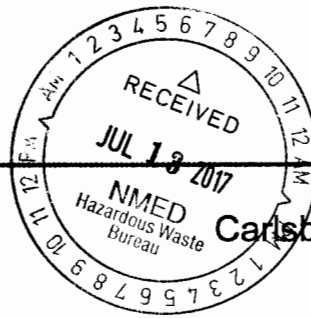


United States Government

memorandum

ENTERED

Department of Energy

Carlsbad Field Office
Carlsbad, New Mexico 88221

DATE: JUL 13 2017

**REPLY TO
ATTN OF:** CBFO:OQA:DSM:BA:17-1966:UFC 2300.00

SUBJECT: Interim Audit Report A-17-23, Characterization and Certification Activities for Contact-Handled and Remote-Handled Transuranic Waste

TO: Mr. James Malmo, DOE-ID

The Carlsbad Field Office (CBFO) conducted subject audit A-17-23 on June 13 – 15, 2017. The Interim Audit Report is attached.

The audit team concluded that Idaho National Laboratory (INL) Central Characterization Program (CCP) implementing procedures are adequate relative to the flow-down of the Waste Analysis Plan (WAP), Waste Acceptance Criteria (WAC), and CBFO Quality Assurance Program Document (QAPD) requirements. INL/CCP quality assurance requirements are satisfactorily implemented and effective in all areas. The Acceptable Knowledge (AK) process implementation of enhanced AK, as specified in the Waste Isolation Pilot Plant (WIPP) WAC Rev. 8, was evaluated by the audit team. The Basis of Knowledge document has not been issued by CBFO; therefore, the document implementation was not available for evaluation. The Generator Site Technical Review was not completed at the time of the audit. Until all enhanced AK requirements are implemented, the AK process has been deemed indeterminate with the exception of Waste Stream ID-RF-S3114 in Summary Category Group S3000. The WIPP Waste Information System (WWIS)/Waste Data System (WDS) data entry and waste certification processes were evaluated by the audit team. There was no objective evidence available for either data entry or waste certification due to lack of procedure implementation. Therefore, the WWIS/WDS process implementation and effectiveness have been deemed indeterminate. Other technical activities evaluated are satisfactorily implemented and effective in all areas of the INL/CCP certified program.

If you have any questions or comments concerning this audit, please contact me at (575) 234-7491.



Dennis S. Miehl
Senior Quality Assurance Specialist

Attachment

170714



Mr. James Malmo

-2-

JUL 13 2017

cc: w/attachment

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*ED denotes electronic distribution

U.S. DEPARTMENT OF ENERGY
CARLSBAD FIELD OFFICE

INTERIM AUDIT REPORT

OF THE

IDAHO NATIONAL LABORATORY
CENTRAL CHARACTERIZATION PROGRAM

FOR

TRU WASTE ACTIVITIES

IDAHO FALLS, IDAHO
AND CARLSBAD, NEW MEXICO

AUDIT NUMBER A-17-23

June 13 – 15, 2017



Prepared by:

James R. Schuetz

James R. Schuetz, CTAC
Audit Team Leader

Date:

7-13-17

Approved by:

Michael R. Brown

Michael R. Brown, Director
CBFO Office of Quality Assurance

Date:

7-13-17

1.0 EXECUTIVE SUMMARY

U.S. Department of Energy (DOE) Carlsbad Field Office (CBFO) Recertification Audit A-17-23 was conducted to evaluate the continued adequacy, implementation, and effectiveness of Idaho National Laboratory (INL) transuranic (TRU) waste characterization activities performed for the INL by the Nuclear Waste Partnership LLC (NWP) Central Characterization Program (CCP).

Activities were evaluated relative to the requirements of the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (HWFP), the CBFO *Quality Assurance Program Document* (QAPD), *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant* (WAC), and the *Remote-Handled TRU Waste Characterization Program Implementation Plan* (WCPIP) and the *Waste Isolation Pilot Plant Documented Safety Analysis* (DSA), Chapter 18.

The audit team evaluated characterization and certification activities for remote-handled (RH) Summary Category Groups (SCGs) S3000 solids and S5000 debris wastes including verification that a generator site technical review has been performed of the site processes. The contact-handled (CH) S3000 (homogeneous solids), S4000 (soils) and S5000 (debris) SCGs was also evaluated regarding completion of enhanced Acceptable Knowledge (AK) activities related to containers that have been previously certified. Specific technical and quality assurance (QA) elements audited are listed in section 2.1.

The audit was conducted at the INL/CCP facility near Idaho Falls, ID, and the NWP/CCP facilities in Carlsbad, NM, June 13 – 15, 2017. Overall, the audit team concluded that the INL/CCP technical and quality assurance (QA) programs evaluated were adequately established for compliance with upper-tier requirements and were satisfactorily implemented and effective in achieving the desired results. CBFO has not provided approved Basis of Knowledge (BOK) documents, as required by the Documented Safety Analysis (DSA), specifying when waste with oxidizing chemicals is acceptable; therefore, it was not available for evaluation during the audit. The audit team was unable to verify full implementation of the Enhanced AK required by the WAC and any waste certification activities; therefore, both AK and WIPP Waste Information System (WWIS)/Waste Data System (WDS) were deemed indeterminate.

During the audit, the team identified one condition adverse to quality (CAQ) resulting in the issuance of CBFO Corrective Action Report (CAR) 17-039 (see section 6.1). The CAR was issued under separate cover. One deficiency, isolated in nature and requiring only remedial corrective action, was identified and corrected during the audit (CDA) (see section 6.2). One Observation was identified during the audit (see sections 6.3). There were no Recommendations offered for management consideration.

2.0 SCOPE AND PURPOSE

2.1 Scope

Audit A-17-23 was conducted to evaluate the continued adequacy, implementation, and effectiveness of the INL/CCP TRU waste characterization and certification activities for RH SCGs S3000 homogeneous solids and S5000 debris wastes. Completion of enhanced AK activities for CH S3000 (homogeneous solids), S4000 (soils) and S5000 (debris) SCGs were also evaluated regarding activities that relate to previously certified containers. The following areas were evaluated:

General

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

Quality Assurance

- Quality Improvement/Nonconformance Reporting
- Personnel Qualification and Training
- Records

Technical Activities

- Project-level Data Verification and Validation (PL V&V)
- AK (including waste certification),
- Real-time Radiography (RTR)
- Visual Examination (VE)
- Dose-to-Curie (DTC)
- Container Management
- Transportation
- WWIS/WDS

The evaluation of INL/CCP TRU waste activities and documents was based on current revisions of the following documents:

- DOE/CBFO-94-1012 *Quality Assurance Program Document (QAPD)*
- Waste Isolation Pilot Plant Hazardous Waste Facility Permit NM4890139088-TSDF
- DOE/WIPP-02-3122, *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant, WAC*
- DOE/WIPP-02-3214, *Remote-Handled TRU Waste Characterization Program Implementation Plan, WCPIP*
- DOE/WIPP-07-3372, *Waste Isolation Pilot Plant Documented Safety Analysis (Chapter 18)*
- CCP-PO-001 *CCP Transuranic Waste Characterization Quality Assurance Project Plan,*

- CCP-PO-002 *CCP Transuranic Waste Certification Plan*,
- CCP-PO-501 *CCP/INL RH TRU Waste Interface Document*,
- CCP-PO-024 *CCP/INL Interface Document*
- Related technical and quality assurance implementing procedures

2.2 Purpose

The audit team assessed INL/CCP compliance with the referenced upper-tier requirements for waste characterization and certification and applicable QA program activities for RH SCGs S3000 homogeneous solids and S5000 debris wastes and enhanced AK activities related to CH SCGs S3000 homogeneous solids, S4000 soils/gravel, and S5000 debris wastes for previously certified containers.

3.0 AUDIT TEAM AND OBSERVERS

AUDITORS/TECHNICAL SPECIALISTS

Dennis Miehls	Management Representative, CBFO Office of Quality Assurance
Jim Schuetz	Audit Team Leader, CBFO Technical Assistance Contractor (CTAC)
Jim Vernon	Audit Team Leader, CTAC
Matt Leroch	Auditor, CTAC
Bobby Hunt	Auditor, CTAC
Katie Chester	Auditor, CTAC
Ricardo Chavez	Auditor, CTAC
Prissy Yanez	Auditor, CTAC
Greg Knox	Auditor, CTAC
Roger Vawter	Auditor, CTAC
Brian Tousley	Auditor, CTAC
Cindi Castillo	Auditor, CTAC
Dick Blauvelt	Technical Specialist, CTAC
Randy Fitzgerald	Technical Specialist, CTAC
Paul Gomez	Technical Specialist, CTAC
Rhett Bradford	Technical Specialist, CTAC
Jim Oliver	Technical Specialist, CTAC

OBSERVERS

Ricardo Maestas	New Mexico Environment Department (NMED)
David Biswell	NMED
Herb Cruickshank	CBFO National TRU Program (NTP) Compliance Division

4.0 AUDIT PARTICIPANTS

The INL/CCP individuals involved in the audit process are identified in Attachment 1. A pre-audit meeting was held at the Radioactive Waste Management Complex (RWMC), Building WMF-637 main conference room at the INL near Idaho Falls, ID, and at the Skeen-Whitlock Building in Carlsbad, NM, on June 13, 2017. A daily briefing was held on June 14, 2017 with INL/CCP management and staff to discuss issues and potential deficiencies. The audit was concluded with a post-audit meeting held June 15, 2017, at the RWMC Building WMF-637 main conference room at the INL and in the Skeen-Whitlock Building in Carlsbad.

5.0 SUMMARY OF AUDIT RESULTS

5.1 Program Adequacy, Implementation, and Effectiveness

This audit was performed to assess the capability of INL/CCP to characterize RH SCG S3000 solids and S5000 debris waste for compliance with the requirements specified in the WIPP HWFP Waste Analysis Plan (WAP), the WIPP WAC, Chapter 18 of the DSA, the WCPIP and the CBFO QAPD. The characterization methods assessed were AK, VE, RTR, and DTC. Other areas evaluated were data generation and PL/V&V, WWIS/WDS data entry, data quality objective (DQO) reconciliation, container management, the preparation of Waste Stream Profile Forms (WSPFs), and Statistical Approach to Material at Risk (MAR). The contact-handled (CH) S3000 solids, S4000 soils, and S5000 debris SCGs were also assessed regarding completion of enhanced AK activities related to containers that have been previously certified.

The audit team concluded that the applicable INL/CCP TRU waste characterization activities, as described in the associated implementing plans and procedures, are adequate in meeting upper-tier requirements, and that the procedures evaluated are satisfactorily implemented and effective in achieving the desired results. Audited activities are described below. Attachment 2 contains a Summary Table of Audit Results. Attachment 3 contains a list of audited documents. Attachment 4 contains a list of the processes and equipment reviewed during the audit.

5.2 General Activities

5.2.1 Results of Previous Audits

The audit team examined the results of the previous CBFO audit of the INL/CCP (Audit A-16-18). Audit A-16-18 identified one CAQ, which resulted in the initiation of CAR 16-045, regarding Neutron measurements taken in accordance with CCP-TP-504, Rev. 18, that were not accurate based on manufacturer recommendations for response time considerations. During the performance of this audit, the audit team did not observe any instances similar to the conditions identified during A-16-18, suggesting that the corrective actions taken to address this CAQ were adequate in precluding recurrence. In discussions with CCP personnel, trainings and briefings were given regarding CAR 16-045.

5.2.2 Changes in Program or Operations

The audit team determined through interviews with the INL/CCP Project Manager that there were no significant changes in programs or operations since the previous recertification audit (Audit A-16-18).

5.2.3 New Programs or Activities Being Implemented

The audit team determined through interviews with the INL/CCP Project Manager that no new programs or activities had been implemented since the previous recertification audit (Audit A-16-18).

5.2.4 Changes in Key Personnel

The audit team determined through interviews with the INL/CCP Project Manager that several changes in key personnel had occurred since the previous audit A-16-18 including the following:

- CCP RH Program Manager
- CCP Manager
- NWP Manager

5.2.5 INL/CCP Program Interface

The audit team evaluated the program interface established between CCP and the INL as documented in CCP-PO-024, Rev. 15, *CCP/INL Interface Document*, and CCP-PO-501, Rev. 9, *CCP/INL RH TRU Waste Interface Document*. These documents describe the interfaces, roles and responsibilities, and program requirements applicable to the INL and NWP/CCP organizations in support of CCP CH and RH waste characterization activities at the INL.

Program interface requirements evaluated for CH waste characterization activities included review of the enhanced AK process including the roles and responsibilities of the CCP Site Project Manager, and Host Site Subcontract Technical Representative/Site Management Representative (STR/SMR). Specific activities evaluated included providing results of the Acceptable Knowledge Assessments (AKA), reviews of the Interface Waste Management Document List (IWMDL). The audit team concluded that requirements evaluated, as described in CCP-PO-024, *CCP/INL Interface Document*, were satisfactorily implemented for the enhanced AK process.

Program interface requirements evaluated for RH waste characterization activities included responsibilities of the CCP Project Manager, CCP QA Engineer, Idaho National Laboratory Host Site Management Representative, and the CCP Vendor Project Manager. The audit team concluded that requirements evaluated, as described in CCP-PO-501, *CCP/INL RH TRU Waste Interface Document*, were satisfactorily implemented.

No concerns related to management of program interface with INL and CCP were identified during the audit. As a result of personnel interviews and reviews of objective evidence, the requirements specified in the interface documents were determined to be satisfactorily implemented and effective in achieving the desired results.

5.2.6 Generator Site Technical Review

The CBFO and NWP, as WIPP HWFP co-permittees, performed GSTR-ID-1-17-01, January 23 – 27, 2017, at INL, Fluor Idaho, LLC Idaho Clean-up Project (ICP), and areas associated with the handling and packaging of TRU waste (i.e., AMWTP, ARP, RWMC, and INTEC). The Generator Site Technical Review (GSTR) covered both CH and RH TRU Waste operations in Idaho with the exception of RH TRU waste from the Naval Reactor Facility (NRF) and the Materials and Fuels Complex (MFC). At the time of the audit, the GSTR team had not disclosed official results, nor completed their review of the program; therefore, the audit team was unable to determine if INL has satisfactorily addressed any identified issues related to the GSTR.

5.3 Quality Assurance Activities

5.3.1 Personnel Qualification and Training

The audit team interviewed responsible personnel and reviewed documentation to verify that INL/CCP meets the requirements of the CBFO QAPD. The audit team reviewed the following procedures:

- CCP-PO-047, Rev. 1, *CCP Training and Qualification Program Document*
- CCP-QP-002, Rev. 42, *CCP Training and Qualification Plan*
- CCP-QP-041, Rev. 1, *Job Needs Analysis and Design*
- CCP-QP-042, Rev. 1, *CCP Project Level Training and Qualification*
- CCP-QP-043, Rev. 1, *CCP Operations Level Training and Qualification*

The team determined that all procedures reviewed adequately addressed upper-tier requirements.

Training and qualification records for the following positions were reviewed:

- CH waste and RH waste Acceptable Knowledge Experts (AKEs)
- Site Program Managers (SPMs)
- Flammable Gas Analysts (FGAs)
- NDA Operators/Independent Technical Reviewers (ITRs)
- DTC Survey Operators/ITRs
- VE Operators/ITRs
- Nondestructive Examination (NDE) RTR Operators/ITRs.

One concern related to training and qualification was identified during the audit. During review of CCP procedure CCP-QP-002, *CCP Training and Qualification Plan*, Section

7.4.2, and discussion with CCP personnel, the audit team determined that a clarification is needed in regards to the CCP interpretation of the meaning of “absence of duty”. There were no VE activities performed at the Idaho Nuclear Technology Engineering Center (INTEC) Fuels and Applied Science Building (FASB) from January 2017 through May 23, 2017. The training procedure requires that retraining must be given when a qualified individual is absent from duties for longer than three months. The audit team interprets absence to include the situation where work was not performed. This concern was classified as an observation indicating that if left unaddressed, it is possible that a condition adverse to quality might exist in the future.

Records reviewed included the List of Qualified Individuals (LOQI) for INL personnel working with the RH Program, LOQI dated 06/13/17. The procedures reviewed and objective evidence assembled and evaluated during the audit indicated that the applicable requirements for Personnel Qualification and Training are adequately established for compliance with upper-tier requirements and are satisfactorily implemented, resulting in an effective training program.

5.3.2 Nonconformance Reporting

The audit team reviewed implementing procedure CCP-QP-005, Rev. 25, *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.

The audit team interviewed the CCP QA Engineer and randomly selected nonconformance reports (NCRs) for review.

The following NCR was initiated at the data generation level (DGL):

<u>Number</u>	<u>Revision</u>
NCR-RHINL-0431-16	R0

The following NCRs were initiated at the project level (PL):

<u>Number</u>	<u>Revision</u>
NCR-RHINL-0210-16	R0
NCR-RHINL-0210-16	R1
NCR-RHINL-0212-16	R0
NCR-RHINL-0213-16	R0
NCR-RHINL-0213-16	R1
NCR-RHINL-0214-16	R0
NCR-RHINL-0216-16	R0
NCR-RHINL-0218-16	R0
NCR-RHINL-0219-16	R1
NCR-RHINL-0343-17	R0
NCR-RHINL-0346-17	R2

The team concluded that nonconformances are being appropriately documented and tracked through resolution as required. NCRs reviewed included original and revised NCRs. There was one NCR related to RH waste characterization activities written at the PL that required reporting to CBFO (NCR-RHINL-0210-16, R0). The audit team verified CCP personnel are familiar with the process for reporting NCRs to the Permittee via email to CBFO within the timeframe required by the Permit. All the NCRs examined were verified to have been entered, managed, and tracked in both the CCP Integrated Data Center (IDC) and the NCR Logs, as well as through the required reconciliation reporting mechanism.

One concern was identified relating to the NCR Module (NCRM) in the CCP IDC. NCR-RHINL-0210-16, R1 was determined not to be reportable by the Certification Manager; however, the NCRM CBFO block is checked, indicating that it is reportable. This concern was determined to be a CAQ and was addressed under CBFO Corrective Action Report (CAR) 17-039.

With the exception of the concern identified, the procedures reviewed and objective evidence assembled provided evidence to confirm that the applicable requirements for nonconformances are adequately established for compliance with upper-tier requirements, satisfactorily implemented, and effective in achieving the desired results.

5.3.3 Records

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

- CCP-QP-008, Rev. 26, *CCP Records Management*
- CCP-QP-028, Rev. 17, *CCP Records Filing, Inventorying, Scheduling, and Dispositioning*

Control of QA records was verified through review of the Records Inventory and Disposition Schedule (RIDS), dated 6/15/2016, for NWP/CCP RH (All Sites). The audit team conducted a walkthrough of the CCP Records Area to validate proper segregation of active records from archived records. The team observed active records stored in a segregated, secured area including a posted access list of authorized personnel.

No concerns were identified. The procedures reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for QA Records management are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.4 Technical Activities

5.4.1 Acceptable Knowledge/Waste Certification

Acceptable Knowledge

Prior to the audit, 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. 22, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- CCP-PO-003, Rev. 14, *CCP TRU Authorized Methods for Payload Control (CCP CH-TRAMPAC)*
- CCP-QP-005, Rev. 25, *CCP TRU Nonconforming Item Reporting and Control*
- CCP-QP-002, Rev. 42, *CCP Training and Qualification Plan*
- CCP-QP-008, Rev. 26, *CCP Records Management*
- CCP-QP-042, Rev. 1, *CCP Project Level Training and Qualification*
- CCP-TP-001, Rev. 21, *CCP Project Level Data Validation and Verification*
- CCP-TP-002, Rev. 26, *CCP Reconciliation of DQOs and Reporting Characterization Data*
- CCP-TP-005, Rev. 29, *CCP Acceptable Knowledge Documentation*
- CCP-TP-068, Rev. 12, *CCP Standardized Container Management*
- CCP-TP-200, Rev. 2, *CCEM and AKA Review*
- CCP-PO-045, Rev. 2, *CCP Waste Management Field Observation*
- WP 13-QA.03, Rev. 26, *QA Independent Assessment Program*

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

The audit team evaluated AK processes for the TRU waste characterization and certification program for RH S3000 Solids Summary Category Group (SCG) and S5000 Debris SCG TRU waste and for CH S3000 Solids SCG, S4000 Soils SCG, and S5000 Debris SCG TRU waste. This recertification audit was based upon the requirements contained in the latest version of the WIPP RCRA permit as described in the WAP. CTAC AK auditors reviewed documentation to support all applicable AK requirements, completing relevant portions of WAP C6-1, C6-2 and C6-3 checklists and compiling and reviewing objective evidence to demonstrate compliance. The team also reviewed the AK record with respect to relevant requirements of the RH Waste Acceptance Criteria (WAC) and the RH TRU WCPIP, Rev 3. A significant portion of the audit addressed the status of Enhanced AK products for the waste streams examined with the upper-tier requirements identified in the WAC, DOE/WIPP-02-3122 R8, Appendices H and I.

The scope of the audit also called for the AK audit team to examine the status of Enhanced AK Products for the population of specific CH TRU waste streams for which CCP is responsible. That is, the containers which were characterized and certified by CCP until those activities ceased on October 1, 2015. The specific waste streams are;

ID-SDA-DEBRIS, ID-SDA-SLUDGE, ID-SDA-SOIL, ID-SRP-S3000, and ID-RF-S3114. The results of this Enhanced AK Product status are provided later in this report.

The Team examined AK program documentation for the S3000 RH TRU solids waste stream ID-HFEF-S3000-RP described in AK Summary report CCP-AK-INL-620 R1. This waste stream represents absorbed water resulting from the treatment of Sodium (Na) and sodium-potassium (NaK)-contaminated waste from operations in the Hot Fuel Examination Facility (HFEF), the Fuel Conditioning Facility (FCF) and supporting laboratory operations. In addition, the AK record was also reviewed for two distinct S5000 RH TRU debris waste streams from Rocky Flats operations. The first, ID-RF-S5300-RH, is comprised of predominantly organic debris waste generated during americium and plutonium recovery. The second waste stream is designated as ID-RF-S5100-RH that is a single drum RH waste stream consisting primarily of inorganic debris generated during Rocky Flats residue R&D, radiological sampling and waste repackaging activities. Both waste streams are described in AK Summary Report CCP-AK-INL-640 Rev. 2.

For each waste stream, in addition to a thorough review of the AK Summary reports noted above, the audit team examined the respective AK Documentation Checklist (Attachment 1), the AK Source Document Information List (Attachment 4), the AK Hazardous Constituents List (Attachment 5), the respective AK Waste Form, Waste Material Parameters, Prohibited Items and Package (Attachment 6), as well as the justification memos for waste material parameter weight estimates, and the Waste Container List (Attachment 8), along with the Add-Container memos as applicable that demonstrate that the parameters and properties of containers added to a waste stream are examined to assure that the assignment is appropriate. For some of the attachments (Attachments 1, 5, and 6), no changes have occurred since the previous audit. The auditors examined specifically the add-container memos referenced in the respective AK Waste Container List (Attachment 8) to assure the relevant requirements of CCP-TP-005 were met. Documentation of the future waste generation, if applicable, was also examined and will be included in the objective evidence submitted.

The Audit team reviewed the contents of draft Waste Stream Profile Forms and attachments for correct entries. Examples of the resolution of AK discrepancies in the AK record and discrepancies identified during characterization, NCRs dealing with prohibited items, available AK Accuracy Reports, and the most recent internal surveillance documentation were also collected and examined. In addition, the contents of the RH Container Tracking Spreadsheet (CTS) was examined and compared with other information in the AK record.

The WAP required container traceability exercise was conducted for a total of five waste containers from the three waste streams audited. Data for traceability included batch data reports (BDRs) for real-time radiography and DTC, the CCP IDC screenshots, container input forms (FRM 880) from host site packaging and repackaging activities, data from the host site Integrated Waste Tracking System and relevant information from the host site Waste Determination and Disposition Forms (WDDF).

As noted above, a significant portion of the AK audit involved the examination of Enhanced AK Products for the three waste streams audited. The results are noted below by specific product category.

Interface Waste Management Documents List (IWMDL) - AK Attachment 9

An Interface Waste Management Documents List (AK attachment 9) has been developed and maintained for ID-HFEF-S3000-RP. The IWMDL includes a current list of generator site plans, procedures, documents and reports associated with current waste management and packaging (e.g., waste management, waste generation, waste treatment, waste packaging, waste repackaging, waste remediation, waste stream delineation, and waste characterization procedures) that have the ability to affect waste stream characterization and certification activities. The IWMDL was examined to assure that it has been properly maintained and updated quarterly in accordance with the WAC requirements. The audit team examined several of the procedures/processes in detail and had questions addressed. Documentation of the verification activity for every process/procedure on the IWMDL was reviewed. Furthermore, the demonstration of appropriate documentation of revisions to procedures was reviewed. Finally, the auditors reviewed the checklist for the field observation of relevant activities on this IWMDL in accordance with procedure CCP-PO-045, *CCP Waste Management Field Observation*.

AK Assessment

Completed AKAs were available and were examined for the two Rocky Flats debris waste streams audited, ID-RF-S5300-RH and ID-RF-S5100-RH. The AKA is intended to ensure that the AK documentation relating to the management of potentially reactive, corrosive, ignitable, and incompatible TRU waste materials is adequate, current, and accurately described. Documentation of review and approval by the generator site was examined. A detailed review of both AKA documents including the appropriate application of the procedure, supporting references and conclusions reached were performed. All questions were satisfactorily addressed. In addition, the checklists associated with the review of AKAs in accordance with CCP-TP-200, *CCEM and AKA Review* were compiled and examined. Finally, the AK Audit Team reviewed with the AKE the process for examining the contents of each container in the waste stream to demonstrate compliance with the objectives of no ignitable, corrosive, reactive or incompatible materials.

Chemical Compatibility Evaluation

Draft Chemical Compatibility Evaluations (CCE) and requisite memoranda were available for both ID-RF-S5300-RH and ID-RF-S5100-RH. The audit team reviewed the comments submitted and addressed during the internal review of both CCEs on appropriate document review record (DRR) forms. Both of the two CCEs were examined with the author with respect to, among other things, technical assumptions, conclusions and supporting documentation. In addition, comparisons were developed regarding chemicals listed in the AK Summary Report (AKSR) but not identified in the CCE and chemicals identified in the CCE but not listed in the AKSR. For each example, a satisfactory rationale was provided by the author. Both of these CCEs have been

submitted to CBFO for review and approval. Minor comments provided by the audit team will be addressed during that review cycle.

AK Briefings

Since none of the AK Summaries examined have been revised since the last audit, there is no requirement for AK Briefings.

Basis of Knowledge

Since there is no approved BoK procedure for waste containers at the generator site, no BoK documentation was available for the RH and CH waste streams that were examined during the audit. In addition, none of the three waste streams, 2 RH waste streams and 1 CH waste stream, could demonstrate exemption from the BoK requirements with the exception of the ID-RF-S3114 as discussed below.

Status of Enhanced AK Products for CCP Waste Stream Populations

The scope of the audit included a review by the AK Audit Team of the status of Enhanced AK Products for waste stream populations for which CCP is the responsible certifying program. For CH waste streams ID-SDA-DEBRIS, ID-SDA-SLUDGE, ID-SDA-SOIL, and ID-SRP-S3000, no Enhanced AK Products have been prepared. The Enhanced AK Products for CH waste stream ID-RF-S3114 were previously reviewed during CBFO Surveillance Report S-17-30 dated March 31, 2017 demonstrating an exemption from the BoK stating that no oxidizing chemicals are present in the waste stream. Since the S-17-30 Surveillance Report has been issued, two additional addendums to Rev. 0 of the AK Assessment for waste stream ID-RF-S3114 have been issued. Addendum 7 is a record of review of an additional 1,296 drums to assure that they are bounded by the AKA Rev. 0. Addendum 8 went through the same exercise for 10 additional drums, resulting in a total population of 4,921 drums approved for disposal at WIPP. The AK audit team examined both addendums for completeness and compliance.

With regard to the QA portion of the AK audit, the audit team examined training records for five AKEs and nine SPMs who have participated or could potentially participate in CCP activities for the INL generator site. The audit team reviewed BDRs, discrepancy reports, and NCRs. In addition, the handling of AK records was examined for compliance with preparation, legibility, accuracy, review, approval, and maintenance. The distribution, control, and use of appropriate AK procedures were also reviewed. The audit team also examined the most recent audit report relevant to AK, NWP Quality Assurance Audit I17-01 completed December 20, 2016 at Oak Ridge National Laboratory. Although this audit report was not specific to INL, the activities evaluated are relevant to all of CCP's sites. The Audit team did not identify any QA issues in relation to AK.

The AK auditors concluded that with respect to the AK requirements in the WAC and the WAP, the CCP program applied to the three waste streams examined, 2 RH waste streams and 1 CH waste stream, representing the three SCGs, RH S3000, RH S5000, and CH S3000, are determined to be adequate with respect to procedural compliance with requirements of upper-tier documents. However, since the requisite Enhanced AK

Products have not been completed for the RH waste streams examined, implementation and effectiveness are indeterminate. Due to the enhanced AK documents for CH waste streams not being available, implementation and effectiveness for AK documentation for CH waste is also indeterminate, with the exception of the previously certified ID-RF-S3114 waste stream.

5.4.2 Project-level Data Verification and Validation

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

- CCP-TP-001, Rev. 21, *CCP Project Level Data Validation and Verification*
- CCP-TP-002, Rev. 26, *CCP Reconciliation of DQOs and Reporting Characterization Data*
- CCP-PO-045, Rev. 2, *CCP Waste Management Field Observation*
- CCP-TP-500, Rev. 15, *CCP Remote-Handled Waste Visual Examination*
- CCP-TP-504, Rev. 18, *CCP Dose-to-Curie Survey Procedure for Remote-Handled Transuranic Waste*
- CCP-TP-508, Rev. 11, *CCP RH Standard Real-Time Radiography Inspection Procedure*
- CCP-TP-512, Rev. 6, *CCP Remote-Handled Waste Sampling*

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

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

RTR

INLRHRTR16012	INLRHRTR16020	INLRHRTR16024
INLRHRTR17002	INLRHRTR17003	

VE

INLRHVE16001	INLRHVE16002	INLRHVE16003
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DTC

INLRHDTC16008	INLRHDTC16028	INLRHDTC17001
INLRHDTC17002	INLRHDTC17003	INLRHDTC17006

Waste Sampling (DTC)

F7480-00277-03	F7480-00277-04	F7480-00277-07
F7480-00277-08	F7480-00277-09	F7480-00277-10
F7480-00277-12	F7480-00277-13	

The BDRs were verified to be complete and accurate, except BDR INLRHRTR16020 having an incorrect Independent Review Checklist answer for question #10 for container 052E was found to be inconsistent with the waste stream description and documented on NCR NCR-RHINL-0430-16. The ITR answered "Yes" to question #10 indicating that the waste matched the waste matrix code and waste stream description. The ITR checklist question #10 should be answered "No". The audit team received a corrected BDR with NCR-RHINL-0353-17 detailing the correction prior to the end of the audit (see CDA-1, Section 6.2). The remaining BDRs included the completed NCRs and documentation of SPM review of the NCR completion. Additionally, the audit team verified the BDRs meet the descriptions of the waste contained in the AK summaries.

The audit team verified the contents of the following AK summaries and the Characterization Information Summary (CIS) with container lots:

- CCP Waste Stream Profile form for ID-HFEF-S3000-RP (Draft) with CIS Lot 1

The AK summary and the CIS provided adequate information to complete the characterization processes at INL-CCP and support the containers run at risk by INL-CCP. The AK summary is in draft until approved by CBFO-NTP and will be reevaluated in a future audit or surveillance of the INL-CCP program.

The audit team verified through interviews with the SPM that a couple discrepancy resolutions (DR010 and DR011) were provided for waste forms not matching the waste descriptions and a waste adequacy determination request was not necessary during this audit period.

The audit team verified the required quarterly repeat of the DGL data by the project level for the following:

- 2nd Quarter 2016 Request for RTR and Results for RTR; VE not characterized
- 3rd Quarter 2016 Requests for RTR and Results for RTR: VE not characterized
- 4th Quarter 2016 Requests and Results for VE, RTR
- 1st Quarter 2016 Requests for RTR and Results for RTR; VE not characterized

The results from each quarterly package indicate there were no inconsistencies reported in the data.

The audit team completed a review of Attachment 1 (Waste Management Field Observation Planning) and Attachment 2 (Waste Management Field Observation Results) of procedure CCP-PO-045, Rev. 2, *CCP Waste Management Field Observation*, for field observation activities. No activities to date have occurred for INL-CCP waste streams. The audit team verified the attachments were adequate. The scheduling of WMFO frequency is entered into the IDC to ensure scheduling is maintained. After the WMFO results are complete, the SPM reviews the results and updates IDC for the next scheduled observation. WMFOs are completed on a waste stream basis.

The audit team determined that only qualified personnel will perform work to procedure CCP-TP-200, Rev. 1, *Chemical Compatibility Evaluation Memorandum and Acceptable Knowledge Assessment Review*. The SPM will use the OAKES database for the performance of the procedure, and the OAKES database was verified by the audit team to be a part of the CCP Software QA Program during the past two audits of CCP. Based on interviews with the SPM, the CCEM and AKA review are completed by the SPM and reviewed in OAKES. After the OAKES review, the CCEM and AKA are uploaded into the WDS and reviewed by two other SPMs. A revised CCEM or AKA can be uploaded into WDS. The audit team was informed that this activity and process has not been performed to date at INL-CCP to enable the audit team to verify effectiveness and implementation of this procedure.

The audit team determined that only qualified personnel will perform work to procedure CCP-TP-201, Rev. 0, *Verification of Shipping Criteria and Emplacement Criteria*. The SPM verifies the Previously Certified Waste Shipping Criteria Review and generates Attachment 1 - SPM Previously Certified Waste Shipping Criteria Review Checklist. After Attachment 1 is completed, it is submitted to CCP Records and the SPM provides a copy to the WDS Data Administrator. At the time of the audit, there had been no activity performed by CCP to enable the audit team to verify effectiveness and implementation of this procedure.

Overall, the procedures reviewed and objective evidence assembled provided evidence to confirm that the applicable requirements for PL/V&V are adequately established for compliance with upper-tier requirements, satisfactorily implemented, and will later determine if this is effective in achieving the desired results concerning the waste evaluation processes. The validation and verification processes for the BDR reviews are effective. One concern was corrected during the audit.

5.4.3 WIPP Waste Information System/Waste Data System

The audit team conducted interviews and reviewed the implementing procedure relative to the WWIS/WDS data entry process to determine the degree to which the procedure adequately addresses upper-tier requirements. The procedure reviewed included CCP-TP-530, Rev. 12, *CCP RH TRU Waste Certification and WWIS/WDS Data Entry*. Results of the review indicate that the procedure adequately addresses upper-tier requirements.

There have been no RH waste characterization activities performed since the last INL/CCP program certification assessment (A-16-18, June 14 - 16, 2016) and so, there were no RH Waste Characterization Case Files reviewed. When RH characterization activities resume, containers will be processed using CCP-TP-530, Rev. 12, which utilizes functions of the IDC for certification and electronic submittal to WWIS/WDS. There has been no shipping of RH waste packages and so, there were no shipping packages reviewed. Per interviews with CCP personnel, the audit team determined that personnel are familiar with the processes for characterization of RH waste containers and building of RH waste packages and that procedure implementation is expected to be adequate once these activities resume.

The audit team interviewed Waste Certification Official (WCO) personnel 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 WAC PE-Ci limit requiring a USQD and WCO personnel have not received a request from a TCO for a high Material at Risk (MAR) evaluation. The audit team determined that WCO personnel are familiar with these two processes, that simulations of procedure steps have been performed, and that implementation is expected to be adequate if personnel receive containers or evaluation requests.

The audit team did not evaluate BDRs and field activities for characterizing RH SCG S3000 solids and S5000 debris waste in the areas of WWIS/WDS during this audit due to inactivity for these SCGs.

No concerns related to WWIS/WDS data entry and waste certification were identified during the audit. The procedures reviewed provided evidence to confirm that the applicable requirements for WWIS/WDS are adequately established for compliance with upper-tier requirements; however, objective evidence was not provided for review during the audit, therefore, the WWIS/WDS process implementation and effectiveness must be deemed indeterminate.

5.4.4 Real-Time Radiography

The audit team evaluated the adequacy, implementation, and effectiveness of the INL/CCP RTR characterization process for RH SCG S3000 homogenous solid and S5000 debris waste. QA activities related to RTR that were audited included personnel training and qualification, control of nonconforming conditions, document control, records, logbooks, and work control for conduct of operations.

The team reviewed procedures CCP-TP-508, *CCP RH Standard Real-Time Radiography Inspection Procedure*; CCP-TP-028, *Radiographic Test Drum and Training Container Construction*; CCP-QP-002, *CCP Training and Qualification Plan*; CCP-QP-041, *CCP Jobs Needs Analysis and Design*; CCP-QP-043, *CCP Operations Level Training and Qualification*; and CCP-TP- 28, *CCP Radiographic Training Container Construction*, and determined the procedures adequately address upper-tier requirements.

The audit team observed the RTR of drum ANLE4C-1 for BDR INLRHRTR17011 at the INTEC facility. The team examined the RTR operational logbooks and verified logbook entries were logged correctly and reviewed by the VPM as required. The team also interviewed the operators and inspected the RTR unit. An evaluation of video and audio recordings of RTR analyses and review of BDRs and records for RH RTR were completed with respect to QA and technical content.

The audit team examined the following RTR RH BDRs and RTR tapes generated from operations performed in the INTEC facility to verify implementation and compliance with the requirements for documenting RTR activities, as stipulated in CCP-TP-508.

INLRHRTR16008
INLRHRTR16012
INLRHRTR16014
INLRHRTR16020
INLRHRTR16024
INLRHRTR17002
INLRHRTR17003
INLRHRTR17005

The team examined training records for four RTR operators and verified that the operators were appropriately qualified as required.

No concerns related to real-time radiography were identified. The procedures reviewed, results of field observations, and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for RTR activities are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.4.5 Visual Examination

The audit team evaluated the adequacy, implementation, and effectiveness of the INL/CCP VE characterization process for RH SCG S5000 debris waste. The audit team reviewed the following documents / procedures as they relate to VE to determine the degree to which they adequately address applicable upper-tier requirements:

- CCP-TP-500, Rev. 15, *CCP Remote-Handled Waste Visual Examination*
- CCP-QP-002, Rev. 42, *CCP Training and Qualification Plan*
- CCP-QP-043, Rev. 1, *CCP Operations Level Training and Qualification*
- 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.

INL/CCP uses the two-operator method when performing VE characterization. VE is performed by two qualified operators where the waste is visually examined and placed into containers. During the audit, the VE audit team toured the Hot Cell in building CCP-666 at the INTEC facility and observed VE being performed on RH container ANLE41AB. The audit team also interviewed VE operators and the Visual Examination Expert (VEE). The audit team examined the VE operational logbook (CCP-RH-INL-VE-01 for 2017) and verified logbook entries were logged correctly and reviewed by the VPM, as required. The audit team noted that no VE operators/activities were performed

from January 2017 through May 23, 2017; therefore, no logbook entries were required to be entered for that timeframe.

The audit team examined the following RH VE BDRs to verify implementation and compliance with the requirements for documenting VE activities, as specified in CCP-TP-500:

INLRHVE16001
INLRHVE16002
INLRHVE16003

The audit team examined training records for four VE operators/ITRs, and confirmed the appointment of two INL/CCP VEEs. The audit team verified that VE operators, ITRs, and the VEE were appropriately trained and qualified, as required. The audit team also verified that VE operators were trained on newly-developed and revised waste streams in AKS Reports, whenever the waste generating processes, packaging, and/or the waste material parameters expected to be found in each Waste Matrix are changed. Objective evidence included attendance sheets for training given on AKS Reports CCP-AK-INL-620, CCP-AK-INL-540, and CCP-AK-INL-580.

No concerns were identified in the area of VE. The procedure reviews, field observations, and document reviews provided evidence that the applicable requirements for VE are adequately established for compliance with upper-tier requirements, satisfactorily implemented, and effective in achieving the desired results.

5.4.6 Dose-to-Curie

The audit team assessed the adequacy, implementation, and effectiveness of the DTC methodology used at INL as part of the CCP to characterize waste from the S3000 and S5000 SCGs. The audit team evaluated the DTC measurement system. Dose measurements were observed and operations personnel were interviewed on site at INTEC in building CPP-659 on June 13th, 2017. Document reviews and interviews with expert analysts (EAs) and ITRs and operators were conducted in Idaho Falls at the Mirion offices on June 14th, 2017.

DTC measurements are accomplished using multiple detectors: one Canberra Osprey system to obtain the relative contributions of Co-60 and Cs-137 to the gamma dose rate; and one of two probes (either high-range or low-range) to take dose rate measurements. The audit team observed the dose rate measurements from drum ANLE4C-1 using the FH 40 G Probe XC0674. CBFO previously evaluated the DTC methodology during Audit A-16-18, June 14-16, 2016.

In addition to evaluating the technical adequacy of the implementation of upper-tier documents (DOE Waste Acceptance Criteria (WAC) DOE/WIPP 02-3122, Revision 8), the audit team also specifically evaluated the technical adequacy, implementation, and effectiveness of CCP procedure:

CCP-TP-504, Revision 18, *CCP Dose-to-Curie Survey Procedure for Remote-Handled Transuranic Waste.*

Based on a review of the current revisions of INL/CCP procedures, technical documents, and completed BDRs provided prior to the audit, a checklist was prepared and used to evaluate the following:

- System stability as evidenced by the implementation and effectiveness of quality control measurements, and the use of calibrated equipment;
- Applicability of each detector's calibration and operational range to the matrix, geometry and radionuclide content of drums measured since the last audit;
- Completed BDRs to ensure data are reported and reviewed as required;
- Data storage and retrievability;
- Personnel qualification and training; and
- Continued operability and condition of the DTC equipment since Audit A-16-18.

The audit team interviewed DTC personnel, observed equipment and measurement operations, and examined electronic and paper copies of reports and records.

DTC is performed in the CPP-659 area of INTEC. The measurement acquisition control room (Cell 302) contains closed circuit camera control systems and display units and the readouts for the dose measurement and gamma spectrometry and the analysis resulting from the Osprey detector measurement. The actual measurements are performed in an adjacent hot cell (Cell 306) where the Osprey detector, DTC dose measurement probes, measurement fixture, and the rotating platform are located. The drums are lowered into the hot cell from a high bay above the hot cell. Cell 302 was examined (Cell 306 was in use for RTR and dose rate measurement at the time of the audit); attending personnel were interviewed; data acquisition equipment was examined; and records, logbooks, and procedures were reviewed.

The dose rate measurement is acquired using either a Thermo Fischer Scientific Model RO-7 High Range Survey System or a Thermo Fischer Scientific Model FH 40 G Dose Rate Measuring Unit depending on the level of the radiation dose measurement relative to the environmental background.

The audit team observed the dose rate measurement, the enclosure, and shielding via close circuit camera. CCP procedures were reviewed and operations staff was interviewed. Data acquisition and measurement data were observed and data contained in BDRs was reviewed. Technical and personnel elements of the DTC methodology are adequate satisfactory and effective.

The audit team specifically reviewed the following 29 BDRs that constitute a sample size of 100%:

- INLRHDTC16007 that includes 9 containers from the ID-HFEF-S5000 RP/ID-HFEF-S3000 RP waste streams;
- INLRHDTC16008 that includes 2 containers from the ID-ANLE-S5000 waste stream;
- INLRHDTC16009 that includes 12 containers from the ID-ANLE27B-1 waste stream;
- INLRHDTC16010 that includes 12 containers from the ID-ANLE-S5000 waste stream;
- INLRHDTC16011 that includes 5 containers from the ID-ANLE26E-2 waste stream;
- INLRHDTC16012 that includes 3 containers from the ID-ANLW-W269-RH waste stream;
- INLRHDTC16013 that includes 14 containers from the ID-ANLE19A2-A waste stream;
- INLRHDTC16015 that includes 2 containers from the ID-MFC-SOLID-RH waste stream;
- INLRHDTC16016 that includes 7 containers from the ID-HFEF-S5000 RP/ID-HFEF-S3000 RP waste streams;
- INLRHDTC16017 that includes 13 containers from the ID-HFEF-S5400-RH waste stream;
- INLRHDTC16018 that includes 6 containers from the ID-HFEF-S5000 RP/ID-HFEF-S3000 RP waste streams;
- INLRHDTC16020 that includes 9 containers from the ID-HFEF-S5000 RP/ID-HFEF-S3000 RP waste streams;
- INLRHDTC16021 that includes 11 containers from the ID-HFEF-S5000 RP/ID-HFEF-S3000 RP waste streams;
- INLRHDTC16022 that includes 12 containers from the ID-HFEF-S5000 RP/ID-HFEF-S3000 RP waste streams;
- INLRHDTC16023 that includes 9 containers from the ID-HFEF-S5000 RP/ID-HFEF-S3000 RP waste streams;
- INLRHDTC16024 that includes 12 containers from the ID-ANLE-BIN waste stream;
- INLRHDTC16025 that includes 10 containers from the ID-HFEF-S5000 RP/ID-HFEF-S3000 RP waste streams;
- INLRHDTC16026 that includes 8 containers from the ID-HFEF-S5000 RP/ ID-HFEF-S3000 RP waste streams;
- INLRHDTC16027 that includes 12 containers from the ID-HFEF-S5000 RP/ ID-HFEF-S3000 RP waste streams;
- INLRHDTC16028 that includes 4 containers from the ID-ANLE-S5000 waste stream;
- INLRHDTC16029 that includes 10 containers from the ID-ANLE-S5000 waste stream;
- INLRHDTC16030 that includes 12 containers from the ID-ANLE-S5000 waste stream;
- INLRHDTC16031 that includes 4 containers from the ID-ANLE-S5000 waste stream;
- INLRHDTC17001 that includes 8 containers from the ID-ANLE-S5000 waste stream;
- INLRHDTC17002 that includes 3 containers from the ID-HFEF-S5000 RP/ ID-HFEF-S3000 RP waste streams;
- INLRHDTC17003 that includes 6 containers from the ID-ANLE-S5000 waste stream;
- INLRHDTC17004 that includes 12 containers from the ID-ANLE-S5000 waste stream;
- INLRHDTC17005 that includes 10 containers from the ID-ANLE-S5000 waste stream; and
- INLRHDTC17006 that includes 2 containers from the ID-HFEF-S5000 RP/ ID-HFEF-S3000 RP waste streams.

Additionally, the audit team focused on the number of NCRs that have been issued against the BDRs listed above. The audit team specifically reviewed the following NCRs:

NCR-RHINL-0218-16; 0457-16; 0216-16; 0217-16; 0214-16; 0215-16; 0219-16; 0210-17; 0346-17; 0369-16; 0370-16; 0431-16; 0436-16; 0345-17; 0432-16; 0435-16; 0437-16; 0209-17; 0343-17; 0344-17; 0206-17; and 0208-17.

Because of the large number of NCRs and the even larger number of BDRs affected, the audit team specifically reviewed the application of trend codes and whether or not the NCRs indicated the existence of broader programmatic issues. Through extensive conversations with INL/CCP, the audit team was marginally satisfied with the identification, resolution, and trending of NCRs related to RH DTC BDRs. CTAC auditors will continue to investigate the issuance, closure, and trending of NCRs at all other RH waste generation sites.

Overall, RH waste characterization activities were determined to be adequate, satisfactorily implemented, and effective.

5.4.7 Container Management

The audit team verified the adequacy of CCP-TP-509, Rev. 6, *CCP Remote Handled Transuranic Container Tracking*, and CCP-TP-068, Rev. 12, *CCP Standardized Container Management*. These documents apply to both the personnel who support CCP RH TRU waste characterization activities and the container tracking through CCP activities at INL.

No container travelers have been completed since the previous audit. Container traveler completion activities will resume when waste shipment to the WIPP is reauthorized.

The audit team identified no concerns related to container management. The procedures reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for container management activities are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

6.0 CORRECTIVE ACTIONS, OBSERVATIONS, AND RECOMMENDATIONS

6.1 Corrective Action Reports

During the audit, the audit team may identify CAQs, as described below, and document such conditions using 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 (SCAQ) – 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.

One CAR was issued as a result of the audit.

CAR 17-039

Condition:

CCP nonconformance report (NCR) NCR-RHINL-0210-16, Rev. 1 was reviewed in accordance with procedure and was determined not to be reportable by the Certification Manager. However, within the electronic IDC NCR Module (NCRM) the “CBFO” data block was checked, indicating that it was reportable.

Requirement:

CCP-QP-005, Rev. 25, *CCP TRU Nonconforming Item Reporting and Control*, 4.5.1 [D.5 and D.6] states that, “IF the project-level NCR is determined not to be reportable, THEN the NCR Coordinator receives an IDC notification that the NCR is not reportable. The NCRM is updated automatically. File a copy of the CBFO notification and related emails with the NCR.”

6.2 Deficiencies Corrected During the Audit

During the audit, the audit team may identify CAQs. The audit team members and the Audit Team Leader (ATL) 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, determines if the CAQ is an isolated case requiring only remedial action and, therefore, can be CDA. Deficiencies that can be classified as CDA are those isolated deficiencies that do not require a root cause determination or actions to preclude recurrence, and those for which 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), or one or two individuals have not completed a reading assignment.

Upon determination that the CAQ is isolated, the audit team member, in conjunction with the ATL, 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 ATL categorizes the condition as CDA.

One CAQ, was identified and corrected during this audit, as described below.

CDA 1

Condition:

Container 052E was found to be inconsistent with the waste stream description and documented on NCR NCR-RHINL-0430-16. The ITR answered "Yes" to question #10 indicating that the waste matched the waste matrix code and waste stream description. The ITR checklist question #10 should be answered "No".

Requirement:

CCP-TP-508, Rev 11, *CCP RH Standard Real-Time Radiography Inspection Checklist* section 4.9.2 states "Review the BDR to the criteria in the checklist of Attachment 3, **AND** complete Attachment 3.

Actions taken by Auditee:

The CCP SPM provided the audit team a copy of the updated BDR INLRHRTR16020 with corrected ITR checklist and SPM Review Checklist. A copy of nonconformance report, NCR-RHINL-0353-17, detailing in section 19b of the NCR provided the instructions for correcting the information. The corrected information was presented to the audit team in the BDR prior to the close-out of the audit on June 15, 2017.

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.

The audit team identified the following Observation during the audit.

Observation 1

During review of CCP procedure CCP-QP-002 *CCP Training and Qualification Plan*, Section 7.4.2, and discussions with CCP personnel, the audit team determined that a clarification is needed in regards to the CCP interpretation of the meaning of "absence of duty". Currently, Section 7.4.2 states that when a qualified individual is "absent from duties" for greater than three months, that retraining (including a performance evaluation) must be given prior to reassignment to duties. This procedure language is consistent with upper-tier DOE Order requirements. There were no VE activities performed at the INTEC FASB from January 2017 through May 23, 2017. In addition, no retraining was administered due to the fact that the operators were still on the LOQI,

and not considered absent. If the clarification is not addressed, training requirements may not be met for situations where personnel are either absent from the program or where activities are not actually performed for a period of time.

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 presented to INL/CCP management for consideration during the audit.

7.0 LIST OF ATTACHMENTS

Attachment 1: Personnel Contacted During Audit A-17-23

Attachment 2: Summary Table of Audit Results for A-17-23

Attachment 3: Listing of Audited Documents for A-17-23

Attachment 4: Processes and Equipment Reviewed During Audit A-17-23 of the
INL/CCP

PERSONNEL CONTACTED DURING AUDIT A-17-23				
NAME	TITLE/ORG	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST AUDIT MEETING
Preston Abbott	NDA-DTC / Mirion- Canberra	X	X	
Lashell Alade	Operator DTC and RTR / Fluor		X	
Michele Billett	CCP Training Specialist / CCP-TFE	X		X
David Biswell	Observer / NMED	X	X	X
S. Corey Boland	Operator DTC / NWP- CCP		X	
Rhett Bradford	VE Technical Specialist / CTAC	X		
Robert Braga	VE SS / Waste Management RH-TRU		X	
Tory Bromley	VE Operator / Waste Management RH-TRU		X	
Bevin Brush	SME / Waste Management RH-TRU		X	
Cindi Castillo	QA Auditor / CTAC	X		X
Rick Castillo	Observer / CTAC	X		
Ricardo Chavez	AK Technical Specialist - QA Auditor / CTAC	X		
Katie Chester	QA Auditor / CTAC	X		
Daniel Christensen	VE Operator / Waste Management RH-TRU		X	
Tyson Christensen	Lead Operator RTR / NWP-CCP		X	
Herb Cruickshank	Waste Certification Manager / DOE-CBFO	X	X	X
Chris Davis	VE Operator / Waste Management RH-TRU		X	
A.J. Fisher	Support Services Manager / NWP-CCP	X		X

PERSONNEL CONTACTED DURING AUDIT A-17-23				
NAME	TITLE/ORG	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST AUDIT MEETING
Randy Fitzgerald	AK Technical Specialist / CTAC			
Lisa Frost	CH TRU Program / Fluor-Idaho	X	X	X
Paul Gomez	QA Auditor / CTAC	X		
Michael Grenfell	VPM - CH FGA / NWP-CCP	X		X
Joe P. Harvill	CE DTC / NWP-CCP	X	X	X
Kyle Hoggatt	AKE / NWP-CCP	X	X	
Bobby Hunt	QA Auditor / CTAC	X		
Carrie Johnson	AKE / NWP-CCP	X	X	
Richard Kantrowitz	SPM / NWP-CCP	X	X	
Creta Kirkes	WCO / NWP-CCP		X	
Greg Knox	RTR Technical Expert - QA Auditor / CTAC	X		
Benjamin Leake	Observer / DOE-ID	X		
Ronnie Lee	CCP Manager / NWP-CCP	X	X	X
Matt Leroch	QA Auditor / CTAC	X		X
Cindy Logan	VE Operator / Waste Management RH-TRU		X	
Ricardo Maestas	Observer / NMED	X		X
Porf Martinez	Audits and Assessments Manager / CTAC	X		X
Shelly Martinez	CE NDE / NWP-CCP	X	X	
John McCoy	RH - CH TRU Program Manager / Fluor Idaho	X	X	X

PERSONNEL CONTACTED DURING AUDIT A-17-23				
NAME	TITLE/ORG	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST AUDIT MEETING
Dennis S. Miehls	Senior QA Specialist / CBFO	X		X
Jeri Miles	CH Project Manager / NWP-CCP	X	X	X
Jim Morrison	NCR / NWP-CCP		X	
James R. Oliver	DTC Technical Specialist / CTAC	X		
Berry Pace	Records - Issues Manager CCP Support Services / NWP-CCP	X		X
J. Bret Parmer	VE Operator / Waste Management RH-TRU		X	
Spencer Pattee	VEE - Vendor Project Manager / NWP-CCP	X	X	X
Sheila Pearcy	CCP Records Manager / CCP-TFE	X	X	X
David Pinnock	Operator DTC / NWP-CCP		X	
Jeff Poole	VPM / NWP-CCP	X	X	X
Brandye Pyeatt	QA Analyst / NWP QA		X	X
Mike Ramirez	CCP Manager / NWP-CCP		X	
Tim Runyan	Project Manager / CTAC	X		
Jim Schuetz	QA Lead Auditor / CTAC	X		X
Scott Smith	AKE / NWP-CCP	X	X	
Michael Swensen	Engineer / Waste Management RH-TRU		X	
Brett Templeton	Lead Operator RH DTC / NWP-CCP		X	
Brian Tousley	QA Auditor / CTAC	X		X

PERSONNEL CONTACTED DURING AUDIT A-17-23				
NAME	TITLE/ORG	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST AUDIT MEETING
Roger Vawter	QA Auditor / CTAC	X		
Jim Vernon	QA Lead Auditor / CTAC	X		X
B.J. Verret	Technical Specialist - QA Auditor / CTAC	X		
Priscilla Yanez	QA Auditor / CTAC	X		X
Jewell Yturralde	Records Analyst / CCP-TFE	X		X
Veronica Ballew	NWP Quality Assurance	X		X

Summary Table of Audit Results for A-17-23

Documents	Concern Classification				QA Evaluation		Technical
	CARs	CDAs	Obs	Rec	Adequacy	Implementation	Effectiveness
Activity							
Program Status/Interface					A	S	E
Acceptable Knowledge and Waste Certification					A	I*	I*
Project Level V&V		1			A	S	E
WWIS/WDS					A	I	I
Real-Time Radiography					A	S	E
Visual Examination					A	S	E
Dose-to-Curie					A	S	E
Container Management					A	S	E
Training			1		A	S	E
Nonconformance Reporting	17-039				A	S	E
QA Records					A	S	E
TOTALS	1	1	1	0			

Definitions

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

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

Rec =Recommendation
A = Adequate
NA = Not Adequate

* - Indeterminate with the exception of AK for the ID-RF-S3114 CH waste stream, SCG S3000.

LISTING OF AUDITED DOCUMENTS FOR A-17-23			
	Document No.	Rev	Document Title
1.	CCP-PO-001	22	CCP Transuranic Waste Characterization Quality Assurance Project Plan
2.	CCP-PO-002	29	CCP Transuranic Waste Certification Plan
3.	CCP-PO-003	14	CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC)
4.	CCP-PO-005	28	CCP Conduct of Operations
5.	CCP-PO-016	6	CCP Gas Generation Testing Program Quality Assurance Project Plan
6.	CCP-PO-024	16	CCP/INL Interface Document
7.	CCP-PO-045	2	CCP Waste Management Field Observation
8.	CCP-PO-047	1	CCP Training and Qualification Program Document
9.	CCP-PO-501	10	CCP/INL RH TRU Waste Interface Document
10.	CCP-PO-505	3	CCP RH Transuranic Waste Authorized Methods for Payload Control (CCP RH-TRAMPAC)
11.	CCP-QP-001	9	CCP Graded Approach
12.	CCP-QP-002	42	CCP Training and Qualification Plan
13.	CCP-QP-005	25	CCP TRU Nonconforming Item Reporting and Control
14.	CCP-QP-008	26	CCP Records Management
15.	CCP-QP-010	27	CCP Document Preparation, Approval, and Control
16.	CCP-QP-016	23	CCP Control of Measuring and Test Equipment
17.	CCP-QP-017	4	CCP Identification and Control of Items
18.	CCP-QP-022	18	CCP Software Quality Assurance Plan
19.	CCP-QP-028	17	CCP Records Filing, Inventorying, Scheduling, and Dispositioning
20.	CCP-QP-037	3	CCP Calculations
21.	CCP-QP-041	1	CCP Job Needs Analysis and Design
22.	CCP-QP-042	1	CCP Project Level Training and Qualification
23.	CCP-QP-043	1	CCP Operations Level Training and Qualification
24.	CCP-TP-001	21	CCP Project Level Data Validation and Verification
25.	CCP-TP-002	26	CCP Reconciliation of DQOs and Reporting Characterization Data
26.	CCP-TP-005	29	CCP Acceptable Knowledge Documentation
27.	CCP-TP-028	10	CCP Radiographic Test Drum and Training Container Construction
28.	CCP-TP-030	36	CCP CH TRU Waste Certification and WWIS/WDS Data Entry
29.	CCP-TP-033	23	CCP Shipping of CH TRU Waste
30.	CCP-TP-058	6	CCP NDA Performance Demonstration Plan
31.	CCP-TP-068	12	CCP Standardized Container Management
32.	CCP-TP-082	10	CCP Waste Container Filter Vent Operation
33.	CCP-TP-083	8	CCP Gas Generation Testing
34.	CCP-TP-138	2	CCP Execution of Long-Term Objective for the Unified Flammable Gas Test Procedure
35.	CCP-TP-163	4	CCP Evaluation of Waste Packaging Records for Visual

LISTING OF AUDITED DOCUMENTS FOR A-17-23			
	Document No.	Rev	Document Title
			Examination of Records
36.	CCP-TP-200	2	Chemical Compatibility Evaluation Memorandum and Acceptable Knowledge Assessment Review
37.	CCP-TP-201	0	Verification of Shipping Criteria and Emplacement Criteria
38.	CCP-TP-500	15	CCP Remote-Handled Waste Visual Examination
39.	CCP-TP-504	18	CCP Dose-to-Curie Survey Procedure for Remote-Handled Transuranic Waste
40.	CCP-TP-506	5	CCP Preparation of the RH TRU Waste AK Characterization Reconciliation Report
41.	CCP-TP-507	8	CCP Shipping of Remote-Handled Transuranic Waste
42.	CCP-TP-508	11	CCP RH Standard Real-Time Radiography Inspection Procedure
43.	CCP-TP-509	6	CCP Remote-Handled Transuranic Container Tracking
44.	CCP-TP-512	6	CCP Remote-Handled Waste Sampling
45.	CCP-TP-530	12	CCP RH TRU Waste Certification and WWIS/WDS Data Entry
46.	DOE/WIPP 06-3345	10	Waste Isolation Pilot Plant Flammable Gas Analysis Procedure
47.	WP 13-QA.03	26	Quality Assurance Independent Assessment Program

Processes and Equipment Reviewed During Audit A-17-23 of the INL/CCP

WIPP #	Process/Equipment Description	Applicable to the Following Waste Streams/Groups of Waste Streams	Currently Approved by NMED	Currently Approved by EPA
NEW PROCESSES OR EQUIPMENT				
--	NO NEW PROCESSES	--	--	--
<u>PREVIOUSLY APPROVED PROCESSES OR EQUIPMENT</u>				
14601C2	Radiological characterization analysis using ORIGEN 2.2 As identified in CCP-RC-INL-601	Debris (S5000)	N/A	YES
14631C3	Radiological characterization neutron dose-to-curie (DTC) method by confirmation As identified in CCP-RC-INL-631	Debris (S5000)	N/A	YES
14RHVE1	Visual Examination Procedure – CCP-TP-500 Description – The VE of audio/video media process used for a total of 70 retrievably stored remote-handled (RH) debris waste drums	Solids (S3000) Soils (S4000) Debris (S5000)	YES	YES
14RRH1	Nondestructive Examination Procedure – CCP-TP-508 Equipment – RTR-RTR-0659 Description – VJ Technologies, Real-time Radiography Characterization (RH-RTR-0659) System	Solids (S3000) Debris (S5000)	YES	YES

Processes and Equipment Reviewed During Audit A-17-23 of the INL/CCP

WIPP #	Process/Equipment Description	Applicable to the Following Waste Streams/Groups of Waste Streams	Currently Approved by NMED	Currently Approved by EPA
N/A	Acceptable Knowledge	Solids (S3000) Soils (S4000) Debris (S5000)	YES	YES
N/A	Data Validation and Verification	Solids (S3000) Soils (S4000) Debris (S5000)	YES	YES
N/A	WIPP Waste Information System (WWIS)/Waste Data System (WDS)	Solids (S3000) Soils (S4000) Debris (S5000)	YES	YES
14DTC1	Radiological characterization process using dose-to-curie (DTC) and modeling-derived scaling factors for assigning radionuclide values to RH waste stream Dose-rate fractional contribution of Cs-137 and Co-60 using OSPREY La ₃ Br(Ce) gamma detector Procedure CCP-TP-504	Solids (S3000) Debris (S5000)	N/A	YES

Processes and Equipment Reviewed During Audit A-17-23 of the INL/CCP

WIPP #	Process/Equipment Description	Applicable to the Following Waste Streams/Groups of Waste Streams	Currently Approved by NMED	Currently Approved by EPA
14GG1	Gas Generation Testing Procedure – CCP-TP-083 Equipment – MGSS Unit/Cart 1 (GC-14B) Description – Gas Generation Testing 55-gallon drums	Waste Type IV	N/A	N/A
14GG2	Gas Generation Testing Procedure – CCP-TP-083 Equipment – MGSS Unit/Cart 2 (GC-17A) Description – Gas Generation Testing 55-gallon drums	Waste Type IV	N/A	N/A
N/A	Quality Assurance Program	Solids (S3000) Soils (S4000) Debris (S5000)	N/A	YES

* Indicates equipment currently deactivated that was used to generate BDRs prior to October 1, 2015. The program and procedures associated with the equipment and the BDRs will be evaluated as part of the scope of Audit A-17-23.