

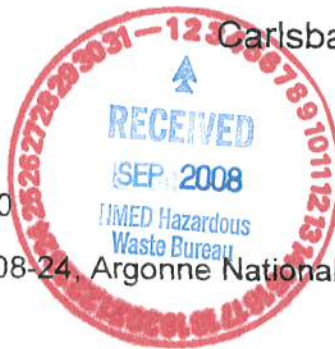


United States Government

Department of Energy

# memorandum

Carlsbad Field Office  
Carlsbad, New Mexico 88221



DATE: September 2, 2008

REPLY TO  
ATTN OF: CBFO:QA:DSM:KBS:08-1347:UFC 2300.00

SUBJECT: CBFO Interim Certification Audit Report A-08-24, Argonne National Laboratory Central Characterization Project

TO: Dale Dietzel, DOE-CH

The Carlsbad Field Office (CBFO) conducted Audit A-08-24 of the Argonne National Laboratory Central Characterization Project (ANL/CCP) waste characterization and certification activities for remote-handled Transuranic (RH-TRU) waste August 5 – 7, 2008 in Argonne, Illinois, and Carlsbad, New Mexico.

The audit team concluded that, overall, the ANL/CCP implementing procedures are adequate relative to the flow-down of requirements. The audit team determined that the ANL/CCP technical requirements are being satisfactorily implemented to the extent possible, given the stage of the project, and are effective in all areas examined. The CBFO audit report is attached.

One CBFO corrective action report (CAR) was issued as a result of the audit. The CAR has been forwarded under separate cover.

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

Dennis S. Miehls  
Senior Quality Assurance Specialist

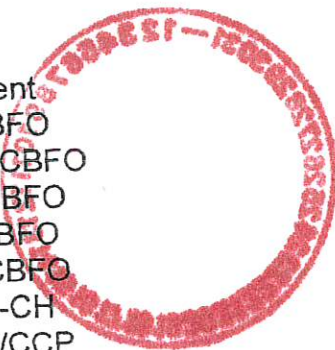
Attachment



Dale Dietzel

-2-

September 2, 2008

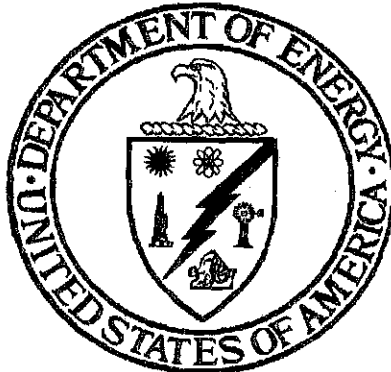


cc: w/attachment  
A. Holland, CBFO \*ED  
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J.R. Stroble, CBFO ED  
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D. Winters, DNFSB ED  
P. Gilbert, LANL ED  
G. Lyshik, LANL ED  
A. Pangle, CTAC ED  
R. Garcia, CTAC ED  
WWIS Database Administrators ED  
WIPP Operating Record, 452-09  
CBFO QA File  
CBFO M&RC  
\*ED denotes electronic distribution

U.S. DEPARTMENT OF ENERGY  
CARLSBAD FIELD OFFICE

INTERIM  
AUDIT REPORT  
OF THE  
ARGONNE NATIONAL LABORATORY (ANL)  
UTILIZING THE  
CENTRAL CHARACTERIZATION PROJECT (CCP) FOR REMOTE-  
HANDLED (RH) WASTE CHARACTERIZATION  
CARLSBAD, NM, AND ARGONNE, IL  
AUDIT NUMBER A-08-24

August 5 – 7, 2008



Prepared by: *Charles L. Riggs* *for* Date: 9-2-08  
Charles L. Riggs, CTAC  
Audit Team Leader

Approved by: *Ava L. Holland* FOR Date: 9-2-08  
Ava L. Holland, CBFO  
Quality Assurance Manager

## 1.0 EXECUTIVE SUMMARY

Carlsbad Field Office (CBFO) Certification Audit A-08-24 was conducted to evaluate the continued adequacy, implementation, and effectiveness of Argonne National Laboratory (ANL) transuranic (TRU) waste characterization activities performed for ANL by the Washington TRU Solutions (WTS) Central Characterization Project (CCP). The activities reviewed were for characterization and certification of remote-handled (RH) Summary Category Group (SCG) S5000 debris waste. The activities are performed consistent with the requirements described in the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (HWFP), the *Remote-Handled Transuranic Waste Characterization Program Implementation Plan* (WCPIP), the CBFO *Quality Assurance Program Document* (QAPD), the *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant* (WAC), and the *Transuranic Authorized Methods for Payload Control* (TRAMPAC).

Audit A-08-24 was conducted in Carlsbad, NM, and Argonne, IL, August 5 – 7, 2008. The audit team concluded that overall, the ANL/CCP technical procedures are adequate relative to the flow-down of requirements from the HWFP, the WCPIP, the CBFO QAPD, the TRAMPAC, and the WAC. The audit team concluded that the ANL/CCP technical areas evaluated are being satisfactorily implemented and are effective.

One deficiency requiring the issuance of a CBFO corrective action report (CAR) was identified concerning the requirement to validate quality records. This deficiency has been issued as CBFO CAR 08-036. Two deficiencies isolated in nature and requiring only remedial corrective actions were identified and corrected during the audit (CDA). The audit team did not identify any Observations. One Recommendation was presented to ANL/CCP management. The CAR, CDAs, and Recommendation are described in sections 6.0 and 7.0.

## 2.0 SCOPE

The audit team evaluated the adequacy, implementation, and effectiveness of the ANL/CCP RH TRU waste characterization activities. The following elements were evaluated:

### Technical

- Acceptable Knowledge (AK)
- Project-level Verification and Validation (V&V)
- Visual Examination (VE)
- Headspace Gas (HSG)
- WIPP Waste Information System (WWIS)
- Dose-to-Curie (DTC)

### Quality Assurance

The following QA elements were evaluated only to the extent needed to support the technical elements listed above:

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

### Transportation

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

- *CBFO Quality Assurance Program Document*, DOE/CBFO-94-1012
- Waste Isolation Pilot Plant Hazardous Waste Facility Permit, NM4890139088-TSDF, New Mexico Environment Department
- *Remote-Handled Transuranic Waste Characterization Program Implementation Plan (WCPIP)*, DOE/WIPP-02-3214
- Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant, DOE/WIPP-02-3211
- Transuranic Authorized Methods for Payload Control (TRAMPAC)
- CCP Transuranic Waste Quality Assurance Characterization Project Plan (QAPjP), CCP-PO-001
- CCP Transuranic Waste Certification Plan, CCP-PO-002
- CCP Transuranic Authorized Methods for Payload Control (CCP TRAMPAC), CCP-PO-003
- *ANL/CCP RH TRU Waste Interface Document*, CCP-PO-500
- Related technical and QA implementing procedures

### **3.0 AUDIT TEAM, MANAGEMENT REPRESENTATIVES, AND OBSERVERS**

|                |  |
|----------------|--|
| Charlie Riggs  | Audit Team Leader, CBFO Technical Assistance Contractor (CTAC) |
| Dennis Miehl   | CBFO QA Management Representative                              |
| Mark von Weber | Auditor, CTAC  |
| Porf Martinez  | Auditor, CTAC  |
| Tammy Bowden   | Auditor, CTAC  |
| Berry Pace     | Auditor, CTAC  |
| Tommy Putnam   | Auditor, CTAC  |
| Cindi Castillo | Auditor, CTAC  |

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|                  |                                    |
|------------------|------------------------------------|
| Karl Pennock     | Auditor-in-Training, CEMRC         |
| BJ Verret        | Auditor/Technical Specialist, CTAC |
| Dick Blauvelt    | Technical Specialist, CTAC         |
| Charleen Roberts | Technical Specialist, CTAC         |
| Karen Gaydosh    | Technical Specialist, CTAC         |
| Paul Gomez       | Technical Specialist, CTAC         |
| Kirk Kirkes      | Technical Specialist, CTAC         |
| Jim Oliver       | Technical Specialist, CTAC         |
| Robbie Morrison  | Technical Specialist, WTS          |
| Steve McGonagill | Technical Specialist, WTS          |

#### **OBSERVERS**

|              |  |
|--------------|--|
| JR Stroble   | CBFO                                     |
| Steve Holmes | New Mexico Environment Department (NMED) |

#### **4.0 AUDIT PARTICIPANTS**

The ANL/CCP individuals contacted during the audit process are identified in attachment 1. A pre-audit meeting was held by teleconference in Carlsbad, NM, and Argonne, IL, on August 5, 2008. Discussions were conducted with ANL/CCP management and staff to keep them apprised of the audit activities. The audit concluded with a post-audit meeting held by teleconference in Carlsbad, NM, and Argonne, IL, on August 7, 2008.

#### **5.0 SUMMARY OF AUDIT RESULTS**

##### **5.1 Program Adequacy and Implementation**

The audit team concluded that overall, the applicable ANL/CCP TRU waste characterization activities for RH SCG S5000 debris waste, as described in the implementing procedures, are adequate, satisfactorily implemented, and effective.

Attachment 2 contains a summary table of audit results. Audit activities, including objective evidence reviewed, are described below and in CBFO checklists and/or objective evidence reviewed forms. Attachment 3 contains a list of ANL/CCP documents audited. Attachment 4 lists the processes and equipment evaluated during the audit.

##### **5.2 Quality Assurance Activities**

###### **5.2.1 Nonconformances and Corrective Actions**

The audit team interviewed personnel and reviewed documentation to verify that ANL/CCP met the requirements of QAPD Section 1.3, Quality Improvement.

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Nonconformance and corrective action activities were conducted by ANL/CCP in accordance with the following procedures:

CCP-QP-004, *CCP Corrective Action Management*

CCP-QP-005, *CCP TRU Nonconformance Item Reporting and Control*

CCP-QP-006, *CCP Corrective Action Reporting and Control*

The audit team did not identify any conditions adverse to quality (CAQ) during the audit related to the corrective action program.

Overall, the audit team concluded that quality improvement activities were adequate, satisfactorily implemented, and effective.

### 5.2.2 Personnel Qualification and Training

The audit team interviewed personnel and reviewed documentation to verify that ANL/CCP met the requirements of QAPD Section 1.2, Personnel Qualification and Training. The training and qualification records were reviewed for ANL/CCP AK experts, Site Project Managers (SPMs), and HSG, DTC, VE, and Transportation personnel. Personnel qualification and training activities were conducted by ANL/CCP in accordance with CCP-QP-002, *CCP Training and Qualification Plan*.

The audit team identified one CAQ in the area of validation of quality records. The SPM was not validating the List of Qualified Individuals (LOQI). CBFO CAR 08-036 was generated to address this CAQ (see section 6).

Overall, the audit team concluded that the processes for personnel qualification and training were adequate, satisfactorily implemented, and effective.

### 5.2.3 QA Records

The audit team interviewed personnel and reviewed documentation to verify that ANL/CCP met the requirements of QAPD Section 1.5, Records. The records were properly handled and stored. Records activities were conducted by ANL/CCP in accordance with the following procedures:

CCP-QP-008, *CCP Records Management*

CCP-QP-028, *CCP Records Filing, Inventorying, Scheduling, and Dispositioning*

No CAQs were identified in the area of QA Records, except as noted above for the LOQI.

Overall, the audit team concluded that the processes for handling and control of records were adequate, satisfactorily implemented, and effective.

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#### 5.2.4 Sample Control

The audit team interviewed personnel and reviewed documentation to verify that ANL/CCP met the requirements of QAPD Section 4.1, Sample Control. The audit team concluded that samples were properly handled and stored, and sample control activities were conducted in accordance with CCP-TP-043, *CCP Chain of Custody for SUMMA<sup>®</sup> Canister Sampling Using the INL Analytical Lab*.

No concerns were identified in the area of Sample Control.

The audit team concluded that sample control processes were adequate, satisfactorily implemented, and effective.

### 5.3 Technical Activities

#### 5.3.1 Acceptable Knowledge Checklist

The audit team assessed the ability of ANL/CCP to characterize and certify an RH TRU mixed waste debris stream generated and stored at the ANL. The audit was performed in accordance with the WAP, and the AK audit staff specifically addressed the WAP requirements listed on the B6-3 checklist, along with portions of the B6-1 checklist. Objective evidence was compiled and reviewed to demonstrate compliance with each of the requirements. The team also reviewed AK documentation in relation to the requirements of the RH TRU Waste Characterization Program Implementation Plan (WCP/IP) Rev 0D, driven primarily by U.S. Environmental Protection Agency (EPA) requirements. The waste stream evaluated, designated as AERHDM, consists of the forty-four 30-gallon drums that were examined in the previous audit for which CCP reviewed the VE tapes of packaging performed by ANL staff. Two of these drums were rejected by CCP during the VE tape review for potentially containing prohibited items:

In addition, the audit team reviewed the AK record for a small population of newly packaged drums for which CCP generated VE batch data reports (BDRs) based on their observation of actual packaging operations by ANL staff. At the time of this audit, VE BDRs for eight newly packaged drums had undergone complete project-level review.

In addition to the AK Summary Report, waste stream profile form (WSPF), and attachments for this waste stream, the team reviewed numerous relevant AK source documents to establish support for the conclusions noted in the AK Summary. The team also examined AK attachments addressing a crosswalk between the AK Source Documents and the WAP requirements, the reference list of AK Source Documents, the hazardous waste constituents list, the waste form, waste material parameters, prohibited items and packaging AK attachment 6, and a container inventory listing. The audit team reviewed several discrepancy reports resolving discrepancies in the AK record.



The required traceability exercise was performed for four drums that had been completely through the characterization and certification process (two drums from the retrievably stored population and two drums of newly packaged waste). Four VE BDRs prepared by CCP personnel were reviewed and compiled as objective evidence. The team reexamined the HSG BDR compiled from the sampling and analysis of a random selection of 10 drums from the Lot 1 waste stream population of 44 drums. Furthermore, the random selection memo for Lot 2, which is expected to have a minimum population of 50 drums and a maximum population of 100 drums, was extensively discussed to assure compliance with the WAP. No drums from Lot 2 have been sampled at this time.

The audit team also examined and added to the objective evidence a nonconformance report (NCR) written by CCP on prohibited items in two drums, as noted above. The estimated waste material parameter weights for this stream and supporting documentation were reviewed. An examination of the AK Accuracy Report, AK Expert (AKE) and SPM training records, and the reconciliation of the characterization data with the AK record for shipping Lot 1, along with the AK Characterization Checklist, completed the AK WAP review process.

Separate checklists were compiled prior to the audit and were completed during the audit for the requirements of the WCPIP, including the AK requirements listed in attachment A, and for the completion of the Characterization Reconciliation Report (CRR). WCPIP requirements focus on physical and radiological properties and the absence of residual liquid. The audit team examined AK source documentation that supported these parameters in the AK Summary and in the *CCP RH TRU Radiological Characterization Technical Report* for this waste stream in CCP-AK-ANL-501. The CRR was reviewed to assure that for each of the data quality objectives (DQOs) identified in the WCPIP, the supporting AK sources and method of data qualification were appropriately identified, along with notation that the relevant quality assurance objectives were met.

In terms of the AK requirements in both the WCPIP and the HWFP, the audit team concluded that the ANL/CCP program applied to the RH debris stream adequately demonstrated procedural compliance with requirements, and was satisfactory and effective in implementing those requirements.

One Recommendation was provided to ANL/CCP management for consideration (see section 7).

Overall, the audit team concluded that AK activities were adequate, satisfactorily implemented, and effective.

### 5.3.2 Project-Level Verification and Validation

Objective evidence was reviewed to ensure project-level activities were adequately performed to support waste characterization. BDRs were evaluated based on project-

level requirements for VE of SCG S5000 waste. The random selection requirement for headspace gas was evaluated, although there has not been a sampling event for the selected containers at this time. The 2008 second quarter repeat data generation-level review notification for VE has also been evaluated.

The project-level data V&V process was evaluated by reviewing the following BDRs:

Visual Examination  
RHANLVE080001  
RHANLVE080002  
RHANLVE080004  
RHANLVE080005

No concerns were identified in the area of V&V.

Overall, the audit team concluded that V&V activities were adequate, satisfactorily implemented, and effective.

### 5.3.3 Headspace Gas

The audit team assessed the ability of ANL/CCP to characterize waste from SCG S5000 (debris) using HSG sampling. ANL/CCP operations for HSG sampling of RH S5000 debris waste is performed using SUMMA<sup>®</sup> canisters.

The audit team identified one concern in this area, which was corrected during the audit. The concern related to inattention to detail in the transfer of information from field notes to the chain-of-custody (COC) form (see CDA 1 section 6)

Sampling BDR ANHSGS070001 was examined. Drum Age Criteria (DAC), sample COC, canister tags, quality control samples, and transfer to the analytical laboratory were reviewed and found to be compliant. Training and qualification of sampling individuals were confirmed to be acceptable to the CCP program through an LOQL. Interviews were conducted with the RH Manager and training personnel, with satisfactory results. The ANL/CCP procedures for HSG sampling using SUMMA<sup>®</sup> canisters were found to be adequate.

Overall, the audit team concluded that HSG activities were adequate, satisfactorily implemented, and effective.

### 5.3.4 Visual Examination

The audit team assessed the ability of ANL/CCP to characterize waste from SCG S5000 (debris) using VE. The VE process evaluated during the audit is performed by the review of video recordings prepared by ANL personnel when the waste was originally packaged. The video recordings are reviewed by qualified CCP VE operators and a BDR is prepared. ANL/CCP personnel also observe ANL operators packaging.

waste in the hot cell and document the process in a BDR. VE is performed in accordance with Procedures CP-TP-500, *CCP Remote-Handled Waste Visual Examination*, CCP-TP-163, Rev. 0, *CCP Standard VE of Records*, and CCP-TP-509, Rev. 1, *CCP Remote-Handled Transuranic Container Tracking*.

Four BDRs were reviewed (RHANLVE80001, RHANLVE80002, RHANLVE80004 and RHANLVE80005).

The training course content for the VE expert (VEE) and operators was reviewed to verify that all WAP requirements were included. ANL/CCP VE training requirements are contained in the *Quality Assurance Project Plan (QAPjP)* and CCP-QP-002. Training files were reviewed for the VEE and three VE operators to verify that individuals responsible for performing the VE of containers have been properly trained and qualified.

No concerns were identified in the area of VE.

Overall, the audit team concluded that the VE activities were adequate, satisfactorily implemented, and effective.

### 5.3.5 WIPP Waste Information System (WWIS)

The audit team evaluated the adequacy of CCP Procedure CCP-TP-530, *CCP TRU Waste Certification and WWIS Data Entry Plan*, with respect to the CBFO QAPD and determined that the procedure contains adequate flow-down of upper-tier requirements related to RH operations at the ANL host facility.

The audit team interviewed CCP project-level personnel, witnessed a demonstration of WWIS data entry, and reviewed documents including ANL site-specific spreadsheet reports, WWIS waste container data reports, and BDRs related to data items entered into WWIS.

The audit team determined that CCP project-level and ANL site personnel have been granted access to WWIS and are adequately trained in RH data entry into WWIS. CCP project-level personnel secure record copies of appropriate approved BDRs and enter container characterization data. ANL host facility personnel secure radiation measurements, shipping data, and other data items available only at the host facility and enter that data into WWIS. Project-level and ANL host facility personnel adequately enter data into appropriate characterization, certification, and shipping modules within WWIS. Access control to WWIS applications is effectively controlled through user identification and passwords.

The WWIS data entry demonstration used documentation packages for actual waste characterization analyses and activities for the initial shipment, and data were entered into the WWIS. Waste characterization data are currently entered by hand into an ANL site-specific spreadsheet. Once data are entered into the spreadsheet and independently verified, and characterization is approved by the waste certification

official (WCO), the data are electronically transferred into the appropriate WWIS characterization, certification, or shipping module. The demonstration was adequate to provide evidence of entry of approved WWIS data into appropriate modules once the WSPF is approved. The audit team compared the WWIS waste container data report and data from CCP BDRs, and determined that all required data fields were submitted to WWIS and were in acceptable format.

No concerns were identified in the area of WWIS.

Overall, the audit team concluded that WWIS activities were adequate, satisfactorily implemented, and effective.

### 5.3.6 Dose-to-Curie (DTC) Methodology

The audit team assessed the DTC methodology used by ANL/CCP to characterize waste stream AERHDM, consisting of approximately forty-five 30-gallon drums of RH TRU debris waste packaged between 1993 and 2002. The audit team evaluated both the development of scaling factors that relate the measured dose rate to the average activity, and the actual measurement of the dose rate. For DTC, the dose rate is defined as the external exposure rate from gamma-ray emitting radionuclides within the waste matrix, predominately cesium-137 (Cs-137). The application of the DTC methodology at ANL to characterize RH TRU waste was previously evaluated by CBFO during Audit A-07-03.

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

- Development of average radionuclide ratios through modeling and confirmatory testing
  - Development of the relationship between the measured dose or exposure rate and the activity of Cs-137
  - Measurement of the external dose or exposure rate of the waste containers
  - Calculation of the radionuclide activities and other derived radiological quantities and associated uncertainties
  - Any significant program changes or deviations ?
  - Results of applying the DTC methodology to characterize waste.
  - Determination of the number of containers examined, completed BDRs, and BDRs that had been through project-level review that were generated since Audit A-07-03
  - 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 equipment used in the DTC method since Audit A-07-03

The source of the RH waste at the ANL was the examination of fuel pins and reactor materials in the Alpha-Gamma Hot Cell Facility (AGHCF). Scaling factors were developed from information about these fuel pins and reactor materials. The ORIGEN2.2 computer code was used to model the burn-up of nuclear fuel, including decay and in-growth of progeny radionuclides, to arrive at a radionuclide inventory used to estimate the ratios of the activities of relevant radionuclides to that of Cs-137.

To confirm the ORIGEN2.2 modeling results, radionuclide ratios were calculated for approximately 400 fuel pins that were also examined at the Los Alamos National Laboratory (LANL) using mass spectrometry. The modeled values were compared to the mass spectrometry results. Agreement between the ratios calculated and those measured by mass spectrometry demonstrate that ORIGEN2.2 is an appropriate model for calculating the radionuclide ratios for irradiated fuel pins with fuel compositions and irradiation histories similar to those at LANL. Provided that the information for the fuel pins included in waste stream AERHDM at ANL is of the same quality as that for the pins examined at LANL, the radionuclide ratios for the fuel pins examined at ANL and calculated using ORIGEN2.2 should be of a similar quality.

Measurements of the external dose or exposure rates of the waste containers since A-07-03 were initially made at the 398 Yard and documented in BDR ANLRHDTTC07004. The DTC measurement apparatus was moved to the Building 331 shell after completion of the measurements for the seven drums in BDR ANLRHDTTC07004. Since the apparatus was moved, no DTC measurements have been made. The exposure rate, attributed entirely to Cs-137, is measured four times at a distance of 1.0 meter from the 30-gallon waste containers.

The audit team interviewed operations personnel about the set-up and calibration of the measurement apparatus for performing DTC. A Thermo Electron Model RO-7 survey meter fitted with a RO7LD or RO-7BM probe is used to gather high-range measurements, and a Model FH 40G fitted with a FHZ 612 probe is used to gather low-range measurements. Each container is rotated 90 degrees successively between each of the four measurements. The average measured dose or exposure rate for each 30-gallon waste container and associated scaling factors are used to estimate the activity of individual radionuclides and other derived radiological quantities and associated uncertainties.

The audit team interviewed DTC personnel and examined electronic and paper copies of reports and records. The audit team identified no concerns.

Since Audit A-07-03, one BDR consisting of seven drums has been through complete project-level review (ANLRHDTTC07004).

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

#### **5.4 Transportation**

ANL/CCP RH waste transportation activities were evaluated at the ANL facilities in Argonne, IL. The audit team interviewed loading personnel, observed RH cask loading activities using the mobile loader, observed 72B trailer up-righting and maintenance of the cask, and checked measuring and test equipment (M&TE) to ensure correct calibration.

The audit team identified one concern that was corrected during the audit (CDA). A spare part was not labeled properly. The labeling was corrected and verified during the audit (see CDA-2 section 6).

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

### **6.0 SUMMARY OF DEFICIENCIES**

#### **6.1 Corrective Action Reports**

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

Condition Adverse to Quality (CAQ) – Term used in reference to failures, malfunctions, deficiencies, defective items, and nonconformances.

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

One CBFO CAR, briefly described below, was issued as a result of Audit A-08-24.

#### **CBFO CAR 08-036**

The audit team could not verify that QA Records (ANL-E LOQI) are being validated by the SPM. The LOQI is listed as a QA/Nonpermanent record on the approved ANL-E RH records inventory and disposition schedule (RIDS), which states that the RH ANL-E LOQI will be validated by SPM signature and date.

#### **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 corrected during the audit.

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 according to the following definition:

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

Two CDAs, described below, were identified as a result of Audit A-08-24.

#### **CDA 1**

Field data were not transferred correctly from needle assembly equipment blank data and canister tag data to the field COC.

The ANL/CCP SPM resolved the items by noting the corrections of the COC on the SPM HSG Summa<sup>®</sup> Sampling Project-Level Validation Checklist and Summary recognizing the condition and items affected.

#### **CDA 2**

Part No. 2078-200-14, IV Lid Closure Bolt Spring, was missing the description on the label required by DOE/WIPP 02-3283, Section 2.4.

The part description was added to the label per requirement, and was verified by the audit team.

### **7.0 SUMMARY OF OBSERVATIONS AND RECOMMENDATIONS**

During the audit, the audit team may identify potential problems or 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 Observations or Recommendations using the following definitions:

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

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.

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## 7.1 Observations

No Observations were provided to ANL/CCP management as a result of the audit.

## 7.2 Recommendations

The following Recommendation was presented to ANL/CCP management as a result of the audit.

### Recommendation

It is recommended that the following changes be made to AK documents:

AK Summary Document CCP-AK-ANLE-500

1. Add AK Source Document C351 back into the list of relevant source documents in section 9.0 of the report.
2. In Table 7 on the waste stream DQO Determination Summary for the 10 WIPP Required Radionuclides, add Sr-90 to the radionuclides "consistently reported by the generator" based on the results in Table 6.
3. In section 5.4.1.2 on waste material parameters, change "1995" to "1993" in the first sentence.

In the AK Source Document Summary prepared for AK Source Document U083, correct the sentence that states that analytical results for specific Resource Conservation and Recovery Act (RCRA) metals exceed the RCRA regulatory authority.

## 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 Evaluated During CBFO Audit A-08-24 |



## PERSONNEL CONTACTED DURING THE AUDIT

| PERSONNEL CONTACTED DURING AUDIT A-08-24 |                                |                   |                        |                    |
|--|--------------------------------|-------------------|------------------------|--------------------|
| NAME                                     | ORG/TITLE                      | PRE-AUDIT MEETING | CONTACTED DURING AUDIT | POST-AUDIT MEETING |
| Atwood, Alyca                            | CCP/Training Coordinator       |                   | X                      |                    |
| Billett, Michele                         | CCP/Training Coordinator       |                   | X                      |                    |
| Brandjes, Chris                          | ANL/Waste Specialist           |                   | X                      |                    |
| Chavez, Christa                          | WTS/CCP NDA Support            | X                 | X                      |                    |
| Crosson, Kevin                           | NOD/WM/ PM PK (Alt)            |                   | X                      |                    |
| Dietzel, Dale                            | DOE/ASO Fed. Proj Director     | X                 |                        |                    |
| Fisher, A. J.                            | CCP Training/Technical Advisor | X                 | X                      |                    |
| Frego, Jim                               | ANL/RH-TRU PM                  | X                 |                        | X                  |
| Gatliffe, Thomas                         | WTS/CCP SPM                    |                   | X                      |                    |
| Geller, Jay                              | ANL/QA Engineer                | X                 |                        |                    |
| Gomez, Chris                             | WTS/CCP QA Engineer            | X                 | X                      |                    |
| Harvill, Joe                             | CCP/NDA Tech Specialist        | X                 | X                      |                    |
| Hudston, Lisa                            | WTS/CCP NDA/DTC Support        | X                 | X                      |                    |
| Joshi, Kaushik                           | DOE/ASO RH-TRU Project         | X                 |                        |                    |
| Kirkes, Creta                            | CCP/WCO                        |                   | X                      |                    |
| Lewitt, Richard S.                       | CCP/MLU MLU Operator           |                   | X                      |                    |
| Mojica, Tommy                            | WTS/VEE/RH                     | X                 | X                      |                    |
| Neely, Hillari J.                        | WTS/CCP/SPM                    |                   | X                      |                    |
| Pearcy, Sheila                           | CCP/Triumph/Records Mgr.       |                   | X                      | X                  |
| Peters, Kevin                            | CCP/AKE                        | X                 | X                      |                    |
| Porter, Larry                            | CCP/SPM                        | X                 | X                      | X                  |
| Quintana, Irene                          | CCP/SPM                        | X                 | X                      | X                  |
| Root, F. Wesley                          | CCP/VPM                        | X                 | X                      |                    |
| Smith, Tyrone                            | WTS/CCP M & TE                 |                   | X                      |                    |

| PERSONNEL CONTACTED DURING AUDIT A-08-24 |   |                   |                        |                    |
|--|---|-------------------|------------------------|--------------------|
| NAME                                     | ORG/TITLE                                   | PRE-AUDIT MEETING | CONTACTED DURING AUDIT | POST-AUDIT MEETING |
| Stroble, J. R.                           | CBFO/NTP RH TRU Waste Certification Manager | X                 |                        | X                  |
| Wade, Louis R.                           | CCP/QAE                                     | X                 |                        | X                  |
| Watson, Lisa                             | LANL/CCP/AKE                                |                   | X                      |                    |
| Weyerman, C. Wade                        | CCP/MLU Field Ops Mgr                       |                   | X                      |                    |

## SUMMARY TABLE OF AUDIT RESULTS

| Documents                     | Concern Classification |      |     |     | QA Evaluation |                | Technical     |
|-------------------------------|------------------------|------|-----|-----|---------------|----------------|---------------|
|                               | CARs                   | CDAs | Obs | Rec | Adequacy      | Implementation | Effectiveness |
| <b>Activity</b>               |                        |      |     |     |               |                |               |
| ACCEPTABLE KNOWLEDGE          |                        |      |     | 1   | A             | S              | E             |
| VISUAL EXAMINATION            |                        |      |     |     | A             | S              | E             |
| VERIFICATION AND VALIDATION   |                        |      |     |     | A             | S              | E             |
| HEADSPACE GAS                 |                        | 1    |     |     | A             | S              | E             |
| WIPP WASTE INFORMATION SYSTEM |                        |      |     |     | A             | S              | E             |
| DOSE-TO-CURIE                 |                        |      |     |     | A             | S              | E             |
| TRAINING                      |                        |      |     |     | A             | S              | E             |
| RECORDS                       | 08-036                 |      |     |     | A             | S              | E             |
| QUALITY IMPROVEMENT           |                        |      |     |     | A             | S              | E             |
| TRANSPORTATION                |                        | 2    |     |     | A             | S              | E             |
| TOTALS                        | 1                      | 2    |     | 1   | A             | S              | E             |

**Definitions**

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

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

Rec = Recommendation  
 A = Adequate  
 NA = Not Adequate

## LISTING OF AUDITED DOCUMENTS

| No. | Procedure Number | DOCUMENT TITLE  |
|-----|------------------|---|
| 1.  | CCP-PO-001       | CCP Transuranic Waste Characterization Quality Assurance Project Plan                 |
| 2.  | CCP-PO-002       | CCP Transuranic Waste Certification Plan  |
| 3.  | CCP-PO-005       | CCP Conduct of Operations   |
| 4.  | CCP-PO-500       | CCP/ANL RH TRU Waste Interface Document   |
| 5.  | CCP-QP-002       | CCP Training and Qualification Plan   |
| 6.  | CCP-QP-004       | CCP Corrective Action Management  |
| 7.  | CCP-QP-005       | CCP TRU Nonconforming Item Reporting and Control                                      |
| 8.  | CCP-QP-006       | CCP Corrective Action Reporting and Control   |
| 9.  | CCP-QP-008       | CCP Records Management  |
| 10. | CCP-QP-011       | CCP Notebooks and Logbooks  |
| 11. | CCP-QP-021       | CCP Surveillance Program  |
| 12. | CCP-QP-028       | CCP Records Filing, Inventorying, Scheduling, and Dispositioning                      |
| 13. | CCP-TP-001       | CCP Project Level Data Validation and Verification                                    |
| 14. | CCP-TP-002       | CCP Reconciliation of DQOs and Reporting Characterization Data                        |
| 15. | CCP-TP-003       | CCP Data Analysis for S3000, S4000, and S5000 Characterization                        |
| 16. | CCP-TP-005       | CCP Acceptable Knowledge Documentation  |
| 17. | CCP-TP-043       | CCP Chain of Custody for SUMMA® Canister Sampling Using the INL Analytical Lab        |
| 18. | CCP-TP-093       | CCP Sampling of TRU Waste Containers  |
| 19. | CCP-TP-106       | CCP Headspace Gas Sampling Batch Data Report Preparation                              |
| 20. | CCP-TP-160       | CCP Random Selection of Containers for Headspace Gas Sampling and Analysis            |
| 21. | CCP-TP-163       | CCP Standard Visual Examination of Records  |
| 22. | CCP-TP-500       | CCP Remote-Handled Waste Visual Examination   |
| 23. | CCP-TP-504       | CCP Dose-to-Curie Survey Procedure for Remote-Handled Transuranic Waste               |
| 24. | CCP-TP-506       | CCP Preparation of the RH Transuranic Waste AK Characterization Reconciliation Report |
| 25. | CCP-TP-507       | CCP Shipping of Remote-Handled Transuranic Waste                                      |
| 26. | CCP-TP-509       | CCP Remote-Handled Transuranic Container Tracking                                     |
| 27. | CCP-TP-530       | CCP TRU Waste Certification and WWIS Data Entry                                       |
| 28. | WP 13-QA.03      | Quality Assurance Independent Assessment Program                                      |

**PROCESSES AND EQUIPMENT EVALUATED DURING AUDIT A-08-24**

| WIPP #   | Process/Equipment Description   | Applicable to the Following Waste Streams/Groups of Waste Streams | Currently Approved by NMED | Currently Approved by EPA |
|--|---|---|----------------------------|---------------------------|
| <b>PREVIOUSLY APPROVED PROCESSES OR EQUIPMENT</b>        |   |   |                            |                           |
| The following were reevaluated during CBFO Audit A-08-24 |   |   |                            |                           |
| 8RHVE1   | Visual Examination<br>CCP-TP-500, Remote-Handled Waste Visual Examination<br>CCP-TP-163, CCP Standard Visual Examination of Records   | Debris (S5000)  | YES                        | YES<br>(Records only)     |
| 8RHVE2   | Visual Examination of Newly Packaged RH Waste Drums<br>CCP-TP-500, Remote-Handled Waste Visual Examination  | Debris (S5000)  | YES                        | YES                       |
| Not Applicable   | Acceptable Knowledge<br>CCP-TP-005, CCP Acceptable Knowledge Documentation  | Debris (S5000)  | YES                        | YES                       |
| 8HSG2  | Headspace Gas Sampling<br>CCP-TP-093, CCP Sampling of TRU Waste Containers  | Debris (S5000)  | YES                        | N/A                       |
| Not Applicable   | Data verification and validation<br>CCP-TP-001, CCP Project Level Data Validation and Verification<br>CCP-TP-500, Remote-Handled Waste Visual Examination<br>CCP-TP-504, CCP Dose-to-Curie Survey Procedure | Debris (S5000)  | YES                        | YES                       |
| 8DTC1  | Dose-to-Curie<br>CCP-TP-504, CCP Dose-to-Curie Survey Procedure   | Debris (S5000)  | N/A                        | YES                       |
| Not Applicable   | Quality Assurance   | N/A   | N/A                        | YES                       |