the WSPF was complete with a Characterization Information Summary (CIS). The CIS lots were reviewed for the following:

- Waste Stream Profile Form for Waste Stream CCP-AK-ANLE-500 with CIS Lot 47 (CP:13:01533)

The audit team verified AK Summary Report CCP-AK-ANLE-002, Rev. 0. This waste stream is new and has no developed WSPF and CIS pending approval of TRUCON code. This AK Summary Report supports all the BDRs that are reported through the SPM for this audit.

No discrepancy resolutions were issued since last audit.

The audit team verified the quarterly repeat information of the DGL data by the project level:

- CP:21:01216 Request of 2nd Quarter 2021 RH VE Quarterly Request of DGL Review, Validation, and Verification at the ANL
- CP:22:01124 Results of 2nd Quarter 2021 RH VE Quarterly

The SPM reported that there has not been a request sent in 2022 since the VE batches were completed within the last month prior to the audit. Quarterly reports requested or reported for these will be available next recertification audit.

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 effective in achieving the desired results. No WAP-affecting concerns in the area of PL V&V were identified.

WIPP Waste Information System (WWIS)/Waste Data System (WDS)

The audit team conducted interviews and reviewed implementing procedure CCP-TP-530, Rev. 12, *CCP RH 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 waste characterization activities for RH containers are performed using CCP-TP-530, which utilizes functions of the Integrated Data Center (IDC) for certification and electronic submittal to the WWIS/WDS. Per interview with a CCP Waste Certification Official (WCO), the audit team determined that personnel are familiar with the process for characterization of RH waste containers, building RH waste packages, and that procedure implementation is adequate for these activities. However, since ANL/CCP has utilized Shielded Container Assemblies (SCAs) to ship RH waste as CH waste, the audit team reviewed CH container data for the following CH containers:

- CH Container (SCA) E1439SCCH
- CH Container (SCA) AE1441SC
- CH Container (SCA) AE1440SC
- CH Container (SCA) AE190002

The audit team evaluated the implementation of the WWIS/WDS data entry procedures for electronic population of data, manual update of data, and electronic transfer of data from the IDC software database to the WWIS/WDS. Records 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.

The ANL CH containers listed above were certified under the procedural process from CCP-TP-030, Rev. 38, *CCP CH TRU Waste Certification and WWIS/WDS Data Entry*, which provides certification for using modules of the IDC. The current revision for the procedure is revision 40. It was determined that the current revision adequately addresses applicable upper-tier requirements. 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 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 PE-Ci (Plutonium-Equivalent Curie) limit requiring a USQD.

The procedures reviewed provided evidence that the applicable requirements for WWIS/WDS data entry are adequately established for compliance with upper-tier requirements. Due to inactivity, there was no objective evidence to determine continued implementation and effectiveness of the procedural requirements. 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 reviewed the following CCP documents/procedures as they relate to AK to determine the degree to which they adequately address applicable upper-tier requirements:

- CCP-PO-001, Rev. 23, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- CCP-QP-042, Rev. 3, *CCP Project Level Training and Qualification*
- CCP-QP-005, Rev. 28, *CCP TRU Nonconforming Item Reporting and Control*
- CCP-QP-008, Rev. 28, *CCP Records Management*
- CCP-QP-010, Rev. 34, *Document Preparation, Approval, and Control*
- CCP-QP-042, Rev. 3, *CCP Project Level Training and Qualification*
- CCP-QP-002, Rev. 48, *CCP Training and Qualification Plan*
- CCP-TP-001, Rev. 23, *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. 32 & 33, *Quality Assurance Independent Assessment Program*
- CCP-TP-500, Rev. 17, *CCP Remote-Handled Waste Visual Examination*
- CCP-TP-506, Rev. 6, *CCP Preparation of the RH TRU Waste AK Characterization Reconciliation Report*

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

The audit team participated in the recertification audit A-22-16 by evaluating the AK record for S5000 RH TRU mixed waste debris stream AERHDM and an initial certification audit for S5000 CH mixed waste debris stream AECHDM.01. The RH waste stream has been generated in the Alpha Gamma Hot Cell Facility (AGHCF) and the K Wing Hot Cells at ANL. The CH waste stream has been generated at a number of facilities at the ANL.

The audit was conducted in accordance with the latest revisions of the WIPP WAP, WCPIP, and WAC, along with relevant CCP implementing procedures. A review of available Enhanced AK Products (EAKPs) as described in Appendix H of the WAC was conducted. Checklists included WAP-driven C6-1 and C6-2 checklists and applicable

WCPIP checklists. These have been populated with objective evidence (OE) reviewed and compiled to demonstrate compliance with each of the applicable requirements.

The RH waste stream was first examined by a CBFO audit team in 2006 and originally consisted of forty-four 30-gallon drums of debris waste from the AGHCF. Subsequently, the waste stream was expanded with the packaging of additional debris drums and fuel examination waste (FEW) from the AGHCF and the K Wing hot cells along with solidified liquid waste in the K Wing that was consolidated, sampled, solidified, and incorporated into K Wing debris waste containers. Repatriated waste involved waste packages stored outside of the AGHCF that were determined through AK records to qualify as part of the AERHDM waste stream. These containers were then inserted into the AGHCF where they were opened, sorted, and repackaged. Recent activities in the AGHCF have been focused on cleanup; that is, decontamination and decommissioning (D&D).

The AK Summary Report (AKSR), *CCP AK Summary Report for Argonne RH Debris Waste*, CCP-AK-ANLE-500, Rev. 13, was re-examined along with the latest WSPF and attachments. The AKSR, *CCP AK Summary Report for Argonne National Laboratory Contact-Handled Transuranic Waste from Facility Maintenance and Laboratory Operations*, CCP-AK-ANLE-002, Rev. 0, was also examined in detail to assure compliance with all upper-tier and CCP requirements. In addition, the audit team examined or re-examined the latest revisions to all of the AK attachments for both waste streams, as applicable, to confirm continued support of the required AK elements:

- 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 the waste material parameter weight estimates
- Attachment 7- Radionuclides List along with AK/NDA memo for the CH waste stream
- Attachment 8- Waste Container List. This attachment is a compilation of the waste containers currently in the waste stream and includes Container Evaluation Memorandums. These memorandums document the review done by the CCP Acceptable Knowledge Expert (AKE) of waste containers received from ANL to assure that they have an AK record that demonstrates they are part of the AERHDM or AECHDM.01 waste stream. The latest Container Evaluation Memorandums were reviewed. Attachment 8 was updated for the previous audit to reflect all containers in the waste stream (708), consisting of those that have been emplaced and the population onsite awaiting emplacement (166). AK Source Document C8003 was developed to project future generation which, for the RH waste stream, was anticipated to be fourteen 30-gallon containers or

less. Four of these containers were added to the waste stream since the previous audit. Source Document C8003 also provides the expected number of containers for the CH waste stream AECHDM.01 from repackaging the current inventory. That number is two hundred 55-gallon drums of CH TRU waste.

The WAP-required traceability exercise was performed for three drums of AGHCF RH debris. The traceability exercise included an examination of relevant VE BDRs; DTC BDRs; an IDC database screen printout for each container; a copy of the most recent AK Container Tracking Spreadsheet; relevant Container Evaluation Memorandums; and ANL WMO-195 and WMO-195A waste container input forms for these individual containers, along with other relevant generator documentation. The audit team confirmed appropriate use of the scaling factors in examination of the relevant DTC BDRs. The audit team also initiated a traceability exercise on the four containers of CH debris currently in the inventory and completed a review of comparable data as listed above. However, no NDA BDRs were available for review during the audit, leading to a finding of indeterminate for that requirement

For the RH waste stream, the audit team also reexamined the AK record and compiled objective evidence that demonstrated compliance with the requirements of the WCPIP. Documents reviewed included the AK Summary Report listed above and the Radiological Characterization Technical Report, CCP-AK-ANLE-501, Rev. 11. A Characterization Reconciliation Report (CRR) prepared for the most recent shipment of shielded containers to the WIPP was reexamined, along with the WCPIP-compliant AK Accuracy Report. Finally, on the WAP/WAC requirements list, a Waste Stream Characterization Checklist and accompanying Characterization Information Summary (CIS) for the latest lot of shielded containers were reexamined.

Other AK documentation examined and compiled as objective evidence for both the RH and CH waste streams included, as relevant, a WAP-compliant AK Accuracy Report and examples of the resolution of AK discrepancies in the AK record.

With respect to evaluation of the EAKPs in compliance with CCP AK procedure CCP-TP-005, Rev. 32, *CCP Acceptable Knowledge Documentation*, and revision 10 of the WAC, DOE/WIPP-02-3122, *TRU Waste Acceptance Criteria for the WIPP*, Appendix H, the audit team examined in detail those EAKPs that were available as listed below. It should be noted that the RH AK Tracking Spreadsheet was utilized extensively during the review of all RH EAKPs to assure appropriate documentation of individual EAKPs on a container-by-container basis. With the exception of a compliant Interface Waste Management Documents List, no other EAKP has been approved for waste stream AECHDM.01

Interface Waste Management Documents List (IWMDL)

The audit team reviewed IWMDL attachment 9 documents developed and maintained since the previous audit for waste streams AERHDM and AECHDM.01. The review in each case included an examination of the attachment 9 for each of the four quarters of the calendar year, or associated email documentation, to assure that the requirement

for a quarterly review of the processes and procedures listed on the IWMDL took place. In addition, the latest copy of relevant AK Source Document Summary attachment 3's for each of the processes and procedures that had been revised, added, or deleted was examined to assure the potential impacts were properly identified and other procedural requirements had been followed.

Chemical Compatibility Evaluation (CCE)

The CCE001 document for waste stream AERHDM was reexamined by the audit team, including a discussion of the justification for placing chemicals or materials on attachment 1, *Chemicals and Materials of Concern*, and attachment 3, *Insignificant Trace Chemicals and Materials*. The team also examined documentation from the CBFO reviews of the CCE and the CBFO approval letter, along with CBFO Form 4.15-2, *Chemical Compatibility Evaluation Checklist*. Additional supporting documentation re-reviewed included a copy of the Attachment 1, SPM Chemical Compatibility Evaluation Memorandum Review, from CCP-TP-200, *Enhanced Acceptable Knowledge Review*.

Regarding waste stream AECHDM.01, a CCE designated as CCE02 has been prepared that provides a placeholder until the complete CCE has been reviewed and approved by the CBFO. It lists the chemicals and materials that will be considered in the CCE along with supporting AK Source Documents. It was reviewed by the audit team and will be included as objective evidence

Acceptable Knowledge Assessment (AKA)

An AKA must be performed for each new waste stream and existing waste streams with unshipped containers. The primary focus of the AKA is 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 assesses the specific management of other potentially incompatible or reactive materials generated at each site (e.g., reactive metals, nitrate salts). The initial AKA for waste stream AERHDM, AKA001, dated 12/16/2016, was reexamined by the audit team, including the specific container listing covered by and attached to the AKA. Four addendums to AKA001 were also reexamined. The AKA checklists developed by the SPM in accordance with CCP-TP-200, *Enhanced Acceptable Knowledge Review*, Rev. 7, were re-reviewed and compiled as objective evidence in support of the AKA.

Basis of Knowledge (BOK)

With respect to the BOK EAKP dealing with the presence of oxidizing chemicals in the waste stream, the details of specific container contents in the AK record from packaging or repackaging activities were able to demonstrate that there are no oxidizing chemicals in three current sub-populations of the existing AERHDM waste stream totaling 177 containers and, thus, these containers are exempt from the BOK requirements. A copy of the BOK exemption memo BOK001, along with three addendums, was reexamined and compiled as objective evidence.

The audit team also reexamined a BOK memo designated as BOK002. This dealt with the six waste containers in which absorbent was blended with zeolite as noted above. Each of the criterion in DOE/WIPP-17-3589, Rev. 1, *Basis of Knowledge for Evaluating Oxidizing Chemicals in TRU Waste*, was addressed, and a demonstration of compliance presented. Completion of this BOK process allowed these containers to be emplaced. In addition, an addendum 1 to BOK002 was reviewed that addressed compliance with the BOK procedure for the five containers of K Wing debris that included consolidated, solidified liquids in containers that represented less the 50% by volume of the waste, thus qualifying it as debris. A second addendum was added to BOK002 on 8/17/2021 that addressed three containers of AERHDM waste with dry rags and mop heads that were determined to be compliant with the BOK procedure. This addendum was also examined by the AK audit team.

Acceptable Knowledge Briefings

Another EAKP identified in the WAC, Appendix H, is the AK Briefing Package that is prepared and given to appropriate personnel when there is a new AKSR or a revision to an existing AKSR. This requirement does not apply to this audit since the AKSR was not revised since the previous audit.

The audit team reviewed training records for five AKEs and three SPMs who currently participate in characterization activities for the ANL/CCP. The audit team also reviewed BDRs, discrepancy resolutions (DRs) AKAs, and BoK documents. 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.

One QA audit, *NWP Quality Assurance Audit I21-13*, 11/21, evaluated the adequacy and effective implementation of the CCP QA Program throughout the complex. While this audit did not specifically cover AK, it does show that the ANL/CCP program is continuously monitored for quality improvements. No concerns related to the QA aspects of AK were observed during this recertification audit.

The procedures reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for RH TRU SCG S5000 debris waste are adequately established for compliance with upper-tier requirements, satisfactorily implemented, and effective in achieving the desired results. The procedures reviewed and objective evidence assembled and evaluated during the audit, provided evidence that the applicable requirements for CH TRU SCG S5000 debris waste are adequately established for compliance with upper-tier requirements, but indeterminate with respect to the implementation and effectiveness of those requirements since the traceability exercise could not be completed. No WAP-affecting or non-WAP-affecting concerns in the area of AK were identified.

5.5.3 Table C6-3, Radiography Checklist

Table C6-3, Radiography Checklist, is not applicable to the ANL/CCP waste characterization and certification activities.

5.5.4 Table C6-4, Visual Examination Checklist

The audit team evaluated the adequacy, implementation, and effectiveness of ANL/CCP activities to characterize and certify RH and CH TRU SCG S5000 debris waste using the VE characterization process. The audit team reviewed the following CCP VE procedures to determine the degree to which they adequately address upper-tier requirements:

- CCP-QP-002, Rev. 47 & 48, *CCP Training and Qualification Plan*
- CCP-QP-043, Rev. 6, *CCP Operations Level Training and Qualification*
- CCP-TP-500, Rev. 17, *CCP Remote-Handled Waste Visual Examination*
- CCP-TP-113, Rev. 24, *CCP Standard Visual Examination*
- CCP-TP-163, Rev. 4, *CCP Evaluation of Waste Packaging Records for Visual Examination of Records*

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

The ANL/CCP has not performed VE of records utilizing CCP-TP-163 since the previous recertification audit (A-21-24). The ANL/CCP uses the two-operator method when performing VE characterization of waste. Visual Examination is performed by two qualified operators, where waste is visually examined and placed in containers. The audit team interviewed one VEE and one VE Operator/Independent Technical Reviewer (VEO/ITR). The audit team also examined the 2021 and 2022 VE operational logbooks (CCP-RH-ANL-VE-04, CCP-RH-ANL-VE-05, CCP-CH-ANL-VE-02, and CCP-CH-ANL-VE-01) and verified all logbook entries were logged correctly and reviewed by the VPM as required. Logbook evaluations confirmed that current revisions of associated procedures and the AK Summary Reports, CCP-AK-ANLE-500 (RH) and CCP-AK-ANLE-002 (CH), are verified prior to performing VE operations.

The audit team examined RH VE BDR ANLRHVE21001, which was generated from operations performed in the AGHCF in building 212, room F-110. The audit team observed VE of indirect load RH container 1553 at the AGHCF to verify implementation and compliance with the requirements for documenting VE activities, as stipulated in CCP-TP-500.

The audit team examined the following CH VE BDRs generated from CH operations performed in building 306, room A-160, to verify implementation and compliance with the requirements for documenting CH VE activities, as specified in CCP-TP-113:

- AEVECH0001
- AEVECH0002
- AEVECH0003
- AEVECH0004

The BDRs were verified to be complete and accurate, and found to be in compliance with all applicable procedural requirements. The audit team performed a field evaluation of the CH VE process in building 212, room A-160, and observed VE of newly generated waste from a noncertified process being performed on CH container # 2202031005. The audit team verified implementation and compliance with the requirements for documenting VE activities as stipulated in CCP-TP-113. The audit team verified operator aid CCP-ANL-VE-OA, Rev. 1 (ANL Packaging Weights for VE). The audit team also verified filter torque wrench 0719501292 calibration due date 1-10-23 and bolt torque wrench 0819105039 calibration due date 1-10-23.

The audit team examined the training records for nine VEOs/ITRs, and confirmed the appointment of three ANL/CCP VEEs. The audit team verified VEOs are current with training based on the LOQI dated 7/26/22. The audit team verified that VEOs, ITRs, and the VEEs were appropriately trained and qualified as required.

The audit team also verified that no NCRs in the area of VE were generated since the last audit (A-21-24).

The procedures reviewed and objective evidence assembled provided evidence that the applicable requirements for VE characterization of RH and CH TRU SCG S5000 debris waste 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 VE were identified.

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 Radiological Characterization (Dose-to-Curie and Dimensional or Gravimetric Measurement)

The audit team evaluated the continued adequacy, implementation, and effectiveness of the DTC methods used at the ANL by the CCP to characterize waste stream

AERHDM. The audit team assessed, through review of a supplied BDR and records, the actual measurement of the dose rate and the subsequent determination of required waste container data. For DTC, the dose rate is defined as the external exposure rate from gamma-ray-emitting radionuclides within the waste matrix, predominately Cesium-137 (Cs-137). The application of the DTC methodology at the ANL to characterize RH TRU waste was previously evaluated by the CBFO as part of Audit A-21-24. The Dimensional or Gravimetric (DG) methodology described in CCP-TP-513, *CCP Procedure for Dimensional or Gravimetric Measurements for Radiological Characterization of Remote-Handled Transuranic Waste*, has been evaluated by CBFO through audits in the past, including last year's A-21-24, but the method has not been used for several years and ANL does not anticipate using the method in the future. Therefore, the equipment used for DG measurement and any other objective evidence that the audit team would review were not available during the audit, and the adequacy, implementation, and effectiveness of the controls over future use of the DG method are indeterminate.

Based on a review of the current revisions of CCP procedures, reports, and waste data provided prior to and during the audit, checklists were prepared and used to evaluate the following:

- Proper development and documentation of the waste stream's AK as documented in an Acceptable Knowledge Summary Report (a "500" report)
- Proper development, implementation, and products were produced from a Radiological Characterization Technical Report (a "501" report)
- Waste stream AERHDM is adequately addressed in a Waste Certification Plan for 40 Code of Federal Regulations (CFR) Part 194 Compliance (a "502" report)
- Development of radionuclide ratios through sampling and/or modeling
- Development of the relationship between the measured dose or exposure rate and the activity of Cs-137
- Measurement of the external dose/exposure rate of the waste/fuel segments
- Calculation of the radionuclide activities and other derived radiological quantities and associated uncertainties
- Any significant program changes or deviation since Audit A-21-24
- Results of applying the DTC methodology to characterize waste fuel segments since Audit A-21-24
- Determination of the number of containers examined, completed BDRs, and BDRs that had been through project-level review that were generated since Audit A-21-24
- Completed BDRs to ensure data are reported and reviewed as required; work is being accomplished under controlled conditions; records generated, maintained, and stored

- Data storage and retrievability
- Personnel qualification and training of DTC/ITR operators
- Continued operability and condition of the equipment used in the DTC measurement method since Audit A-21-24

The following procedures and documents were reviewed to verify compliance with applicable upper-tier requirements:

- CCP-TP-504, Rev. 22, *CCP Dose-to-Curie Survey Procedure for Remote-Handled Transuranic Waste*
- CCP-TP-512, Rev. 7, *CCP Remote-Handled Waste Sampling*
- CCP-AK-ANLE-500, Rev. 13, *CCP Acceptable Knowledge Summary Report*
- CCP-AK-ANLE-501, Rev. 11, *CCP RH TRU Radiological Characterization Technical Report*
- CCP-AK-ANLE-502, Rev. 7, *CCP RH TRU Waste Certification Plan for 40 CFR Part 194 Compliance.*

The results of the review confirmed that the procedures and documents are adequately established for compliance with upper-tier requirements.

The source of the RH waste at the ANL was the examination of fuel pins and reactor materials in the AGHCF and the K Wing in the Chemical Technology Building. Scaling factors that express the radionuclide content relative to a measured dose or exposure rate were developed from information about these fuel pins and reactor materials in the AK record and from sampling. This information included the fuel's initial composition and irradiation history. The ORIGEN2.2 computer code was used to model the burn-up of nuclear fuel, including the decay and in-growth of progeny radionuclides to arrive at a radionuclide inventory.

In the past, to confirm the ORIGEN2.2 modeling results, radionuclide ratios were calculated for approximately 400 fuel pins that were also examined at the Los Alamos National Laboratory (LANL) using mass spectrometry. The modeled values were compared to the mass spectrometry results. Agreement between the ratios calculated using ORIGEN2.2 and those measured by mass spectrometry demonstrate that ORIGEN2.2 is an appropriate computer code for calculating the radionuclide ratios for irradiated fuel pins with fuel compositions and irradiation histories similar to those examined at LANL.

The audit team verified that the example spreadsheet presented in CCP-AK-ANLE-501 is accurate in the example presentation of the calculation of radionuclide and other required transportation quantities. The audit team was provided with a copy of the

AERHDM Dose-to-Curie Spreadsheet (SCO 1154 AERHDM Dose-to-Curie Spreadsheet.xlsx, Version 1, Addendum 2). The audit team thoroughly reviewed the spreadsheet for accuracy and technical adequacy. The spreadsheet consists of three tabs: DTC Calcs, Constants, and Uncertainties, which contain approximately 133, 57, and 7 formulas or conditional statements, respectively, that were verified to be accurate and technically adequate. Many of the calculations use data from additional sources, such as the TRAMPAC. The audit team did not verify the accuracy of data from these outside sources. This review and verification serve only as a snapshot in time. The formulas in the spreadsheets may be modified at any time (in compliance with software QA requirements) and the constants data may be modified or updated.

The DTC measurement apparatus was removed from the Building #331-Shell due to operational issues and repairs being performed with the overhead crane and relocated to the gravel parking lot in the 398 Yard prior to Audit A-21-24, and that remains the operational area for this audit. The audit team carefully examined and observed this substantially new process for waste handling and placement on the DTC measurement fixture. In lieu of the overhead crane, the containers were moved by forklift out of the 331-Shell storage area, placed near the measurement fixture, and then lifted and placed onto the turntable using an off-road telehandler boom forklift (JLG Model 1044C-54 Series II) fitted with a load sensor (scale) (Trescal Model 3360 Challenger 2, Serial #60679/47040, Argonne ID #XC0407) and vaculift.

The audit team consisted of two members so that one could focus on the dose measurement and data acquisition while the other was able to observe this new and unique process for drum handling and placement. In the measurement apparatus, the exposure rate, attributed entirely to Cs-137, is measured four times at a distance of 1.0 meter from the waste containers. The audit team interviewed the lead operator about the set-up and calibration of the measurement apparatus for performing DTC. The audit team verified calibration of the load scale and the dose rate measurement probe (Thermo Electron Corporation Model FHZ 612 Gamma HX, Argonne ID #XCO677) and associated cable (Tag number 509345). The ANL is unique in having the “weight of record” for the waste container obtained in the DTC process. In all other waste characterization activities at all other sites, the “weight of record” is obtained in another process (typically VE).

The audit team verified the calibration of the load sensor and observed its use according to requirements. The exposure rate is measured by coupling the calibrated probe and cable described above to a survey meter. The audit team observed this activity to verify proper execution. All measurements performed in the 398 Yard have been low dose drums (for As Low As Reasonably Achievable [ALARA] reasons) and, therefore, only the FHZ 612 probe has been used. The container was rotated 90 degrees successively between each of the four measurements. The average measured dose or exposure rate for each 30-gallon waste container and associated scaling factors is used to estimate the activity of individual radionuclides and other derived radiological quantities and associated uncertainties.

The audit team observed the DTC process applied to container 1460. As part of verifying the implementation of CCP-TP-504, Rev. 22, the audit team observed and verified the collection, calculation, and recording of measurement control data on Attachment 1 – Measurement Control Report, and obtained a draft copy as objective evidence. Additionally, the audit team observed and verified the collection, calculation, and recording of container data on Attachment 2 – Container Data Sheet, and obtained a draft copy that documents a background dose rate of 0.043 mR/hr and the four container dose rates (90.5, 86.4, 108, and 94.7 mR/hr) as objective evidence, and a draft Attachment 10 – Duplicate Container Data Sheet that documents the four container dose rates (89.6, 83.7, 105, and 93.5 mR/hr).

The audit team interviewed DTC personnel, and examined electronic copies of reports, records, and measurement results.

Since Audit A-21-24, one DTC BDR has been completed through project level review:

- ANLRHDTTC21002

No NCRs were generated as a result of this BDR. The audit team thoroughly reviewed the BDR and found that it was properly developed, completed, and reviewed in accordance with all QA and technical requirements.

The audit team reviewed the qualification cards for all CCP personnel listed on the LOQI as DTC operators/ITRs at the ANL. The qualifications were found to be in compliance with the requirements of CCP-QP-043, Rev. 6. The audit team interviewed two of the four operators and found their knowledge and experience to be adequate for performing the activities for which they are qualified.

The audit team reviewed DTC logbook CCP-RH-ANL-DTC-04 (2021), provided electronically, and DTC logbook CCP-RH-ANL-DTC-05 (2022), in process. Logbook entries and required reviews were found to comply with CCP-PO-005, Rev. 31, *CCP Conduct of Operations*. The logbook entries were found to be complete, accurate, and legible with sufficient detail. Reviews were performed and documented as required.

Control of software (primarily the dose-to-curie conversion spreadsheet) was found to have been implemented and controlled in accordance with the requirements in CCP-QP-022, Rev. 19, *CCP Software Quality Assurance Plan*. The audit team obtained a copy of the spreadsheet and validated a sample of the calculations to verify the technical adequacy of the spreadsheet.

The audit team observed that the recommendation made following audit A-21-24 was implemented and improved the confidence in the reliability of the measurement instrument and the subsequent data analysis.

The procedures reviewed and objective evidence assembled provided evidence that the applicable requirements for DTC characterization of RH TRU SCG S5000 debris waste remains adequately established for compliance with upper-tier requirements. The processes for characterizing RH TRU SCG S5000 debris waste remain marginally (the confidence in the conclusions of the audit are directly correlated with the amount of objective evidence available to demonstrate implementation and effectiveness) satisfactorily implemented and effective in achieving the desired results. No non-WAP-affecting concerns in the area of DTC were identified.

5.6.2 Container Management

The audit team reviewed the implementing procedures for container management (CM) activities conducted at the ANL by the CCP to determine the degree to which they adequately address applicable upper-tier requirements. The audit team verified that CCP conducts CM activities for RH waste using procedure CCP-TP-509, Rev. 7, *CCP Remote-Handled Transuranic Container Tracking*, and for CH waste using procedure CCP-TP-068, Rev. 12, *CCP Standardized Container Management*. The results of this review confirmed that the procedures continue to adequately address upper-tier requirements.

The audit team interviewed the VPM and determined that ANL personnel primarily conduct the CM activities at the ANL; however, CCP personnel do observe ANL personnel conducting CM activities, and perform limited CM activities utilizing CCP-TP-509 in Building #331-Shell at the ANL. The VPM verifies containers are on the Acceptable Knowledge Tracking Spreadsheet (AKTSS) as well as the site-specific tracking spreadsheet. The audit team verified containers are being stored in the facility where appropriate, and adequate inventory controls are in place to manage the containers. Verification activities included confirmation that administrative controls are used to track containers and characterization status to comply with ALARA requirements. During field observations in building 306, the audit team verified the calibration information for the scale used for weighing CH containers, which was scale model# 480Plus-2A, serial ID# 000030849, calibration due date of 8-7-22.

The procedures reviewed 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-affecting concerns in the area of container management were identified.

5.6.3 Nondestructive Assay

The audit team evaluated the adequacy, implementation, and effectiveness of the NDA system used at ANL/CCP as part of the NDA characterization process for CH TRU SCG S5000 debris waste. The audit team conducted interviews with responsible NDA 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. 19, *CCP NDA System Data Reviewing, Validating, and Reporting Procedure*
- CCP-TP-058, Rev. 8, *CCP NDA Performance Demonstration Program*
- CCP-TP-076, Rev. 6, *CCP Operating the Mobile ISOCS Large Container Counter Using NDA 2000*
- CCP-TP-077, Rev. 4, *CCP Calibrating the Mobile ISOCS Large Container Counter Using NDA 2000.*

The results of the review confirmed that the procedures listed above adequately address the WIPP WAC and flow down from QAPD requirements.

The audit team assessed the Mobile ISOCS Large Container Counter #5 (MILCC5) located in a trailer in the 398 Yard at the ANL. The CBFO has not previously evaluated the MILCC5 at the ANL.

The MILCC5 systems consist of two gamma spectrometers, each mounted on a cart and aligned 180 degrees apart, aiming at the waste container with a current capability of measuring the gamma-ray fluence in containers consisting of 55-gallon drums and Standard Waste Boxes (SWBs) from two calibrated positions known as NEAR (33.5") and FAR (72") positions for drums and a single 36" position for SWBs, depending on gamma exposure rates. The two gamma spectrometers on each system acquire spectra for direct quantification of gamma-emitting radionuclides as well as provide isotopic ratios for plutonium isotopes analyzed through Multi-Group Analysis (MGA) or Fixed-energy Response function Analysis with Multiple efficiencies (FRAM) software. The gamma spectrometers use a multi-curve efficiency calibration to compensate for variations in waste matrix density. The MILCC5 system should be able to assay SCG S5000 debris waste contained in 55-gallon drums or SWBs.

Based on a review of the current revisions of ANL/CCP procedures provided prior to and during the audit for operations involving the MILCC5, checklists were prepared and used to evaluate the following:

- The system's 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 assayed
- Successful participation in the CBFO-sponsored NDA Performance Demonstration Program (PDP)

- Completed BDRs to ensure data are reported, analyzed, and reviewed as required by implementing procedures
- Data protection, storage, and retrievability
- Personnel qualification and training for Operators/ITRs, Subject Matter Expert/On-the-Job Training, SPMs, and NDA Expert Analysts.

At the time of the audit, CCP had not finalized and issued the calibration report for the MILCC5. Calibration measurements were just beginning at the time of the audit. Because the MILCC5 has not yet been calibrated, the system could not participate in the CBFO-sponsored PDP. Additionally, no assay data has been collected so no BDRs have been generated or reviewed. Likewise, quality control measurements have not been performed and statistical limits have not yet been set. No NCRs have been issued nor calibration verifications performed on the MILCC5.

The audit team did observe that the software versions installed appear consistent with software versions implemented at other CCP sites, though a software information listing was not available.

The audit team did observe that the MILCC5 operators were operators from other CCP sites where the operators are qualified to operate MILCC units.

The audit team did receive a copy of the total measurement uncertainty document (CI-MILCC5-TMU-1001, Rev. 0, *CCP Mobile ISOCS Large Container Counter 5 (MILCC5) Total Measurement Uncertainty Report*) for the MILCC5 on the Monday of the audit week.

The procedures reviewed and objective evidence assembled provided evidence that the applicable requirements for NDA characterization of CH TRU SCG S5000 debris waste are adequately established for compliance with upper-tier requirements. The implementation and effectiveness of those procedures and controls is indeterminate. No non-WAP-affecting concerns in the area of NDA were identified.

6.0 CARs, CDAs, OBSERVATIONS, AND RECOMMENDATIONS

6.1 Corrective Action Reports

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

CAQ – An all-inclusive term used in reference to any of the following: failures, malfunctions, deficiencies, defective items, nonconformances, and technical inadequacies.

Significant CAQ – 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

No non-WAP-affecting CARs were identified during the audit.

6.2 Deficiencies Corrected During the Audit

During the audit, the audit team may identify CAQs. The Audit Team Leader (ATL) and the CBFO Quality Assurance Lead (QAL) will evaluate the CAQs to determine if they are significant. Once a determination is made that the CAQ is not significant, the ATL and QAL determine if the CAQ is isolated requiring only remedial actions and, therefore, can be corrected during the audit (CDA). Upon determination that the CAQ is isolated, the ATL and QAL will evaluate/verify any objective evidence/actions submitted or taken by the audited organization and determine if the condition was corrected in an acceptable manner. Once it has been determined that the CAQ has been corrected, the ATL and QAL classify the condition as a 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 and 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 this audit.

6.3 Observations

During the audit, the audit team may identify potential problems that should be communicated to the audited organization. The ATL and QAL 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 ATL and QAL classify 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

No non-WAP-affecting Observations were identified during the audit.

6.4 Recommendations

During the audit, the audit team may identify suggestions for improvement that should be communicated to the audited organization. The ATL and QAL 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 ATL and QAL classify the condition appropriately.

No non-WAP-affecting Recommendations were identified during the audit.

6.5 Strengths

During the audit, the audit team may identify a practice or performance that exceeds requirements, expectations, or industry standards. The ATL and QAL evaluate these conditions and classify them as Strengths using the following definition:

Strength – When a practice or performance is identified that exceeds requirements, expectations, or industry standards in a beneficial, safe, efficient, and effective manner, it may be considered a Strength. Some organizations refer to this as a Good Practice. One way to determine if a process or practice warrants being identified as a Strength is to ask: Would one recommend that other organizations benchmark this practice to improve performance?

No Strengths were provided to CCP management during the audit.

7.0 LIST OF ATTACHMENTS

- Attachment 1: Meeting Attendees and Personnel Contacted During Audit A-22-16
- 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 Evaluated

MEETING ATTENDEES AND PERSONNEL CONTACTED DURING AUDIT A-22-16				
NAME	TITLE/ORG.	PRE-AUDIT MEETING	CONTACTED DURING AUDIT	POST-AUDIT MEETING
David Biswell	Observer, NMED	X	X	X
Porf Martinez	Observer, NTP	X	X	X
Noreen Brachmann	Facility Representative, DOE/ASO	X		X
Morgan Luckey	Observer/NTP Waste Certification Manager, CBFO	X	X	X
Rock Aker	DOE/ASO Deputy Site Manager	X		X
Richard Kantrowitz	NWP/CCP Technical Support	X	X	X
Creta Kirkes	WCO, NWP/CCP		X	
Dan McGann	Shift Superintendent TRU Waste Operations, ANL	X	X	X
Mauricio Burgos	ANL Building 306 Facility Manager	X		X
Dave Moody	SPM, NWP/CCP	X	X	X
Joe Cooney	Health Physics, Argonne Waste Management	X		
Dan Pancake	TRU Program Manager, ANL	X		X
Kevin Peters	AK Expert, NWP/CCP	X	X	X
Cynthia Rock	NWM Division Director, ANL/NWM	X		X
Wesley Root	VPM, NWP/CCP	X	X	X
Sheri Saiz	QA Specialist, NWP	X		X
Craig Simmons	RH Manager, NWP/CCP	X	X	X
Jimmy Smith	AGHCF Manager, NWM	X		X
Scott Smith	AK Expert, NWP/CCP	X	X	X
Mark Sreniawski	Health Physicist, ANL	X		X
Peter Washburn	Facility Representative, DOE/ASO	X		X
Bob Leppink	Deputy Division Director, NWM	X		X
Morgan Luckey	Observer/Waste Certification Specialist, CBFO	X		X

MEETING ATTENDEES AND PERSONNEL CONTACTED DURING AUDIT A-22-16				
NAME	TITLE/ORG.	PRE-AUDIT MEETING	CONTACTED DURING AUDIT	POST-AUDIT MEETING
Jewell Yturralde	CCP Records Manager, TFE Records		X	
Gabriela Hinojos	CCP Records Custodian, TFE Records		X	
Tommy Mojica	VE Operator/VE Expert/NWP/CCP	X	X	
Veronica Ballew	NWP QA Manager, NWP QA		X	
Katie Gentry	NWP QA	X		
Daniel Wade	CCP Certification Manager, NWP		X	
William Riley	VE Operator, ANL/CCP		X	
Ricardo Aceves	Chief VE Technician, ANL/Nuclear Waste Management (NWM)		X	
Chris Mitok	Senior VE Technician, ANL/NWM		X	
Mat Racz	Assistant Field Manager, NWM		X	
Spencer Pattee	VE Operator, NWP/CCP	X	X	
Jorge Gonzales	SPM, CCP/NWP	X	X	
Patrick Floramo	Facility Manager 331, NWM	X		
Terri Groover	NDE Cognizant Engineer, CCP/NWP	X		
Kevin Haar	NDA Ass. Cognizant Engineer, CCP/NWP	X	X	
Joe Harvill	NDA Engineer, CCP/NWP		X	
Will Searcy	NDA Operator, NWP/CCP		X	
Carl Jenks	NDA Operator, NWP/CCP		X	
Stephanie Franks	Training Dept., NWP/CCP		X	

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

Personnel Qualification and Training	Stephanie Franks
Control of Nonconforming Items	Katie Gentry
Records	Jewell Yturralde
WIPP Waste Information System (WWIS Data Entry)	Creta Kirkes
Waste Certification/Project-Level Data V&V	Dave Moody Craig Simmons
Acceptable Knowledge	Kevin Peters Scott Smith Rich Kantrowitz Dave Moody
Visual Examination	Wes Root Tommy Mojica Craig Simmons Spencer Pattee William Riley Ricardo Aceves Chris Mitok

**Audit A-22-16
 Summary Table of Audit Results**

QA / Technical Elements	Concern Classification						QA Evaluation			Technical Evaluation
	CARs	CDAs	Obs	Rec	Strength	Adequacy	Implementation	Effectiveness		
Program Status/Program Changes/Interface						A	S	E		
C6 General QA Elements (NCRs, Quals. & Training, Records)						A	S	E		
C6 General QA Elements (WWIS/WDS)						A	S	E		
Acceptable Knowledge & Waste Certification *						A	S	I		
Project Level Data V&V						A	S	E		
Visual Examination						A	S	E		
Dose-to-Curie (DTC)						A	S	E		
Dimensional/Gravimetric Measurement (DG)						A	I	I		
Container Mgmt.						A	S	E		
Nondestructive Assay						A	I	I		
TOTALS	0	0	0	0		A	S	E		

***Indeterminate for CH AK traceability**

Definitions

- | | |
|--------------------|--|
| E = Effective | Obs – Observation |
| S = Satisfactory | Rec = Recommendation |
| I = Indeterminate | A = Adequate |
| M = Marginal | NA = Not Adequate |
| U = Unsatisfactory | Strength = Good practice that could be benchmarked |

WAP-Related Objective Evidence Reviewed During the Audit

The WAP-related objective evidence supporting Audit A-22-16 will be included in the shipping box(es) submitted with this report. Included in the shipping box(es) will be "Content Map" describing the location (using color coding) and identity of all required objective evidence supporting the performance of the audit.

Audit A-22-16			
TABLE OF AUDITED PROCEDURES			
	Procedure No.	Rev.	Procedure 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-005	31	CCP Conduct of Operations
4.	CCP-PO-500	9	CCP/ANL RH TRU Waste Interface Document
5.	CCP-QP-002	47 & 48	CCP Training and Qualification Plan
6.	CCP-QP-002	48	CCP Training and Qualification Plan
7.	CCP-QP-005	28	CCP TRU Nonconforming Item Reporting and Control
8.	CCP-QP-008	28	CCP Records Management
9.	CCP-QP-010	34	CCP Document Preparation, Approval, and Control
10.	CCP-QP-022	19	CCP Software Quality Assurance Plan
11.	CCP-QP-028	17	CCP Records Filing, Inventorying, Scheduling, and Dispositioning
12.	CCP-QP-042	3	CCP Project Level Training and Qualification
13.	CCP-QP-043	6	CCP Operations Level Training and Qualification
14.	CCP-TP-001	23	CCP Project Level Data Validation and Verification
15.	CCP-TP-002	29	CCP Reconciliation of DQOs and Reporting Characterization Data
16.	CCP-TP-005	32	CCP Acceptable Knowledge Documentation
17.	CCP-TP-030	40	CCP CH TRU Waste Certification and WWIS/WDS Data Entry
18.	CCP-TP-048	19	CCP NDA System Data Reviewing, Validating, and Reporting Procedure
19.	CCP-TP-058	8	CCP NDA Performance Demonstration Program
20.	CCP-TP-068	12	CCP Standardized Container Management
21.	CCP-TP-076	6	CCP Operating the Mobile ISOCS Large Container Counter Using NDA 200
22.	CCP-TP-077	4	CCP Calibrating the Mobile ISOCS Large Container Counter Using NDA 2000
23.	CCP-TP-113	24	CCP Standard Visual Examination
24.	CCP-TP-163	4	CCP Evaluation of Waste Packaging Records for Visual Examination of Records
25.	CCP-TP-200	7	Enhanced Acceptable Knowledge Review

Audit A-22-16			
TABLE OF AUDITED PROCEDURES			
	Procedure No.	Rev.	Procedure Title
26.	CCP-TP-500	17	CCP Remote-Handled Waste Visual Examination
27.	CCP-TP-504	22	CCP Dose-to-Curie Survey Procedure for Remote-Handled Transuranic Waste
28.	CCP-TP-506	6	CCP Preparation of the Remote-Handled Transuranic Waste Acceptable Knowledge Characterization Reconciliation Report
29.	CCP-TP-509	7	CCP Remote-Handled Transuranic Container Tracking
30.	CCP-TP-512	7	CCP-RH-Waste-Sampling
31.	CCP-TP-513	5	CCP Procedure for Dimensional or Gravimetric Measurements for Radiological Characterization of Remote-Handled Transuranic Waste
32.	CCP-TP-530	12	CCP RH TRU Waste Certification and WWIS/WDS Data Entry
33.	WP 13-QA.03	32 & 33	Quality Assurance Independent Assessment Program
34.			<p>Procedures CCP-PO-043, <i>CCP Interface Document Preparation</i>, CCP-PO-045, <i>CCP Waste Management Field Observations</i>, CCP-PO-047, <i>CCP Training and Qualification Program Document</i>, CCP-QP-016, CCP Control of Measuring and Testing Equipment, CCP-QP-017, <i>CCP Identification and Control of Items</i>, CCP-QP-037, <i>CCP Calculations</i>, CCP-QP-041, <i>CCP Job Needs Analysis and Design</i>, and CCP-TP-515, <i>CCP Remote Handled Radiological Characterization Technical Report</i> were included in ONTP Scope memorandum CBFO:ONTPWCD:KEP:VV:22:0499:UFC 5900.00, dated June 9, 2022; but was not evaluated during this audit. These procedures are evaluated during a separate CCP QA All-Sites Audit or other respective assessment annually.</p> <p>WP 13-1, <i>Nuclear Waste Partnership LLC Quality Assurance Program Description</i>, CCP-TP-163, Rev. 4, <i>CCP Evaluation of Waste Packaging Records for Visual Examination of Records</i>, CCP-AK-ANLE-500, Rev. 13, <i>CCP Acceptable Knowledge Summary Report</i>, CCP-AK-ANLE-501, Rev. 11, <i>CCP RH TRU Radiological Characterization Technical Report</i>, CCP-AK-ANLE-502, Rev. 7, <i>CCP RH TRU Waste Certification Plan for 40 CFR Part 194 Compliance</i>, CCP-TP-068, Rev. 12, <i>CCP Standardized Container Management</i>, CCP-TP-058, Rev. 8, <i>CCP NDA Performance Demonstration Program</i> was not included in ONTP Scope memorandum CBFO:ONTPWCD:KEP:VV:22:0499:UFC 5900.00, dated June 9, 2022; but was evaluated during this audit.</p>

WIPP #	Process/Equipment Description	Applicable to the Following Waste Streams/Groups of Waste Streams
PREVIOUSLY APPROVED PROCESSES OR EQUIPMENT		
N/A	Acceptable Knowledge	Debris (S5000) – RH
N/A	Data Generation and Project Level Validation & Verification (V&V)	Debris (S5000) – RH
N/A	WIPP Waste Information System (WWIS)/Waste Data System (WDS)	Debris (S5000) – RH
8RHVE1	Visual Examination (VE) CCP-TP-500, <i>CCP Remote-Handled Waste Visual Examination</i> CCP-TP-163, <i>CCP Evaluation of Waste Packaging Records for Visual Examination of Records</i>	Debris (S5000) – RH
8RHVE2	Visual Examination (VE) of Newly Packaged RH Waste Drums CCP-TP-500, <i>CCP Remote-Handled Waste Visual Examination</i>	Debris (S5000) – RH
8DTC1	Radiological Characterization (Dose-to-Curie) CCP-TP-504, <i>CCP Dose-to-Curie Survey Procedure for Remote-Handled Transuranic Waste</i>	Debris (S5000) – RH
8RHGM1	Dimensional Measurement CCP-TP-513, <i>CCP Procedure for Dimensional or Gravimetric Measurements for Radiological Characterization of Remote-Handled Transuranic Waste</i>	Debris (S5000) – RH
N/A	Quality Assurance Program	Debris (S5000) – RH
NEW PROCESSES OR EQUIPMENT		

WIPP #	Process/Equipment Description	Applicable to the Following Waste Streams/Groups of Waste Streams
8MILCC5	<ul style="list-style-type: none"> - Mobile ISOCS Large Container Counter (MILCC) -Calibrated for 55-gallon drums and 12" Pipe Overpack Containers -Operation, calibration, and data validation procedures: CCP-TP-076, CCP-TP-077, and CCP-TP-048, respectively 	Debris (S5000)-- CH
8CHVE2	<p>Visual Examination (VE) technique to characterize the CH TRU Summary Category Group S5000 waste.</p> <p>Performance of the VE is described in procedure: CCP-TP-113, CCP Standard Visual Examination</p>	Debris (S5000)-- CH
DEACTIVATED PROCESSES OR EQUIPMENT		
NONE		