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memorandum

Carlsbad Field Office
Carlsbad, New Mexico 88221

JUL 2012

DATE: JUL 12 2012

REPLY TO ATTN OF: CBFO:OQA:CF:CC:12-1455:UFC 2300.00

SUBJECT: Interim Audit Report A-12-13, INL/CCP TRU Waste Characterization and Certification of CH and RH Waste Activities

TO: Jerry Wells, DOE-ID

The Carlsbad Field Office (CBFO) conducted Annual Recertification Audit A-12-13, Idaho National Laboratory/Central Characterization Project (INL/CCP) Transuranic (TRU) Waste Characterization and Certification of Contact-Handled (CH) and Remote-Handled (RH) Waste Activities, June 11 – 14, 2012. The subject CBFO interim audit report is attached.

The audit team concluded that overall, the INL/CCP implementing procedures are adequate relative to the flow-down of requirements. The audit team determined that the INL/CCP technical requirements are being satisfactorily implemented and are effective in all areas except those documented in the audit report.

As a result of the audit, two CBFO Corrective Action Reports were issued. Four Conditions Adverse to Quality, isolated in nature, were corrected during the audit. The audit team identified two Observations during the audit and offered three Recommendations to INL/CCP management for consideration.

If you have any questions, please contact me at (575) 234-7065.

Randy Unger, Director
Office of Quality Assurance

Attachment

120712

cc: w/attachment

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J. Carter, WTS/CCP	ED
J. Hoff, WTS	ED
M. Mullins, WTS	ED
T. Peake, EPA	ED
M. Eagle, EPA	ED
E. Feltcorn, EPA	ED
R. Joglekar, EPA	ED
S. Ghose, EPA	ED
R. Lee, EPA	ED
J. Kieling, NMED	ED
T. Kliphuis, NMED	ED
S. Holmes, NMED	ED
R. Maestas, NMED	ED
T. Kesterson, NMED/DOE OB	ED
J. Marple, NMED/DOE OB	ED
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G. Lyshik, LANL-CO	ED
M. Mager, CTAC	ED
G. White, CTAC	ED
T. Bowden, CTAC	ED
WWIS Database Administrators	ED
WIPP Operating Record	ED
CBFO QA File	
CBFO M&RC	

*ED denotes electronic distribution

U.S. DEPARTMENT OF ENERGY
CARLSBAD FIELD OFFICE

INTERIM AUDIT REPORT

OF THE

IDAHO NATIONAL LABORATORY
CENTRAL CHARACTERIZATION PROJECT

IDAHO FALLS, IDAHO,
AND CARLSBAD, NEW MEXICO

AUDIT NUMBER A-12-13

June 11 – 14, 2012

TRU WASTE CHARACTERIZATION AND CERTIFICATION OF CONTACT-HANDLED (CH) AND REMOTE-HANDLED (RH) WASTE ACTIVITIES

Prepared by: Tamara D. Bowden **Date:** 7/9/12
Tamara D. Bowden, CTAC
Audit Team Leader

Approved by: R. [illegible] **Date:** 11 July 12
Randy Unger, CBFO
Quality Assurance Director

1.0 EXECUTIVE SUMMARY

Carlsbad Field Office (CBFO) Recertification Audit A-12-13 was conducted to evaluate the continued adequacy, implementation, and effectiveness of Idaho National Laboratory (INL) transuranic (TRU) waste characterization activities performed for INL by the Washington TRU Solutions, LLC (WTS) Central Characterization Project (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), the *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant* (WAC), the *Remote-Handled TRU Waste Characterization Program Implementation Plan* (WCPIP), the *CCP Transuranic Authorized Methods for Payload Control* (CCP CH-TRAMPAC), and the *CCP Remote-Handled Transuranic Waste Authorized Methods for Payload Control* (CCP RH-TRAMPAC).

The audit team evaluated contact-handled (CH) Summary Category Groups (SCGs) S3000 homogeneous solids waste, S4000 soils/gravel waste, and S5000 debris waste, and remote-handled (RH) SCGs S3000 homogeneous solids waste and S5000 debris waste, in addition to other technical elements, quality assurance (QA) elements, and transportation activities. The specific items audited are listed in section 2.1.

The audit was conducted at the INL/CCP facility near Idaho Falls, Idaho, and the WTS/CCP facilities in Carlsbad, New Mexico, June 11 – 14, 2012. The audit team concluded that INL/CCP adequately incorporates upper-tier requirements into their program plans and procedures. The audit team verified that the INL/CCP program for characterization and certification activities related to CH SCGs S3000 homogeneous solids, S4000 soils/gravel, and S5000 debris wastes, and RH SCGs S3000 homogeneous solids and S5000 debris wastes, continue to be adequate, satisfactorily implemented, and effective.

The audit team identified eight Conditions Adverse to Quality (CAQs) in the areas of real-time radiography (RTR), project-level data verification and validation (V&V), and transportation. Three CAQs were identified during evaluation of transportation activities. The CAQs were similar in nature and were combined to create CBFO Corrective Action Report (CAR) 12-026. Five CAQs were identified during review of RTR and project-level batch data reports (BDRs). These five CAQs were also similar in nature and were therefore combined to create CBFO CAR 12-027. The CARs are discussed in detail in section 6.1.

Four deficiencies, isolated in nature and requiring only remedial corrective action, were identified and Corrected During the Audit (CDA). See section 6.2 for details. Two Observations were identified during the audit, and three recommendations are being offered for management consideration. See sections 6.3 and 6.4 for details.

2.0 SCOPE AND PURPOSE

2.1 Scope

The audit team evaluated the continued adequacy, implementation, and effectiveness of the INL/CCP TRU waste characterization and certification activities for CH SCGs S3000 homogeneous solids, S4000 soils/gravel, and S5000 debris wastes, and RH SCGs S3000 homogeneous solids and S5000 debris wastes. The following elements were evaluated:

General

- Results of previous audits
- Changes in programs or operations
- New programs or activities being implemented
- Changes in key personnel

Quality Assurance

- Personnel Qualification and Training
- Nonconformance Reporting
- Records

Technical Activities

WTS/CCP (Carlsbad)

- Acceptable Knowledge (AK)/Waste Certification
- Project-level Data Verification and Validation (V&V)
- WIPP Waste Information System (WWIS)/Waste Data System (WDS)

INL/CCP (Idaho Falls)

- Real-time Radiography (RTR)
- Visual Examination (VE)
- Headspace Gas (HSG) Sampling
- Solids Sampling and Analysis
- Nondestructive Assay (NDA)
- Dose-to-Curie (DTC)
- Flammable Gas Analysis
- Gas Generation Testing Program (GGTP)
- Leak Testing
- Container Management
- TRUPACT-II Operations/Transportation

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

Waste Isolation Pilot Plant Hazardous Waste Facility Permit NM4890139088-TSDF (HWFP)

Quality Assurance Program Document, DOE/CBFO-94-1012

Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant, DOE/WIPP-02-3122

Remote-Handled TRU Waste Characterization Program Implementation Plan, DOE/WIPP-02-3214

TRUPACT-II Safety Analysis Report: Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC), and the TRUPACT-II Certificate of Compliance NRC 71-9218

RH-TRU 72-B Safety Analysis Report: Remote-Handled Transuranic Waste Authorized Methods for Payload Control (RH-TRAMPAC), and the RH-TRU 72-B Certificate of Compliance NRC 71-9212

CCP Transuranic Waste Characterization Quality Assurance Project Plan, CCP-PO-001

CCP Transuranic Waste Certification Plan, CCP-PO-002

CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC), CCP-PO-003

CCP Remote-Handled Transuranic Waste Authorized Methods for Payload Control (CCP RH-TRAMPAC), CCP-PO-505

CCP/INL Interface Document, CCP-PO-024

CCP/INL RH TRU Waste Interface Document, CCP-PO-501

Related technical and quality assurance implementing procedures

2.2 Purpose

Audit A-12-13 was conducted to assess the level of compliance of waste characterization and certification activities for CH SCGs S3000 homogeneous solids, S4000 soils/gravel, and S5000 debris wastes, and RH SCGs S3000 homogeneous solids and S5000 debris wastes.

3.0 AUDIT TEAM AND OBSERVERS

AUDITORS/TECHNICAL SPECIALISTS

Courtland Fesmire	Management Representative, CBFO Office of Quality Assurance
Tamara Bowden	Audit Team Leader, CBFO Technical Assistance Contractor (CTAC)
Randall Allen	Auditor, CTAC
Charlie Riggs	Auditor, CTAC
Cindi Castillo	Auditor, CTAC
Greg Knox	Auditor, CTAC
Rick Castillo	Auditor, CTAC
Berry Pace	Auditor, CTAC
Jack Walsh	Auditor, CTAC
Katie Martin	Auditor, CTAC
Tommy Putnam	Technical Specialist, CTAC
Porf Martinez	Technical Specialist, CTAC
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Rhett Bradford	Technical Specialist, CTAC
B.J. Verret	Technical Specialist, CTAC
Dick Blauvelt	Technical Specialist, CTAC
Jim Oliver	Technical Specialist, CTAC
Robbie Morrison	Technical Specialist, WTS

OBSERVERS

Tom Morgan	CBFO Office of the National TRU Program (NTP)
Kenneth Lickliter	Tech Specs/NTP
Steve Holmes	New Mexico Environment Department (NMED)
Ricardo Maestas	NMED
Michel Hall	Portage, Inc.

4.0 AUDIT PARTICIPANTS

INL/CCP individuals involved in the audit process are identified in Attachment 1. A preaudit meeting was held at INL/CCP site near Idaho Falls, ID, and the Skeen-Whitlock Building in Carlsbad, NM, June 11, 2012. Daily briefings were held with INL/CCP management and staff to discuss issues and potential deficiencies. The audit was concluded with a post-audit meeting held at the INL/CCP site near Idaho Falls, ID, and in the Skeen-Whitlock Building in Carlsbad, NM, on June 14, 2012.

5.0 SUMMARY OF AUDIT RESULTS

5.1 Program Adequacy, Implementation, and Effectiveness

The audit team concluded that the applicable INL/CCP TRU waste characterization activities, as described in the associated implementing procedures, are adequate, satisfactorily implemented, and effective. Audited activities are described below.

Attachment 2 contains a Summary Table of Audit Results. Attachment 3 contains a list of documents that were assessed during in the audit. Attachment 4 contains a list of the processes and equipment evaluated.

The audit team identified eight conditions adverse to quality, which were combined based on their similarity, and resulted in the issuance of CBFO CARs 12-026 and 12-027. Four deficiencies, isolated in nature and requiring only remedial corrective action, were identified and corrected during the audit. Two Observations were identified during the audit, and three Recommendations are being offered for management consideration. The CARs, CDAs, Observations, and Recommendations are described in section 6.

5.2 General Activities

5.2.1 Results of Previous Audits

During the audit, the audit team verified that corrective actions for CAQs documented during the previous INL/CCP Recertification Audit, A-11-14, were being satisfactorily implemented and maintained. Corrective actions for CBFO CAR 11-042 (RH Operator Training) were found to be satisfactorily implemented and maintained. Corrective actions for CBFO CAR 11-043 (AK) were also found to be satisfactorily implemented and maintained.

5.2.2 Changes in Program or Operations

INL/CCP has begun to characterize RH S3000 waste using the RTR characterization method at the INTEC facility. CBFO conducted Surveillance S-12-20 on May 7, 2012, to observe RTR operations on RH S3000 solids waste, with the understanding that a review of completed BDRs and operator qualification would be evaluated during INL/CCP Recertification Audit A-12-13. See section 5.4.4 for details.

5.2.3 New Programs or Activities Being Implemented

No new programs or activities have been implemented since the performance of Audit A-11-14.

5.2.4 Changes in Key Personnel

The audit team identified one significant change in Key Personnel. The previous vendor project manager (VPM), Mr. Ted Carlsen, was replaced by Ms. Jeri Miles.

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 met the requirements of the CBFO *Quality Assurance Program Document* (QAPD), and CCP-QP-002, Rev. 32, *CCP Training and Qualification Plan*. Training and

qualification records for the following positions were reviewed: CH waste and RH waste Acceptable Knowledge Experts (AKEs); Site Project Managers (SPMs); HSG Operators/Independent Technical Reviewers (ITRs); Flammable Gas Analysts (FGAs); Nondestructive Assay (NDA) Operators/ITRs; NDA Expert Analysts; Dose-to-Curie Survey Operators/ITRs; VE Operators/ITRs; and Nondestructive Examination (NDE) RTR Operators/ITRs.

Records reviewed included the INL CH Program List of Qualified Individuals (LOQI) dated 6/11/12, the RH Program LOQI dated 6/11/12, subject matter expert/on-the-job-training appointment letters, test drum (capability demonstrations) and training container documentation, and annual eye examination forms for NDE RTR Operators.

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 and effective.

5.3.2 Nonconformance Reporting

The audit team conducted interviews and implementing procedure CCP-QP-005, Revision 21, *CCP TRU Nonconforming Item Reporting and Control*, to determine the degree to which the procedure adequately addresses upper-tier requirements.

The audit team interviewed the project office quality assurance engineer and then randomly selected a sample of nonconformance reports (NCRs) for review (NCR-INL-0405-12, NCR-INL-0406-12, NCR-INL-0417-12, NCR-INL-3302-12, NCR-RHINL-2539-11, NCR-RHINL-2544-11, NCR-RHINL-0492-12, and NCR-RHINL-0494-12). The purpose of the NCR review was to confirm that administrative deficiencies are being appropriately documented and tracked through resolution, as required.

The audit team reviewed two NCRs (NCR-INL-3316-11 and NCR-INL-0396-12) that documented non-administrative deficiencies first identified at the SPM level, and determined that the deficiencies had been reported to the Permittee within seven days, as required. There were no reportable RH NCRs since the previous recertification audit. All NCRs were verified as being managed and tracked in the CCP data center and on the CCP NCR Logs. No RH project-level NCRs had been written since the previous recertification audit; therefore, an NCR Log was not created for RH project-level NCRs.

Overall, nonconformance activities were determined to be adequate, satisfactorily implemented, and effective.

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 procedures CCP-PO-001, Rev. 20, *CCP Transuranic Waste Characterization Quality*

Assurance Project Plan; CCP-QP-008, Rev. 19, *CCP Records Management*; and CCP-QP-028, Rev. 14, *CCP Records Filing, Inventorying, Scheduling, and Dispositioning.* Control of QA records was verified through review of the CH Records Inventory and Disposition Schedule (RIDS) dated 8/15/2011, and the RH RIDS dated 8/15/2011.

Two concerns were identified during the course of the audit that were classified as Recommendations. The first concern was related to training qualification card documentation that is submitted to NMED and for public access, which was marked: *Private Information; Authorized Personnel Only; Controlled Disposal is Required.* The audit team recommends that CCP evaluated its Personally Identifiable Information (Pii) process to determine if these training qualification cards should be made public. (see Recommendation 1 in section 6.4)

During evaluation of training qualification card documentation that is submitted to NMED and also for public access, the audit team determined that documents had been copied on a color copier and therefore the "ORIGINAL" stamp on the copies is in color (either red or blue). As a result, it was difficult to determine if these documents are the originals or copies of the originals. The audit team recommends that these documents be scanned into the records center in black and white (see Recommendation 2, section 6.4)

The audit team determined that Records activities were adequate, satisfactorily implemented, and effective.

5.4 Technical Activities

Audit team evaluations of applicable INL/CCP technical activities are summarized in the following subsections.

5.4.1 Acceptable Knowledge/Waste Certification

The audit team reviewed AK program documentation for the CH debris waste stream ID-SNL-SOURCES-S5400, originally generated at Sandia National Laboratories (SNL) and shipped to INL for Waste Isolation Pilot Plant (WIPP) characterization and certification; CH solids stream ID-RF-S3114 from Rocky Flats Environmental Technology Site (RFETS); CH soils stream ID-SDA-SOIL from the excavation of the Idaho Subsurface Disposal Area (SDA); and an RH TRU debris stream, IN-ID-NRF-SPC, from the INL Naval Reactors Facility. With respect to review of the AK record for an RH S3000 waste stream, the RH solids waste stream, ID-RTC-S3000 that had been examined during the last few audits has been completely shipped to WIPP. The audit team therefore reviewed the available AK record for waste stream IN-ID-BTO-030. This waste stream was generated at Bettis Laboratory, then shipped to INL where it is being processed for WIPP. An approved AK Summary and all applicable AK attachments have been prepared and were reviewed along with an RTR BDR generated as a result of CBFO Surveillance S-12-20 to approve the RTR process for RH S3000 waste streams.

The objective evidence compiled and reviewed included the AK Summary Reports, numerous AK source documents, WAP-compliant Waste Stream Profile Forms (WSPFs) and attachments, and BDRs for HSG, Solids Sampling & Analysis, VE, RTR, and NDA. Random container selection memos for HSG and solids sampling lots, as appropriate, were reviewed along with corresponding HSG and Solids Analysis Summary Reports. Additional supporting documentation for the WCPIP requirements included Characterization Reconciliation Reports and supporting documentation, and DTC BDRs. Examples from the AK record were reviewed to assure that all of the data quality objectives cited in the WCPIP were met. In addition, the auditors examined the AK record regarding the methods for qualification of AK information as required by the WCPIP.

The audit team reviewed for each waste stream the AK Documentation Checklist, attachment 1; the AK Information List, attachment 4; the AK Hazardous Constituents List, attachment 5; the AK Waste Form, Waste Material Parameters, Prohibited Items and Packaging attachment 6, along with the applicable justification memo for waste material parameter weight estimates; and the AK Container List, attachment 8, with memos supporting the process for adding containers to the waste streams.

Examples of the resolution of AK discrepancies in the AK record and at characterization, NCRs dealing with prohibited items, AK Accuracy Reports, and the most recent internal surveillance were also collected and examined, along with screenshots from the DTC database. The audit team reviewed requisite training records for AKEs and SPMs. The WAP-required container traceability exercise was conducted for 11 waste containers from the five waste streams. The drums selected provided BDRs for RTR, VE, HSG sampling and analysis, solids sampling and analysis, NDA, and DTC.

The audit team identified three concerns as a result of audit activities. The first concern, classified as a recommendation, dealt with several clarifying changes/additions to the five AK Summaries, which are to be incorporated into freeze files (see Recommendation 3 in section 6.4).

The second concern, classified as a CDA, addressed the need to document the addition of approximately 250 containers to waste stream ID-RF-S3114. These containers were appropriately added to the AK Attachment 8 container list, but the add-container memo was not prepared. The memo was completed and added to the AK record for this stream prior to the end of the audit. (see CDA 2, section 6.2).

The third concern, classified as a CDA, dealt with inconsistencies in two AK attachments for waste stream IN-ID-BTO-030. On AK Attachment 5, Hazardous Constituents, three constituents that are expected in this waste stream were marked as "not expected" and entries in the column for potentially flammable VOCs were omitted. Neither of these issues had any impact on the assignment of hazardous waste numbers. Attachment 15, CCP TRU Waste Correlation and Surrogate Summary Form, for waste stream IN-ID-BTO-030 contained a sentence that indicted that the radiological data for waste stream BT-T001 would be used to represent IN-ID-BTO-030. While the

data are similar, the current plan is to sample IN-ID-BTO-030 and compile a distinct radiological data set. The sentence was removed prior to the end of the audit and the amended attachment was resubmitted to records. (see CDA 3, section 6.2)

Overall, Acceptable Knowledge/Waste Certification activities were determined to be adequate in addressing upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.4.2 Project-level Data Verification and Validation

Project-level reviews were performed to assess the data collected as a result of the on-going waste characterization implementing procedures. The ability of the INL/CCP to perform project-level data verification and validation activities on SCG S3000, SCG S4000, and SCG S5000 waste was evaluated. The flow of data from the point of generation to inclusion in the WSPF for each characterization technique was reviewed to ensure that all applicable requirements were captured in the site operating procedures.

The material in this section is also addressed in more detail in the WAP checklists, where the specific procedures audited and the objective evidence reviewed are identified. Objective evidence was reviewed as part of this assessment and utilized in the completion of Table C6-1, the WAP Checklist. The objective evidence included BDRs completed through the CCP SPM review for RTR, VE, HSG sampling and analysis, and soils/gravel and solids sampling and analysis. In addition, procedures were reviewed to ensure that INL/CCP could adequately perform data reconciliation and properly prepare a WSPF.

Compliance with WAP characterization requirements was demonstrated through documentation and by demonstrating the characterization activities. The project-level data V&V process was evaluated by reviewing the following BDRs:

RTR

INRTR5110051	INRTR5110056	INRTR5110085	INRTR5110105
INLRHRTR12002	INLRHRTR12006		

VE

IN-ARP-VE-002704	IN-ARP-VE-002729	IN-ARP-VE-002735
VSC11-00008	VSC11-00035	INLRHVE11003

Headspace Gas Sampling and Analysis

INHSG1105	ECL11018G	ECL11018M
INHSG1108	ECL11030G	ECL10030M
INHSG1110	ECL11035M	
INHSG1112	ECL10038M	
INHSG1113	ECL11037M	

Solids – Soils/Gravel Sampling and Analysis

SSG11-00008	ALD11029V	ALD11029S	ALD11029N	ALD11029M

S4200-LOT-05-07 ALD12005V ALD12005S ALD12005N ALD12005M
S4200-LOT-05-08

NDA/DTC
INNDAH110067 INNDAH100101 INNDAS110080 INNDAS110111
INNDAS100120 INNDAW110077 INNDAW110180 INNDAW110181
INNDAW120001 INLRHDTC11006 INLRHDTC12003

Some of the BDRs cited were used to demonstrate confirmation of AK, to reconcile DQOs, and to prepare WSPFs for the following waste streams:

ID-SA-T001 ID-NRD.1 ID-SNL-HCF-S5400 D-AECHHM
ID-SNL-SOURCES-S5400 IN-ID-NRF-SPC

Objective evidence was reviewed to ensure project-level activities were adequately performed to support waste characterization. The quarterly repeat of data generation-level requirements for RTR, HSG sampling and analysis, solids sampling and analysis, and VE was requested and evaluated. INL/CCP provided quarterly data of all characterization processes for review.

Table C6-2: Objective evidence from the SPM for the INL/CCP evaluation was reviewed for solids and soils/gravel waste. The following BDRs from Argonne-East and the Accelerated Retrieval Project (ARP) for both sampling and analysis were provided:

SSG11-00008 ALD11029V ALD11029S ALD11029N ALD11029M
S4200-LOT-05-07 ALD12005V ALD12005S ALD12005N ALD12005M
S4200-LOT-05-08

The BDRs were evaluated by the audit team. The soils/gravel BDRs (beginning with S4200) were combined at the labs as a sample delivery group and provided by the Analytical Lab Department under the ALD12005 series of deliverables. Sample dispositions were adequately and properly performed.

The audit team concluded that the INL/CCP solids sampling and analysis V&V processes are adequate, satisfactorily implemented, and effective.

Table C6-3: A review of the most current documentation was performed of the WSPF Characterization Information Summary (WSPF/CIS) for RH and CH S5000 and S3000 waste streams. The waste streams are identified as:

ID-SA-T001 ID-NRD.1 ID-SNL-HCF-S5400
ID-AECHHM ID-SNL-SOURCES-S5400 IN-ID-NRF-SPC

The random selection of containers for these initial waste streams and other lots in support of the existing waste steams was properly completed. The audit team concluded that the INL/CCP Waste Stream identification processes are adequate, satisfactorily implemented, and effective.

Table C6-4: INL/CCP performs HSG sampling using SUMMA® canisters. Sampling BDRs INHSG1105, INHSG1108, INHSG1110, INHSG1112, and INHSG1113 for S5000 debris waste were examined. Drum age criteria, sample chain-of-custody, and shipment to the analytical laboratory were reviewed and determined to be compliant. The HSG analysis of the SUMMA® samples was reviewed by the audit team, as well as the training and qualification of data V&V personnel. The analysis and reporting of the Field Reference Standard was completed. Sample disposition was adequately performed.

The audit team concluded that the INL/CCP HSG sampling and analysis PL V&V processes are adequate, satisfactorily implemented, and effective.

Table C6-5: The INL/CCP RTR and VE project-level reviews were evaluated to determine effectiveness by reviewing BDRs INRTR5110051, INRTR5110056, INRTR5110085, INRTR5110105, INLRHRTR12002 and INLRHRTR12006. VE BDRs IN-ARP-VE-002704, IN-ARP-VE-002729, IN-ARP-VE-002735, VSC11-00008, VSC11-00035, and INLRHVE11003 were also assessed by the audit team.

The audit team identified two concerns during the audit. The first concern, classified as a CAQ, dealt with the SPM review of BDR INRTR5110051 initially indicating no NCR was associated with the containers in the BDR. An NCR had been associated with the containers by the time the SPM initially reviewed and signed (5/19/11) the SPM checklist. This CAQ is addressed in CAR 12-027 (see section 6.1).

The second concern, classified as a CAQ, dealt with the objective evidence in BDR INRTR5110085. The container inventory for drum ND1081R includes metal framed high-efficiency particulate air (HEPA) filters. Section 4, Packaging Materials and Waste Material Parameters, did not indicate the presence of any metal material. The SPM failed to indicate on attachment 2, question 21 and 22, the estimated weight and the presence of metal in the container. This CAQ was also incorporated into CAR 12-027 (see section 6.1).

The audit team concluded that the INL/CCP PL V&V process for evaluating RTR and VE BDRs are adequate, satisfactorily implemented, and effective.

Dose-to-Curie (DTC) and Nondestructive Assay (NDA): The audit team evaluated the project-level data V&V process for DTC and NDA reviewing BDRs INNDAH110067, INNDAH100101, INNDAS110080, INNDAS110111, INNDAS100120, INNDAW110077, INNDAW110180, INNDAW110181, INNDAW120001, INLRHDTC11006, and INLRHDTC12003.

The DTC and NDA PL V&V procedures and processes were found to be adequate, satisfactorily implemented, and effective.

With the exception of the concerns resulting in CAR 12-027, the audit team found Project-level Data Verification and Validation activities to be adequate, satisfactorily implemented, and effective.

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

The audit team evaluated the implementation of the CCP TRU Waste Certification and WWIS/WDS data entry procedure for data entry using the WWIS/WDS data entry spreadsheet. The evaluation included data population of the spreadsheet, review of data entry by a Waste Certification Assistant (WCA), and waste certification by the Waste Certification Official (WCO). Records reviewed included container information summaries, pages from BDRs showing analyses values, WWIS/WDS Container Data Reports, and submittals for WWIS review/approval.

The audit team reviewed one WWIS/WDS waste certification package for RH waste canister ID0278, which had three internal containers (NRFTRUSPC055-1, NRFTRUSPC064-1, and NRFTRUSPC083-1). Three waste certification packages (ARP00349, ARP29364, and ARP70071) for CH waste were also reviewed.

Overall, the WWIS/WDS activities were determined to be adequate, satisfactorily implemented, and effective.

5.4.4 Real-time Radiography (RTR)

The audit team evaluated the adequacy, implementation and effectiveness of INL/CCP ability to characterize and certify CH and RH SCGs S3000 solids and S5000 debris waste using the RTR Characterization process.

The audit team evaluated the following RTR related CCP procedures: CCP-QP-002, Rev. 32, *CCP Training and Qualification Plan*; CCP-TP-028, Rev. 6, *CCP Radiographic Test Drum and Training Container Construction*; CCP-TP-053, Rev. 11, *CCP Standard Real-Time Radiography (RTR) Inspection Procedure*; and CCP-TP-508, Rev. 7, *Standard Real-Time Radiography Inspection Procedure.* The review determined that the procedures adequately address upper-tier requirements.

No RTR CH waste characterization activities were being performed during the audit. The audit team conducted a walk-through of the RTR Unit 5 (RTR-5) in Radioactive Waste Management Complex (RWMC) building WMF-610. The unit contained the required hardware to effectively characterize CH SCG S3000 solids waste and S5000 debris waste. The audit team interviewed RTR operators, reviewed CCP Standing Orders, and verified the availability of current AK summaries and RTR operating procedures. The audit team also examined RTR operational logbook CCP-INL-NDE5-008, and verified logbook entries were logged correctly and reviewed by the vendor project manager (VPM) as required.

No RTR RH waste characterization activities were being performed during the audit. The audit team conducted a walk-through of the RH RTR Unit 659 (RH-RTR-0659) at

the Idaho Nuclear Technology and Engineering Center (INTEC) facility in building 659. The unit contained the required hardware to effectively characterize RH SCG S3000 solids waste and S5000 debris waste. The audit team interviewed RTR operators, reviewed CCP Standing Orders, and verified the availability of current AK summaries and RTR operating procedures. The audit team also examined RTR operational logbook CCP-INL-RH-RTR-006, and verified logbook entries were logged correctly and reviewed by the VPM as required.

The audit team examined the following CH RTR BDRs:

INRTR5110063	INRTR5110103
INRTR5110088	INRTR5110107
INRTR5110094	INRTR5120003
INRTR5110100	

The audit team examined the following RH RTR BDRs:

INLRHRTR11006	INLRHRTR12006
INLRHRTR12002	INLRHRTR12010

The audit team reviewed BDR INLRHRTR12002 and associated audio/video media for purposes of certifying the RH RTR process for characterizing S3000 solids waste using RH RTR Unit 659 located in the INTEC facility. The audit team also evaluated training and qualification documentation for RH RTR operators performing characterization scans during CBFO Surveillance S-12-20, conducted on May 7, 2012. Results of the BDR and audio/video media review, and review of associated training documents in conjunction with the results of the referenced surveillance, indicated that INL/CCP has adequately incorporated upper-tier requirements into the operating plans and procedures to effectively characterize RH S3000 solids waste utilizing RH RTR Unit 659.

During the review of BDRs, the audit team identified three concerns, classified as CAQs, all in the area of ITR. During the ITR, a review is performed to criteria in the ITR checklist and the results are documented. The following were noted:

1) In the batch narrative for BDR INRTR5110094, container number 10046232 was recorded as 1004632. The ITR marked "Yes" on ITR checklist question 10, "Is all data recorded clearly, legibly, and accurately?" Neither the ITR nor the SPM identified the error.

2) In BDR INRHRTR11006, the ITR recorded "N/A" to ITR checklist question 8, "Are all changes to original data lined out, initialed, and dated?" The ITR also marked "N/A" to ITR checklist question 9, "Were data changes made by the individual who originally collected the data or individual authorized to change the data?" on 8/8/11. A change was made in the comment section on the RTR data sheet for container number NRFTRUSPC074-1 on 8/2/11. Neither the ITR nor the SPM identified the error.

3) In BDR INRHRTR12002, the ITR performed the review on 3/1/12 and recorded "Yes" to ITR checklist question 7, "Is all data recorded clearly, legibly, and accurately?" The RTR operator recorded an incorrect BDR number on the RTR Data Sheet for container ANLE33G on 2/28/12. On 3/7/12, after the ITR was performed, the correct BDR number was recorded on the RTR Data Sheet. The ITR did not identify the error.

These three CAQs were combined and incorporated into CBFO CAR 12-027 (see section 6.1).

The audit team evaluated RTR operator-required test and training drum audio/video media for eight RTR operators. Records of RTR operator training and qualification, including test and training drum documentation, were examined. The audit team verified that RTR operators were appropriately qualified as required. During the review of a RTR operator qualification card, the audit team identified an incomplete entry for the identification of a training container. CCP training personnel entered the training container identification number and the audit team was able to verify corrections were completed prior to the end of the audit (see CDA 4, section 6.2).

The audit team observed the CCP cognizant RTR engineer perform a training briefing focusing on the identification of items on both the audio/video media and the RTR data sheet, as well as the importance of completing the independent technical review accurately on the ITR checklist.

Overall, the RH and CH Real-time Radiography activities evaluated were determined to be adequate, satisfactorily implemented, and effective.

5.4.5 Visual Examination (VE)

The audit team observed CH VE activities performed by INL/CCP at the Accelerated Retrieval Project (ARP) Pit 7, Airlock 6 facility. For CH waste, VE is performed in accordance with CCP-TP-006, *CCP Visual Examination Technique for Idaho National Laboratory (INL) Newly Generated TRU Waste Retrieved From Pits*. RH VE activities are performed at the INTEC facility, although at the time of the audit, the team could not observe RH VE operations. For RH waste, VE is performed in accordance with CCP-TP-500, *CCP Remote-Handled Waste Visual Examination*.

The audit team reviewed and evaluated BDRs: IN-ARP-VE-002422, IN-ARP-VE-002470, IN-ARP-VE-002477, IN-ARP-VE-002577, IN-ARP-VE-002734, and INLRH-VE11003. Training records for VE operators and VE Experts were also reviewed.

The team identified two concerns that resulted in observations. VE Operators completing BDR INLRH-VE11003 did not follow step 4.1.2, sections F, G, and H of CCP-TP-500. In BDR INLRH-VE11003, containers FF-45A, B, C were signed by VE Operator 1 on 8/8/11, and by VE Operator 2 on 6/28/11. INL/CCP chose to continue with the original operator. Also, on Attachment 1 for containers FF-45A and FF-45B,

the wrong procedure was referenced. The procedure should be CCP-TP-500, but is listed as CPP-TP-500. (see Observation 1, section 6.3).

Attachment 1 of CCP-TP-006 does not provide a field to record the waste streams listed in CCP-AK-INL-001, yet SPMs and ITRs are required to verify that the correct waste streams are listed on the VE Data Form. SCGs are listed instead of appropriate waste streams. The audit team verified there were only three waste streams and they were identified as SCGs (see Observation 2, section 6.3).

Overall, the team determined that INL/CCP Visual Examination activities were adequate, satisfactorily implemented, and effective.

5.4.6 Headspace Gas (HSG) Sampling

No HSG sampling activities were being performed during the audit. HSG sampling operations were evaluated by examining the equipment, conducting personnel interviews, and reviewing HSG BDRs. BDRs INHSG1110, INHSG1112 and INHSG1115 were examined and found to be satisfactory. Training and qualification of sampling individuals were confirmed to be acceptable.

INL/CCP procedures for Headspace Gas Sampling and analysis were found to be adequate and HSG sampling operations were deemed to be satisfactorily implemented and effective.

5.4.7 Solids Sampling and Analysis

Solids sampling activities are performed in accordance with CCP-TP-008, *CCP Solids Sampling Procedure*, and CCP-TP-512, *CCP Remote-Handled Waste Sampling*. While no sampling activities were being performed during this audit, the audit team did tour the ARP and INTEC facilities where solid sampling activities occur. No data for RH solids sampling was generated since the last audit.

Four CH sampling BDRs for the ARP facility (S4200-LOT-05-03, S4200-LOT-05-06, S4200-LOT-05-07, and S4200-LOT-05-08) were reviewed by the audit team. There were no RH sampling process BDRs to review since the last audit. Training records for INL/CCP solids samplers were reviewed and sampling personnel were properly trained and qualified as required.

Overall, the team concluded the Solids Sampling and Analysis activities at the INL/CCP were adequate, satisfactorily implemented, and effective.

5.4.8 Nondestructive Assay (NDA)

The audit team assessed the adequacy, implementation, and effectiveness of the NDA systems used at INL as part of the CCP to characterize waste from SCGs S3000, S4000, and S5000. The audit team evaluated the Waste Assay Gamma Spectrometer

(WAGS), the SWEPP Gamma-Ray Spectrometer (SGRS), the High Efficiency Neutron Counter (HENC), and the Super High Efficiency Neutron Counter (SuperHENC).

The SGRS and WAGS are both gamma spectrometers with multiple high-resolution Broad Energy Germanium (BEGe) detectors. The WAGS uses six such detectors divided into two vertical banks of three detectors each. One bank is positioned opposite a set of three barium 133 (Ba-133) sources. These detectors are calibrated, based on a density correction obtained from the Ba-133 transmission, to quantify gamma-emitting radionuclides using the Canberra multi-group analysis (MGA) software. The second bank of three BEGe detectors uses cadmium filters to attenuate low-energy gamma rays, thus reducing dead time and increasing measurement resolution. The spectra obtained from these detectors are used to determine the relative isotopic ratios of gamma-emitting radionuclides. The SGRS differs from the WAGS in that it does not use a transmission source to perform a density correction. The SGRS utilizes four BEGe detectors that each acquires a gamma spectrum. The four spectra are then summed and corrected using a multi-curve correction that was developed during system calibration. This multi-curve correlates detector efficiency with waste density and gamma energy. Once the spectra are corrected, the same Canberra MGA software is used to quantify the individual radionuclides present. Both the WAGS and the SGRS can assay 55-gallon (208-liter) drums.

The HENC and SuperHENC are passive neutron counters. The HENC is fitted with an integral Cf-252 Add-A-Source for neutron correction. The gamma detectors simultaneously acquire spectra for both quantitative and isotopic analyses. A density based multi-curve correction is applied to correct waste density variations and variation effects on detected gamma rays. The HENC can assay 55-gallon (208-liter) drums. The SuperHENC differs from the HENC in that it does not have an integrated gamma spectrometer. The SuperHENC relies on isotopic distribution provided by either AK or an independent gamma measurement. The SuperHENC, however, can assay standard waste boxes (SWBs) as well as 55-gallon (208-liter) drums.

CBFO previously evaluated these NDA systems during Audit A-11-14.

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

- System stability as evidenced by the implementation and effectiveness of quality control measurements, calibration verifications and weekly interfering matrix checks
- Applicability of each system's calibration and operational range to the matrix, geometry and radionuclide content of samples assayed since the last audit
- Successful participation in the CBFO-sponsored NDA Performance Demonstration Program (PDP)
- Completed BDRs to ensure data are reported and reviewed as required

- Data storage and retrievability
- Personnel qualification and training
- Continued operability and condition of the WAGS, SGRS, HENC, and SuperHENC since Audit A-11-14

The audit team interviewed NDA personnel, observed equipment and practices, and examined electronic and paper copies of reports and records.

The SuperHENC participated in PDP Cycle 18A for drums along with the HENC, WAGS, and SGRS, assaying two waste matrices, including glass and metals. All four instruments passed all test criteria. The SuperHENC also participated in PDP Cycle B11A for boxed waste. The test matrices included combustibles and metals. The SuperHENC passed all test criteria for the metals matrix, but failed test criteria for the combustibles matrix. CCP/INL performed a thorough investigation into the failure to meet test criteria. No specific cause was identified for the test failure. CCP/INL was provided with a revised test configuration for the combustibles matrix. The results of this revised configuration passed all test criteria. Subsequently, CCP/INL reloaded the combustibles matrix box with the original loading configuration and performed three replicate measurements. Based on a review of the data sheets generated from the replicate measurements of the reloaded original test configuration and the passing results of the revised configuration, the SuperHENC was deemed to have successfully passed all PDP test criteria.

Overall, Nondestructive Assay activities were determined to be adequate, satisfactorily implemented, and effective.

5.4.9 Dose-to-Curie (DTC)

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 SCGs S3000 and S5000. The audit team evaluated the DTC measurement system.

DTC measurements are accomplished using multiple detectors: one to obtain the relative contributions of cobalt 60 (Co-60) and cesium 137 (Cs-137) to the gamma dose rate, and one of two (either high-range or low-range) to take dose rate measurements. CBFO previously evaluated the DTC methodology during Audit A-11-14.

Based on a review of the current revisions of INL/CCP procedures, technical documents, and completed BDRs provided prior to the audit, checklists were 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 samples assayed since the last audit

- Completed BDRs to ensure data are reported and reviewed as required
- Data storage and retrievability
- Personnel qualification and training
- Continued operability and condition of the DTC equipment since Audit A-11-14

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

DTC is performed in the CPP-659 area of the INTEC. The measurement acquisition control room (Cell 302) contains closed circuit camera control systems and display units and the readouts for the dose rate measurement 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 rate measurement probes, the measurement fixture, and the rotating platform are located. The drums are lowered into the hot cell from a high bay above the hot cell. Both cell areas were examined, 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 Electron Corporation Model RO-7 High Range Survey System or a Thermo Electron Corporation Model FH 40 G Dose Rate Measuring Unit, depending on the level of the radiation dose rate measurement relative to the environmental background.

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

Overall, Dose-to-Curie activities were determined to be adequate, satisfactorily implemented, and effective.

5.4.10 Flammable Gas Analysis

Flammable Gas (FG) equipment was examined, personnel were interviewed, and FG BDRs were reviewed. BDRs IN11FG5118 and IN11FG5023 were examined and found to be satisfactory. Initial calibration (IN12FG5001_ICAL) and minimum detection limit (IN08FG5156_MDL) studies were examined and found to be acceptable. Training and qualification of sampling individuals were confirmed to be acceptable. A demonstration of sampling and analysis was conducted on June 13, 2012. No issues were identified during the demonstration. Gas Certificates of Accuracy (COAs) were examined during the audit for the volatile organic compound (VOC) gas standard, which included hydrogen and methane, a separate Continuing Calibration Verification (CCV) VOC and hydrogen/methane standard, Internal Standards (ISTDS), and bromofluorobenzene (BFB). Gases were traceable to National Institute of Science and Technology (NIST)

standards and were used within their expiration dates. Equipment was examined and found to be compliant.

The audit team found INL/CCP procedures for Flammable Gas Analysis were adequate and operations were satisfactorily implemented and effective.

5.4.11 Gas Generation Testing Program (GGTP)

Gas Generation Testing (GGT) equipment was examined, personnel were interviewed, and GGT BDR IN12G901 was reviewed and found to be satisfactory. Initial calibration BDR IN11G901_ICAL and logbook CCP-ID-GGT-008-WMF-635 were examined and found to be acceptable. Training and qualification of GGT personnel were confirmed to be acceptable.

A walkthrough of the sampling area and analysis area was conducted on June 11, 2012, and calibrated pressure gauges and thermometers were identified. No issues were identified during the walkthrough or examination of calibration of pressure gauges and thermometers.

Gas Certificates of Accuracy (COAs) for hydrogen were examined during the audit. Gases were traceable to NIST standards and were used within their expiration dates. Equipment was examined and found to be compliant. No Long Term Objective Report has been produced since the last audit of CCP-INL GGT operations.

The main change in GGT operations is the use of the Gas Chromatograph/Thermal Conductivity Detector (GC/TCD) on the Gas Chromatograph/Mass Spectrometer for analysis of GGT samples, which replaces the analytical mobile cart used previously.

INL/CCP procedures for GGT were found to be adequate and GGT operations are satisfactorily implemented and effective.

The audit team found Gas Generation Testing Program activities were adequate and operations were satisfactorily implemented and effective.

5.4.12 Leak Testing

Helium leak test activities were evaluated by observation of INL/CCP personnel performing leak test operations. Calibration of measuring and test equipment (M&TE) was verified to be compliant. The helium cylinder Certificate of Accuracy was examined and found to be acceptable. All required equipment was present and in good working condition. Personnel performing leak test operations were verified to be properly and currently trained. Helium leak testing of TRUPACT-IIs, HalfPACTs and an RH-72B container were observed. Both RH and CH leak test activities were observed during the audit.

INL/CCP procedures for Leak Testing operations were found to be adequate, satisfactorily implemented and effective.

5.4.13 Container Management

Container management activities were evaluated by a walkthrough of INL/CCP container storage areas and an interview with the container management specialist. Tracking of containers using the Waste Tracking System (WTS) is performed by obtaining container numbers in the field for stored containers, then looking the containers up in WTS. Separate storage of containers with NCRs from containers without NCRs was verified. Storage of containers ready for shipment was verified to be satisfactory to preclude non-eligible containers from being shipped to WIPP. Finally, storage of non-INL containers was verified to be separate from INL containers.

INL/CCP procedures for Container Management operations were found to be adequate and are satisfactorily implemented and effective.

5.4.14 TRUPACT-II Operations/Transportation

Transportation operations performed at the INL/CCP were evaluated by the audit team. CH TRUPACT-II receipt, maintenance, container integrity, payload preparation operations, and loading were audited for shipment IN120150, containing TRUPACT-II 126, TRUPACT-II 196 and HalfPACT 515. A CAQ was identified regarding the installation of CH TRUPACT-II O-rings. This CAQ was incorporated into CAR 12-026 (see section 6.1).

A CAQ was identified regarding an outer containment assembly (OCA) fiberglass lift pocket tube (1 of 3) which was cracked all the way through on the OCA lid for unit 501; however, it was not found or fixed during routine maintenance. It was found by the audit team prior to shipment and the appropriate work instruction was used by the waste operators to correct the problem. This CAQ was incorporated in CAR 12-026 (see section 6.1). RH 72-B receipt, maintenance and loading operations were observed for shipment INR12001 containing cask 00-09, and found to be acceptable.

Personnel were interviewed, and receipt and maintenance of empty transport vessels were observed. Payload preparation and container integrity were audited. Loading of TRUPACT-II and RH 72-B shipping vessels was observed. Shipping documentation was examined. Material and testing equipment calibration were verified. Personnel training and qualification were evaluated. WCO and Transportation Certification Official (TCO) activities were audited. Helium leak testing of inner and outer containment vessels was observed. A CAQ was written regarding the control of spare parts for CH TRUPACT-IIs. This CAQ was incorporated into CAR 12-026 (see section 6.1).

The maintenance log was examined and the records were found to be compliant and complete. Examination of the maintenance logbook verified that it contained sufficient information to show that CH maintenance was being performed as required. A concern, classified as a CDA, was identified regarding maintenance records being sent to the Packaging Engineer in Carlsbad immediately after completion of the maintenance. The maintenance record was sent to the Packaging Maintenance Engineer and information

was provided to the audit team for verification (see CDA 1, section 6.2). The RH maintenance log showed no maintenance was required for the current year; however, the outer lid guide pin was bent, requiring maintenance to be performed on the cask being loaded.

Overall, the procedures used for TRUPACT-II Operations/Transportation were found to be adequate. Implementation of procedures was found to be satisfactory and effective.

6.0 CORRECTIVE ACTIONS, OBSERVATIONS, AND RECOMMENDATIONS

6.1 Corrective Action Reports

During the audit, the audit team may identify CAQs and document such conditions on CARs.

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

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

Two CARs, described below, were issued as a result of Audit A-12-13. The CARs have been transmitted to INL/CCP under separate cover.

CBFO CAR 12-026

The audit identified multiple instances of inattention to detail. Examples are listed below.

- CH waste operators were working on TRUPACTs following DOE/WIPP 02-3184, *CH Packaging Operations Manual*, Revision 11, requirements for installing OCV O-rings per section 2.10, and Inner Containment Vessel (ICV) O-rings per section 2.12. Two operators installed the OCV lower O-ring, then the OCV upper O-ring, followed immediately by installation of the ICV lower O-ring, then the ICV upper O-rings. One operator then signed off on all the OCV/ICV O-ring installation steps on Attachment 1 at one time, followed by the second operator signing all the verification entries on all OCV/ICV O-ring installation steps on Attachment 1. Procedure requires the installation of O-rings one at a time in sequence, followed by verification. Operators did not complete each step before continuing.

  Note:
  The NOTE on page 45 of DOE/WIPP 02-3184 allows steps to be performed in any order in these sections, but sign-offs for those steps, as well as the

verification sign-offs, must come as each step is complete, as required within each separate installation step (e.g., steps 2.10.10, 2.10.11, 2.12.9 and 2.12.10).

- While reviewing the contents of the TRUPACT Maintenance cabinet, it was noted that the bag for spare part 2077-180-06 did not have a description on the bag or on a label. The bag contained seven washers and had only the part number and purchase order number hand-written on it.

- The inspection on the OCA lid for HalfPACT unit 501 had been performed and signed off when the audit team arrived at the TRUPACT loading facility. The unit had been loaded and was considered ready to leave the docks. The audit team discovered that the OCA lift pocket tube (1 of 3), which surrounds the lifting attachment, was cracked all the way through.

  The audit team immediately advised the TCO of the discovery. The TCO confirmed the broken part and verified that inspection of the part had been completed and signed off. The part was replaced following the approved maintenance work instruction.

CBFO CAR 12-027

The audit identified multiple documentation errors and deviations from procedure that indicate a condition of overall CCP inattention to detail. Examples are listed below.

- NDE Batch INRTR5110051 objective evidence indicates that the SPM validation was initially completed without inclusion of a NCR that was associated with container SNL/NM006398R in the batch.

  NCR-INL-2041-11 was initiated by an SPM on 5/13/11 against SNL/NM006398R. The NCR was dispositioned on 5/16/11. Corrections dictated by the NCR were recorded in the BDR and the ITR checklist on 5/16/11. A second SPM signed the validation checklist on 5/19/11 with question #6, which asks if there were NCRs associated with the batch, answered as "no." A third SPM changed the answer to question #6 on 6/9/11.

- In NDE Batch INRTR5110085 objective evidence, the radiographer indicated in the "Container Inventory and Comments" section that drum ND1081R contains metal framed HEPA filters. Section 4, Packaging Materials and Waste Material Parameters report, did not indicate the presence of any metal material. In this instance, an item that was identified in the description was not included as an estimated material parameter weight.

- A container number was incorrectly recorded in the Batch Narrative on BDR INRTR5110094 for container 10046232. The container was recorded as 1004632 on 8/22/11. On 8/23/11, the ITR reviewed the BDR and recorded "Yes"

on the ITR checklist question #10, "Is all data recorded clearly, legibly, and accurately?"

- The ITR reviewed BDR INLRHRTR11006 and on 8/8/11 recorded "N/A" to ITR checklist question 8, "Are all changes to original data lined out, initialed, and dated?" and question 9, "Were data changes made by the individual who originally collected the data or individual authorized to change the data?" A change was made in the comment section on the RTR Data Sheet for container NRFTRUSPC074-1 on 8/2/11.

- The ITR reviewed BDR INLRHRTR12002 and on 3/1/12 recorded "Yes" to ITR checklist question 7: "Is all data recorded clearly, legibly, and accurately?" The BDR number was not correctly recorded on the RTR Data Sheet for container ANLE33G on 2/28/12. The BDR number was corrected on 3/7/12.

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 a CDA.

Four deficiencies, requiring remedial action only, were identified during the audit.

CDA 1

A CAQ was identified regarding maintenance records being sent to the Packaging Engineer in Carlsbad immediately after completion of the maintenance. The maintenance record was sent to the Packaging Maintenance Engineer and information was provided to the audit team for verification. The RH maintenance log showed no maintenance was required for the current year; however, the outer lid guide pin was bent, requiring maintenance to be performed on the cask being loaded. The maintenance record was provided to the Packaging Maintenance Engineer and information was provided to the auditors for verification prior to the end of the audit.

CDA 2

The CAQ addressed the need to document the addition of approximately 250 containers to waste stream ID-RF-S3114. These containers were appropriately added to AK Attachment 8 container list, but the add-container memo was not prepared. During the audit, the CAQ was addressed with the memo completed and added to the AK record for this waste stream prior to the end of the audit.

CDA 3

AK Attachment 5, Hazardous Constituents, for waste stream IN-ID-BTO-030 is inconsistent with the information in the AK Summary for this waste stream. Acetone, n-butanol, and methanol should be listed on Attachment 5, as expected. In addition, the hazardous constituents expected in this waste stream that are potentially flammable VOCs should be listed in the appropriate section of Attachment 5.

AK Attachment 15, the CCP TRU Waste Correlation and Surrogate Summary Form for waste stream IN-ID-BTO-030, indicates that the radioisotopic analysis of waste stream BT-T001 will be used to characterize waste stream ID-IN-BTO-030. This is no longer the plan and that sentence should be removed from this attachment. The sentence was removed and the amended attachment resubmitted to records prior to the end of the audit.

CDA 4

During the review of a RTR operator qualification card, the audit team identified an incomplete entry for the identification of a training container. CCP training personnel entered the training container identification number and the audit team was able to verify corrections were completed prior to the end of the audit.

6.3 Observations

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

Observation – A condition that, if not controlled, could result in a CAQ.

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

Two Observations were identified during this audit.

OBSERVATION 1

VE Operators completing BDR INLRHVE11003 did not follow step 4.1.2, section F, G, and H of CCP-TP-500. BDR INLRHVE11003, Containers FF-45A, B, C were signed by VE Operator 1 on 8/8/11 and by VE Operator 2 on 6/28/11. INL/CCP chose to continue

with the original operator. Also, on Attachment 1 for containers FF-45A and FF-45B, the wrong procedure is referenced. The procedure should be CCP-TP-500, but is listed as CPP-TP-500. INL/CCP should clarify its procedures to allow continued use of the original operator after a period of time has lapsed.

OBSERVATION 2

Attachment 1 of CCP-TP-006 does not provide a field to record the waste streams listed in CCP-AK-INL-001, yet SPMs and ITRs are required to verify that the correct waste streams are listed on the VE Data Form. SCGs are listed instead of appropriate waste streams. The audit team verified there were only three waste streams and they were identified as SCGs. INL/CCP should clarify the VE Data Form to allow SCGs rather than waste stream numbers to ensure a CAQ does not occur.

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.

Three Recommendations were presented for INL/CCP management consideration during this audit.

RECOMMENDATION 1

Training qualification card documentation that is submitted to NMED and for public access is marked: *Private Information; Authorized Personnel Only; Controlled Disposal is Required.* The audit team recommends that CCP evaluate their Pii process to determine if these training qualification cards should be made public.

RECOMMENDATION 2

During evaluation of training qualification card documentation that is submitted to NMED and also for public access, the audit team noted that documents have been copied on a color copier and the "ORIGINAL" stamp is in color (either red or blue). It was difficult to determine if these documents are the originals or copies of the originals. The audit team recommends that these documents are scanned into the records center in black and white.

RECOMMENDATION 3

The AK Audit team examined the AK record for five distinct waste streams representing the five CH and RH SCGs. In reviewing the AK Summaries for these waste streams, the auditors identified language that could be modified/supplemented to provide clarification to the documents. These changes were discussed and agreed upon and will become part of freeze files for each respective AK Summaries. The audit team recommends that INL/CCP incorporate the freeze files into the next revisions of the respective AK Summaries. Examples are included below:

CCP-AK-INL-001 R11

1. Modify language in S. 4.3.2 to indicate that spent nuclear fuel was not disposed of in the subsurface disposal area (SDA) undergoing excavation.

CCP-AK-INL-005 R5

1. Clarify language in S. 5.4.1.2 regarding the use of RTR data to develop the waste material parameter weight estimate.
2. Insert footnote to explain the negative radionuclide numbers listed in table 5-2.
3. Convert the AK Reevaluation Checklist cited in S. 5.4.3 p.34 to an AK Source Document

CCP-AK-INL-022 R1

1. Provide specific information in S. 4.3.1 on the rationale for considering these sources to be defense waste.
2. Provide information on the storage of out-of-use sources prior to the repackaging effort.
3. Provide additional summary information in S. 4.4 regarding the use of the sources at SNL.
4. Remove/change old definition of a waste stream in S. 4.5.3.

CCP-AK-INL-570 and CCP-AK-INL-590

1. Remove language from both documents that indicate that the permit **requires** the assignment of Hazardous Waste Numbers (HWNs) if there is a lack of analytical evidence.

7.0 LIST OF ATTACHMENTS

Attachment 1: Personnel Contacted During the Audit
Attachment 2: Summary Table of Audit Results
Attachment 3: Listing of Audited Documents
Attachment 4: Processes and Equipment Reviewed During Audit

PERSONNEL CONTACTED DURING AUDIT A-12-13				
NAME	**TITLE/ORG**	**PREAUDIT MEETING**	**CONTACTED DURING AUDIT**	**POST AUDIT MEETING**
Abbott, Preston	RH DTC/CH NDA Lead/MCS	X	X	
Armijo, Cheryl	Record Custodian/Stoller		X	
Balmer, John	OPS/AMWTP Shipping		X	
Bhatt, Raj	RH TRU Project Engineer/CWI-INL	X		
Billett, Michele	Training Coordinator/CCP		X	
Beck, Joshua	OPS Waste Handler/AMWTP Shipping		X	
Boland, Corey	WAGS/HENC Operator/NDA/CCP-MCS	X	X	
Brasier, David	NDA-EA/CCP		X	
Broomfield, Barbara	SPM/WTS-CCP	X	X	
Brown, Mike	CBFO		X	
Cannon, Val	QA/CCP	X	X	
Carlsen, Ted	Container Manager/CCP	X	X	X
Carroll, Mary	DTC LO/CCP	X	X	
Castaneda, Norma	NTP/DOE-CBFO		X	
Chapman, Carl	OPS/AMWTP Shipping		X	
Christensen, Tyson	RTR/CCP-MCS	X	X	
Clements, Thomas L.	TRU Project Manager/CWI-INL	X	X	X
Cummins, Sharon	SHENC Operator/NDA/PSC		X	
Davis, Crary	SGRS Operator/NDA/CCP		X	
deBruyn-Kops, Aaron	GGT LO/CCP		X	
DeMott, Ryan B.	Shipping Supervisor/ AMWTP Shipping		X	
Dial, Brent	WAGS Operator/NDA/CCP		X	
Dover, Dale	GGT/FGA/HSG/CCP	X	X	

PERSONNEL CONTACTED DURING AUDIT A-12-13				
NAME	**TITLE/ORG**	**PREAUDIT MEETING**	**CONTACTED DURING AUDIT**	**POST AUDIT MEETING**
Dunn, Barry	OPS Tech/AMWTP Shipping		X	
Fesmire, Court	Management Representative/CBFO	X	X	X
Fisher, A.J.	Senior Technical Advisor/CCP	X	X	X
Frost, Lisa	CH TRU/CWI	X		
Galbraith, Michael	RTR/MCS/CCP		X	
Gatliffe, Tom	SPM/CCP		X	
Green, Rick	SHENC Operator/NDA/PSC	X	X	
Grove, Doug	RTR/MCS/CCP		X	
Hall, Michel	Observer/CTAC	X	X	
Harvill, Joe	CTAC Manager/CTAC	X	X	X
Haean, Patrick D.	Shipping OPS/AMWTP Shipping		X	
Hemitt, Richard	MLU/AMWTP Shipping		X	
Houdashelt, Bob	TCO/CCP	X	X	X
Howard, Bryan A.	LANL		X	
Jenkins, Tally	DOE-ID			X
Johnsen, Tom	CH TRU STR/CWI	X	X	X
Jones, Bart	OPS/AMWTP Shipping		X	
Jones, Laura R.	QA/CCP	X	X	
Jorge, Kendall	TCO Transportation/ AMWTP Shipping		X	
Kirkes, Creta	WCA/WCO/CCP		X	
Kleckner, John	AKE/CCP		X	
Larue, Bruce	ID Oversight Program			X
Lazalde, Gerardo	OPS Tech/AMWTP Shipping		X	
Lickliter, Kenneth	Observer/Tech Spec-DOE	X	X	X
Luginbyhl, Jim	AKE/CCP	X	X	
Maestas, Ricardo	Observer/NMED	X	X	
McElhaney, Stephanie	NDA-EA/CCP	X	X	
Medina, Vince	SPM/CCP		X	X

PERSONNEL CONTACTED DURING AUDIT A-12-13				
NAME	**TITLE/ORG**	**PREAUDIT MEETING**	**CONTACTED DURING AUDIT**	**POST AUDIT MEETING**
Merrill, Kip	MLU/AMWTP Shipping		X	
Miles, Jeri	VPM/WTS	X	X	X
Morales, Bart	NDA-EA/CCP	X	X	
Morgan, Tom	CCP PM/DOE-CBFO	X	X	X
Muehleip, Craig	OPS Tech/AMWTP Shipping		X	
Oney, Fred	RTR/CCP-MCS	X	X	
Pattee, Spencer	VEE/CCP		X	
Pearcy, Mark	SPM/CCP	X	X	X
Pearcy, Sheila	Records Manager/CCP	X	X	X
Peterson, Gary	Transportation TCO/ AMWTP Shipping		X	
Pimentel, Trisha	Records/CCP	X	X	X
Pinnock, David	Sr. Operator/DTC/CCP		X	
Pinzel, Marcus A.	RH-CH/DOE-CBFO	X	X	
Ploetz, D.K.	RCT Manager/WTS	X	X	
Poirier, Joe	FGA LO/CCP		X	
Poole, Jeff	VEE/WTS	X	X	X
Quintana, Irene	P.M./CCP	X	X	
Reeves, Ron	P.M/CCP	X	X	X
Roberts, Ben	RH-TRU FPD/DOE-ID	X		
Sailer, Shelly	AMWTP Analytical Lab/ Lab QA Officer/CCP		X	
Sensibaugh, Michael	Manager/CCP	X	X	X
Smith, Scott	AKE/CCP	X	X	
Stallings, Andrew	NDE/WTS	X	X	X
Thomas, Bill	MLU/AMWTP Shipping		X	
Turner, Charles	SPM/WTS		X	
Verlanic, Bill	P.M/CCP	X	X	X
Vernon, Jim	SPM/CCP	X	X	X
Wachter, Joe	NDA-EA/Canberra/CCP		X	
Walker, Connie	Observer/Trinity	X	X	
Walker, Mak	QA/CCP		X	X
Wells, Jerry	DOE-ID			X
Weyerman, C. Wade	LANL		X	

PERSONNEL CONTACTED DURING AUDIT A-12-13				
NAME	**TITLE/ORG**	**PREAUDIT MEETING**	**CONTACTED DURING AUDIT**	**POST AUDIT MEETING**
White, Fred	OPS/AMWTP Shipping		X	
Yturralde, Jewel	Record Custodian/Stoller		X	
Young, Rachel	QA/CCP	X	X	X

Summary Table of Audit Results

Documents	Concern Classification				QA Evaluation		Technical
	CARs	CDAs	Obs	Rec	Adequacy	Implementation	Effectiveness
Activity							
Management	2				A	S	E
Interface/SOW					A	S	E
Acceptable Knowledge		2		1	A	S	E
Reconciliation of DQO's/WSPFs					A	S	E
Project Level V & V					A	S	E
WWIS					A	S	E
Real-Time Radiography		1			A	S	E
Visual Examination			2		A	S	E
Headspace Gas Sampling					A	S	E
Solids/Soils Sampling					A	S	E
Nondestructive Assay					A	S	E
Dose-to-Curie					A	S	E
Flammable Gas Analysis					A	S	E
Gas Generation Testing					A	S	E
Leak Testing					A	S	E
Container Management					A	S	E
Transportation		1			A	S	E
Training					A	S	E
Nonconformance Reporting					A	S	E
QA Records				2	A	S	E
TOTALS	2	4	2	3			

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

LISTING OF AUDITED DOCUMENTS

	Document No.	Rev	Document Title
1.	CCP-PO-001	20	CCP Transuranic Waste Characterization Quality Assurance Project Plan
2.	CCP-PO-002	26	CCP Transuranic Waste Certification Plan
3.	CCP-PO-003	12	CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC)
4.	CCP-PO-005	22	CCP Conduct of Operations
5.	CCP-PO-006	3	CCP Conduct of Operations Matrix
6.	CCP-PO-008	9	CCP Quality Assurance Interface with the WTS Quality Assurance Program
7.	CCP-PO-016	5	CCP Gas Generation Testing Program Quality Assurance Project Plan
8.	CCP-PO-024	11	CCP/INL Interface Document
9.	CCP-PO-501	6	CCP/INL RH TRU Waste Interface Document
10.	CCP-PO-505	1	CCP Remote-Handled Transuranic Waste Authorized Methods for Payload Control (CCP RH-TRAMPAC)
11.	CCP-QP-002	32	CCP Training and Qualification Plan
12.	CCP-QP-005	21	CCP TRU Nonconforming Item Reporting and Control
13.	CCP-QP-008	19	CCP Records Management
14.	CCP-QP-016	16	CCP Control of Measuring and Test Equipment
15.	CCP-QP-017	3	CCP Identification and Control of Items
16.	CCP-QP-021	7	CCP Surveillance Program
17.	CCP-QP-022	12	CCP Software Quality Assurance Plan
18.	CCP-QP-028	14	CCP Records Filing, Inventorying, Scheduling, and Dispositioning
19.	CCP-QP-030	8	CCP Written Practice for the Qualification of CCP Helium Leak Detection Personnel
20.	CCP-TP-001	19	CCP Project Level Data Validation and Verification
21.	CCP-TP-002	24	CCP Reconciliation of DQOs and Reporting Characterization Data
22.	CCP-TP-003	18	CCP Data Analysis for S3000, S4000, and S5000 Characterization
23.	CCP-TP-005	24	CCP Acceptable Knowledge Documentation
24.	CCP-TP-006	16	CCP Visual Examination Technique for INL Newly Generated TRU Waste Retrieved from Pits
25.	CCP-TP-008	9	CCP Solids Sampling Procedure
26.	CCP-TP-010	4	CCP Waste Assay Gamma Spectrometer (WAGS) & SWEPP Gamma-Ray Spectrometer (SGRS) Calibration Procedure
27.	CCP-TP-019	5	CCP Waste Assay Gamma Spectrometer (WAGS) Operating Procedure
28.	CCP-TP-028	6	CCP Radiographic Test Drum and Training Container Construction
29.	CCP-TP-030	30	CCP CH TRU Waste Certification and WWIS/WDS Data Entry
30.	CCP-TP-033	19	CCP Shipping of CH TRU Waste
31.	CCP-TP-053	11	CCP Standard Real-Time Radiography (RTR) Inspection Procedure
32.	CCP-TP-054	2	CCP Adjustable Center of Gravity Lift Fixture Preoperational Checks and Shutdown
33.	CCP-TP-055	4	CCP Varian Porta-Test Leak Detector Operations
34.	CCP-TP-058	4	CCP NDA Performance Demonstration Plan
35.	CCP-TP-068	8	CCP Standardized Container Management
36.	CCP TP-080	3	CCP Operating the WMF 610 Real-Time Radiography (RTR) System
37.	CCP-TP-082	8	CCP Waste Container Filter Vent Operation
38.	CCP-TP-083	7	CCP Gas Generation Testing
39.	CCP-TP-086	17	CCP CH Packaging Payload Assembly
40.	CCP-TP-093	16	CCP Sampling of TRU Waste Containers
41.	CCP-TP-106	7	CCP Headspace Gas Sampling Batch Data Report Preparation
42.	CCP-TP-107	11	Operating the CCP High Efficiency Neutron Counter Using NDA 2000
43.	CCP-TP-108	6	Calibrating the CCP High Efficiency Neutron Counter Using NDA 2000
44.	CCP-TP-109	8	CCP Data Reviewing, Validating, and Reporting Procedure

LISTING OF AUDITED DOCUMENTS			
	Document No.	**Rev**	**Document Title**
45.	CCP-TP-113	16	CCP Standard Contact-Handled Waste Visual Examination
46.	CCP-TP-115	4	CCP SWEPP Gamma-Ray Spectrometer (SGRS) Operating Procedure
47.	CCP-TP-119	4	CCP Operating the Real-Time Radiography (RTR) System #5
48.	CCP-TP-138	1	CCP Execution of Long-Term Objective for the Unified Flammable Gas Test Procedure
49.	CCP-TP-146	7	CCP SuperHENC Operating Procedure
50.	CCP-TP-148	7	CCP SuperHENC Data Reviewing, Validating and Reporting Procedure
51.	CCP-TP-162	1	CCP Random Selection of Containers for Solids and Headspace Gas Sampling and Analysis
52.	CCP-TP-163	3	CCP Evaluation of Waste Packaging Records for Visual Examination of Records
53.	CCP-TP-170	2	CCP SuperHENC Calibration Procedure
54.	CCP-TP-500	11	CCP Remote-Handled Waste Visual Examination
55.	CCP-TP-504	12	CCP Dose-to-Curie Survey Procedure for Remote-Handled Transuranic Waste
56.	CCP-TP-506	2	CCP Preparation of the RH TRU Waste AK Characterization Reconciliation Report
57.	CCP-TP-507	7	CCP Shipping of Remote-Handled Transuranic Waste
58.	CCP-TP-508	7	CCP RH Standard Real-Time Radiography Inspection Procedure
59.	CCP-TP-509	3	CCP Remote-Handled Transuranic Container Tracking
60.	CCP-TP-512	5	CCP Remote-Handled Waste Sampling
61.	CCP-TP-530	10	CCP RH TRU Waste Certification and WWIS/WDS Data Entry
62.	DOE/WIPP 02-3183	6	CH Packaging Guidance
63.	DOE/WIPP 02-3184	11	CH Packaging Operations Manual
64.	DOE/WIPP 02-3283	3.1	RH Packaging Program Guidance
65.	DOE/WIPP 02-3284	7	RH Packaging Operations Manual
66.	DOE/WIPP 06-3345	4	Waste Isolation Pilot Plant Flammable Gas Analysis Procedure
67.	WP 13-QA.03	19	Quality Assurance Independent Assessment Program

Processes and Equipment Reviewed During Audit A-12-13 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				
TBD	Nondestructive Examination Procedure – CCP-TP-508 Equipment – RTR-RTR-0659 Description – VJ Technologies, Real-time Radiography Characterization (RH-RTR-0659) System	Solids (S3000)	NO	NO
PREVIOUSLY APPROVED PROCESSES OR EQUIPMENT				
14VE1	Visual Examination (VE) Procedure – CCP-TP-006 Description –Visual Examination Technique (VET)	Solids (S3000) Soils (S4000) Debris (S5000)	YES	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
14RR2	Nondestructive Examination Procedure – CCP-TP-053 Equipment – MCS RTR-5 Description – MCS Real-time Radiography (RTR) Mobile Characterization (RTR-5) System	Solids (S3000) 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	Debris (S5000)	YES	YES
N/A	Acceptable Knowledge	Solids (S3000) Soils (S4000) Debris (S5000)	YES	YES

Processes and Equipment Reviewed During Audit A-12-13 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	Solids/Soils and Gravel Sampling and Custody for CH	Solids (S3000) Soils (S4000)	YES	N/A
N/A	Solids/Soils and Gravel Sampling and Custody for RH	Solids (S3000)	YES	N/A
N/A	SUMMA® Headspace Gas (HSG) Sampling and Custody	Debris (S5000)	YES	N/A
N/A	Data Validation and Verification	Solids (S3000) Soils (S4000) Debris (S5000)	YES	YES
N/A	WIPP Waste Information System (WWIS)	Solids (S3000) Soils (S4000 Debris (S5000)	YES	YES
14SHC1	Nondestructive Assay Procedure – CCP-TP-146 Description – CCP Super High Efficiency Neutron Counter	Solids (S3000) Debris (S5000)	N/A	YES
14HENC1	Nondestructive Assay Procedure – CCP-TP-107 Description – CCP High Efficiency Neutron Counter	Solids (S3000) Soils (S4000) Debris (S5000)	N/A	YES
14SGRS1	Nondestructive Assay Procedure – CCP-TP-115 Description – Stored Waste Examination Pilot Plant (SWEPP) Gamma Ray Spectrometer (SGRS)	Solids (S3000) Soils (S4000) Debris (S5000)	N/A	YES

Processes and Equipment Reviewed During Audit A-12-13 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
14WAGS1	Nondestructive Assay Procedure – CCP-TP-019 Description – Waste Assay Gamma Spectrometer	Solids (S3000) Soils (S4000) Debris (S5000)	N/A	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 $La_3Br(Ce)$ gamma detector Procedure CCP-TP-504	Solids (S3000) Debris (S5000)	N/A	YES
N/A	Load Management	Solids (S3000) Soils (S4000) Debris (S5000)	N/A	YES
N/A	Quality Assurance Program	Solids (S3000) Soils (S4000) Debris (S5000)	N/A	YES