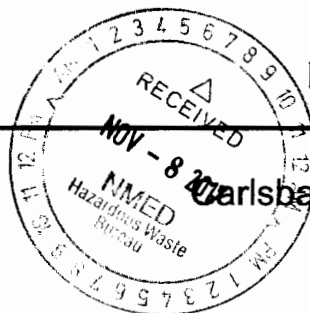


**ENTERED**

United States Government

Department of Energy

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**memorandum**Carlsbad Field Office  
Carlsbad, New Mexico 88221

**DATE:** NOV 08 2017  
**REPLY TO**  
**ATTN OF:** CBFO:OQA:DSM:BA:17-2255:UFC 2300.00  
**SUBJECT:** Interim Audit Report A-18-02, SRS/CCP TRU Waste Characterization and Certification  
**TO:** Mr. Daniel Ferguson, DOE-SR

The Carlsbad Field Office (CBFO) conducted annual Recertification Audit A-18-02, Savannah River Site Central Characterization Program (SRS/CCP) Transuranic (TRU) Waste Characterization and Certification, October 17 – 19, 2017. The interim audit report is attached.

The audit team concluded that, overall, the SRS/CCP programs evaluated are adequate relative to the flow-down of requirements. However, the implementation and effectiveness of all aspects of the SRS/CCP waste characterization activities were deemed indeterminate.

As a result of the audit, one condition adverse to quality was issued to SRS/CCP management under a separate letter.

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

Dennis S. Miehl  
Senior Quality Assurance Specialist

Attachment

171104



Mr. Daniel Ferguson

-2-

NOV 08 2017

cc: w/attachment  
T. Shrader, CBFO \* ED  
J. Carswell, CBFO ED  
M. Brown, CBFO ED  
J.R. Stroble, CBFO ED  
M. Navarrete, CBFO ED  
M. Stapleton, CBFO ED  
M. Fineran, CBFO ED  
N. Castaneda, CBFO ED  
T. Carver, CBFO ED  
J. Craig, DOE-SR ED  
J. Britain, NWP ED  
M. Percy, NWP ED  
R. Lee, NWP ED  
B. Pace, NWP ED  
J. Carter, NWP ED  
M. McDaniel, NWP ED  
V. Ballew, NWP ED  
S. Saiz, NWP ED  
A. Boyea, NWP ED  
A.J. Fisher, S1C ED  
J. Walsh, EPA ED  
J. Ellis, EPA ED  
T. Peake, EPA ED  
E. Feltcorn, EPA ED  
R. Joglekar, EPA ED  
J. Kieling, NMED ED  
R. Maestas, NMED ED  
D. Biswell, NMED ED  
T. Runyon, CTAC ED  
P. Martinez, CTAC ED  
C. Castillo, CTAC ED  
M. Leroch, CTAC ED  
P. Yanez, CTAC ED  
D. Harvill, CTAC ED  
G. White, CTAC ED  
Site Documents ED  
WWIS Database Admin ED  
CBFO QA File  
CBFO M&RC  
\*ED denotes electronic distribution

**U.S. DEPARTMENT OF ENERGY  
CARLSBAD FIELD OFFICE**

**INTERIM AUDIT REPORT**

**OF THE**

**SAVANNAH RIVER SITE  
CENTRAL CHARACTERIZATION PROGRAM**

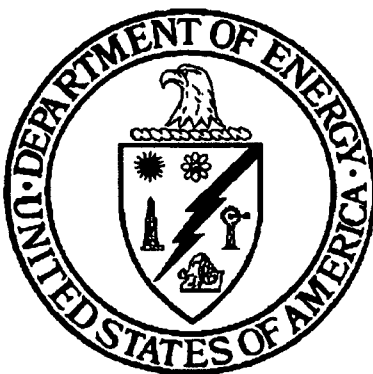
**FOR**

**TRANSURANIC WASTE  
CHARACTERIZATION AND CERTIFICATION ACTIVITIES**

**CARLSBAD, NEW MEXICO**

**AUDIT NUMBER A-18-02**

**October 17 – 19, 2017**



Prepared by: Priscilla Yanez  
Priscilla Yanez, CTAC  
Audit Team Leader

Date: 11-8-17

Approved by: Michael R. Brown  
Michael R. Brown, Director  
CBFO Office of Quality Assurance

Date: 11/8/2017

## 1.0 EXECUTIVE SUMMARY

U.S. Department of Energy (DOE) Carlsbad Field Office (CBFO) Recertification Audit A-18-02 was performed to evaluate the continued adequacy, implementation, and effectiveness of established programs for transuranic (TRU) waste characterization and certification activities performed at the Savannah River Site (SRS) by the Nuclear Waste Partnership LLC (NWP), Central Characterization Program (CCP). The audit team evaluated the programs, procedures, and processes for characterizing contact-handled (CH) Summary Category Groups (SCGs) S3000 solids waste, S4000 soils/gravel waste, S5000 debris waste, and remote-handled (RH) SCG S5000 debris waste. The audit was based on requirements relative to the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (HWFP), the *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant (WAC)*, the *CBFO Quality Assurance Program Document (QAPD)*, the *Remote-Handled TRU Waste Characterization Program Implementation Plan (WCPIP)*, and the *Waste Isolation Pilot Plant Documented Safety Analysis (DSA)*, Chapter 18. The audit was performed at the Skeen-Whitlock Building in Carlsbad, New Mexico, October 17 – 19, 2017.

TRU waste characterization activities at the SRS have been suspended and no characterization field activities have occurred since the previous recertification audit (A-17-02, conducted December 6 - 8, 2016). The results of Audit A-18-02 confirmed that SRS/CCP operations at the SRS continue to be in a state of suspension.

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

Due to the limited scope of this audit and inactivity at the SRS since Audit A-17-02, the audit team was unable to determine the overall adequacy, implementation, and effectiveness of SRS/CCP waste characterization and certification activities. The audit team concluded that the SRS/CCP quality assurance (QA) elements of Enhanced Acceptable Knowledge (AK) evaluated were adequately established for compliance with applicable upper-tier requirements, satisfactorily implemented, and effective.

Once waste characterization field activities resume at the SRS, CBFO will conduct a recertification audit as a basis for reinstating authority to perform waste characterization activities and resume waste shipments from SRS to the WIPP.

The audit team identified one concern during the audit, related to AK source documentation. The concern resulted in a condition adverse to quality (CAQ), corrective action report (CAR) 18-001 (see section 6.1).

## **2.0 SCOPE AND PURPOSE**

### **2.1 Scope**

The audit team evaluated documentation to verify adequacy, implementation, and effectiveness of the SRS/CCP TRU waste characterization and certification activities for CH SCGs S3000 solids waste, S4000 soils/gravel waste, and S5000 debris waste, and RH SCG S5000 debris waste. Documentation associated with transportation activities evaluated during the audit was limited to the PuOX waste stream. The audit team evaluated the shipment data packages and Hazardous Waste Manifests for the PuOX shipments that included previously certified containers in the Waste Handling Building (WHB) and at the SRS. The audit team also verified that a technical review of the generator site's processes had been performed. However, at the time of the audit, the Generator Site Technical Review (GSTR) team had not disclosed official results, nor completed their review of the program; therefore, the audit team was unable to determine if SRS had satisfactorily addressed and resolved all of the identified issues related to the GSTR. Any issues identified during the technical review will be resolved per DOE/WIPP-16-3564, *Generator Site Technical Review Procedure*. The following elements, as applicable to the activities performed, were evaluated:

#### General Activities

- Review of the SRS/CCP Site Interface Agreement
- Results of Previous Audits
- Changes in Programs or Operations
- New Programs or Activities Being Implemented
- Changes in Key Personnel

#### Quality Assurance Activities

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

#### Technical Activities

- Acceptable Knowledge (AK)
- Project-Level Data Validation and Verification (PL V&V)
- Real-time Radiography (RTR)
- Visual Examination (VE)
- Nondestructive Assay (NDA)
- Dose-to-Curie (DTC)
- WIPP Waste Information System/Waste Data System (WWIS/WDS)

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

- Waste Isolation Pilot Plant Hazardous Waste Facility Permit NM4890139088-TSDF, New Mexico Environment Department
- DOE/CBFO-94-1012, *CBFO Quality Assurance Program Document*
- DOE/WIPP-02-3214, *Remote-Handled TRU Waste Characterization Program Implementation Plan*
- DOE/WIPP-02-3122, *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant*
- DOE/WIPP-07-3372, *Waste Isolation Pilot Plant Documented Safety Analysis (DSA) Chapter 18*

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

- CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- CCP-PO-002, *CCP Transuranic Waste Certification Plan*
- WP 13-1, *Nuclear Waste Partnership LLC Quality Assurance Program Description*
- Related technical and QA implementing procedures

## 2.2 Purpose

Audit A-18-02 was conducted to assess the SRS/CCP's sustained compliance with requirements applicable to the waste characterization and certification activities for CH SCGs S3000 solids waste, S4000 soils/gravel waste, S5000 debris waste, and RH SCG S5000 debris waste, and to determine if these requirements are adequately established and effectively implemented.

## 3.0 AUDIT TEAM

Dennis Miehl	CBFO Office of Quality Assurance Representative
Priscilla Yanez	Audit Team Leader, CBFO Technical Assistance Contract (CTAC)
Dustin Stegman	Auditor, CTAC
Joe Lopez	Auditor/Technical Specialist, CTAC
Jim Schuetz	Auditor/Technical Specialist, CTAC
Ricardo Chavez	Auditor/Technical Specialist, CTAC
Richard Blauvelt	Technical Specialist, CTAC
Randy Fitzgerald	Technical Specialist, CTAC

## **OBSERVERS**

Ricardo Maestas	New Mexico Environment Department (NMED)
David Biswell	NMED
Jerry Ellis	U.S. Environmental Protection Agency (EPA)
Kira Darlow	EPA (Sandford Cohen & Associates [SC&A])
Patrick Kelly	EPA (SC&A)

## **4.0 AUDIT PARTICIPANTS**

The individuals contacted during the audit are identified in Attachment 1. A pre-audit meeting was held in room T-224 at the Skeen-Whitlock Building in Carlsbad, New Mexico, on October 17, 2017. Daily management briefings were held to update SRS/CCP management and staff on audit progress and identified concerns. The audit was concluded with a post-audit meeting held in room T-224 at the Skeen-Whitlock Building in Carlsbad, New Mexico, on October 19, 2017.

Attachment 2 contains a summary table of audit results. Attachment 3 contains a list of SRS/CCP documents assessed during the audit. Attachment 4 contains the list of the processes and equipment evaluated during the audit. Audit activities, including objective evidence reviewed, are described below.

## **5.0 SUMMARY OF AUDIT RESULTS**

### **5.1 Program Adequacy, Implementation, and Effectiveness**

This audit was performed to assess the capability of SRS/CCP to characterize CH SCG S3000 solids waste, CH SCG S4000 soils/gravel waste, and CH SCG S5000 debris waste and RH SCG S500 debris waste for compliance with the requirements specified in the WIPP HWFP WAP, the WIPP WAC, Chapter 18 of the DSA, and the CBFO QAPD. No characterization methods were assessed due to inactivity at the SRS.

The audit team concluded that the applicable SRS/CCP TRU waste characterization and certification programs for CH SCGs S3000 solids waste, S4000 soils/gravel waste, S5000 debris waste, and RH SCG S5000 debris waste are adequately established for compliance with upper-tier requirements. However, the implementation and effectiveness of waste characterization field activities were deemed indeterminate since no waste characterization has been performed by SRS/CCP in the past year. The sole CCP activity related to SRS AK has been the development and approval of Enhanced AK products for specific SRS waste streams. As a result, the AK portion of this audit was focused on available enhanced AK products and supporting documentation for subpopulations of SRS TRU waste streams. These waste streams and subpopulations include:

- Three containers from CH TRU debris waste stream SR-MD-PAD1 in the WHB
- One container from CH TRU debris waste stream SR-W027-HBL-BOX in the WHB

- Containers in the WHB and at SRS from CH TRU debris waste stream SR-221H-PuOx

The implementation and effectiveness of the enhanced AK products for the above waste streams and subpopulations are adequately established, satisfactorily implemented, and effective in achieving the desired results.

## **5.2 General Activities**

### **5.2.1 Results of Previous Audits**

The audit team examined the results of previous CBFO Recertification Audit of the SRS/CCP (A-17-02). The audit team verified that no waste characterization activities have been performed by SRS/CCP since the previous audit; therefore, the adequacy, implementation, and effectiveness of all waste characterization activities at the SRS remains indeterminate.

### **5.2.2 Changes in Programs or Operations**

The audit team determined through interviews with the SRS/CCP Site Project Manager (SPM) that there were no significant changes in programs or operations since the previous recertification audit, A-17-02. No waste characterization activities have been performed by SRS/CCP since the previous audit.

As reported in the previous audit report (A-17-02), CCP has suspended operations at SRS for an indefinite period and all CCP equipment that was used to characterize waste at SRS has either been shipped offsite or placed out-of-service.

### **5.2.3 New Programs or Activities Being Implemented**

In response to the breached drum event at the WIPP in February 2014, the DOE and NWP are strengthening their programs to provide more oversight of TRU waste generator site processing/treatment activities being applied to active waste streams prior to waste being transferred to CCP for characterization, certification, and shipment. A GSTR of SRS was performed by CBFO since the last recertification audit (see section 5.2.5 for additional details).

CCP has implemented the Enhanced Acceptable Knowledge process. So far, the Acceptable Knowledge Assessments (AKAs) have been completed along with the Chemical Compatibility Evaluation Memorandums (CCEMs) approved for SRS debris waste streams SR-221H-PuOx (containers in the WHB and at SRS), SR-W027-HBL-BOX (containers in the WHB), and SR-MD-PAD1(containers in the WHB). Also, the Basis of Knowledge (BoK) for waste streams SR-W027-HBL-BOX and SR-MD-PAD1 have been approved by CBFO for the containers in the WHB. Waste stream SR-221H-PuOx does not require a BOK (no oxidizing chemicals are present).



#### **5.2.4 Changes in Key Personnel**

Changes in key personnel since the last recertification audit include a new CCP Manager and a new RH Manager.

#### **5.2.5 Generator Site Technical Review**

The CBFO and NWP, as WIPP HWFP co-permittees, performed GSTR SR-1-17-01, July 17 - 21, 2017, at SRS in Aiken, South Carolina. At the time of the audit, the GSTR team had not disclosed official results, nor completed their review of the program; therefore, the audit team was unable to determine if SRS has satisfactorily addressed and resolved all of the identified issues related to the GSTR.

#### **5.2.6 SRS/CCP Program Interface**

The audit team evaluated the program interface established between the CCP and the SRS as documented in CCP-PO-004, Rev. 38, *CCP/SRS Interface Document*. This document describes the interfaces, roles and responsibilities, and program requirements applicable to both organizations in support of CCP waste characterization activities at the SRS. No concerns were identified.

### **5.3 Quality Assurance Activities**

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

#### **5.3.1 Personnel Qualification and Training**

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

- CCP-PO-047, Rev. 1, *CCP Training and Qualification Program Document*
- CCP-QP-002, Rev. 43, *CCP Training and Qualification Plan*
- CCP-QP-041, Rev. 1, *CCP Job Needs Analysis and Design*
- CCP-QP-042, Rev. 0, *CCP Project Level Training and Qualification*

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

Personnel training records associated with AK and SPMs were examined to verify implementation of associated requirements and to verify that personnel performing activities are appropriately qualified. Record reviews included qualification cards for

three Acceptable Knowledge Experts (AKEs), eight SPMs, and other pertinent qualification documentation, which includes an email stating that CCP characterization is no longer active at SRS and will not require any further updates to the List of Qualified Individuals (LOQI).

The procedures reviewed and objective evidence assembled provided evidence to confirm that the applicable requirements for personnel qualification and training were adequately established for compliance with upper-tier requirements, satisfactorily implemented, and effective in achieving the desired results. No concerns were identified.

### **5.3.2 Control of Nonconforming Items**

The audit team reviewed implementing procedure CCP-QP-005, Rev. 25, *CCP TRU Nonconforming Item Reporting and Control*, to determine the degree to which the procedure adequately addresses upper-tier requirements. Results of the review indicate that the procedure adequately addresses upper-tier requirements. The audit team interviewed the CCP QA personnel and reviewed randomly selected nonconformance reports (NCRs).

There have been no CH or RH waste characterization activities performed since the last SRS/CCP program recertification audit (A-17-02); therefore, there were no NCRs related to CH or RH waste characterization activities to review at the data generation level (DGL) or project level (PL) that required reporting to CBFO. The audit team verified CCP personnel are familiar with the process for reporting NCRs to the Permittee via email to CBFO within the seven days' time frame required by the Permit. The audit team determined that CCP personnel are familiar with the overall process associated with NCRs, and that procedure implementation is expected to be adequate once these activities resume.

The procedures reviewed and objective evidence assembled provided evidence to confirm that the applicable requirements for nonconformance reporting are adequately established for compliance with upper-tier requirements. No concerns were identified.

### **5.3.3 QA Records**

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

- CCP-PO-001, Rev. 22, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- CCP-QP-008, Rev. 26, *CCP Records Management*

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

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

The level of control for QA records was verified through review of the Records Inventory Disposition Schedule (RIDS) dated June 29, 2017 for NWP/CCP CH (All Sites) and the RIDS dated June 13, 2017 for NWP/CCP RH (All Sites). Each RIDS is reviewed annually, as required.

The audit team verified the maintenance of records in file cabinets and in the electronic system. Records that are maintained in paper copy in the CCP Records Center are placed in locked fire-resistant cabinets. Access to the file cabinets is controlled through the use of keys, and labels placed on each cabinet post the names of personnel approved for access to the files. Files are adequately organized and maintained in both the paper and electronic file systems. Records are adequately segregated from non-record documents. Files that require control of access, such as those determined to be Unclassified Controlled Nuclear Information (UCNI), Official Use Only (OUO), Internal Use Only (IUO), and No Foreign National (NFORN) documents are maintained on separate electronic servers where computer user access is restricted. Paper copies of these restricted access documents are stored separate from other documents. Records personnel are familiar with requirements for restricted access files and adequately control distribution. Access to electronic files and restricted files is controlled administratively in the case of physical electronic media and by use of server logon/password methods for electronic files maintained on computer servers.

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

#### **5.4 Technical Activities**

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

##### **5.4.1 Acceptable Knowledge**

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

- *CCP-PO-001, Rev. 22, CCP Transuranic Waste Characterization Quality Assurance Project Plan*

- CCP-TP-002, Rev. 27, *CCP Reconciliation of DQOs and Reporting Characterization Data*
- CCP-TP-005, Rev. 29, *CCP Acceptable Knowledge Documentation*
- CCP-TP-200, Rev. 2, *Chemical Compatibility Evaluation Memorandum and Acceptable Knowledge Assessment Review*
- CCP-TP-506, Rev. 5, *CCP Preparation of the Remote-Handled Transuranic Waste Acceptable Knowledge Characterization Reconciliation Report*
- WP 13-QA.03, Rev. 26, *Quality Assurance Independent Assessment Program*

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

The AK audit team evaluated compliance with the WAP requirements listed in the C6-2 checklist along with portions of the C6-1 checklist. Objective evidence was reviewed and compiled to demonstrate compliance with the applicable requirements on these checklists. The team also reviewed the AK record with respect to relevant requirements of the WAC. A significant portion of the audit addressed the status of enhanced AK products for the waste streams examined with the upper-tier requirements identified in the WIPP WAC, Appendices H and I.

The audit team reviewed training records for three AKEs and eight SPMs who have participated or could potentially participate in waste characterization activities at SRS/CCP. The audit team usually examines batch data reports (BDRs), discrepancy resolutions, and nonconformance reports for AK during a recertification audit. However, these documents were not available for evaluation during this audit, as there was no certification or characterization testing since October of 2014. The audit team examined the handling of AK records for compliance with preparation, legibility, accuracy, review, approval, and maintenance requirements. The distribution, control, and use of appropriate AK procedures were also reviewed. The audit team examined the most recent audit report relevant to AK, NWP Quality Assurance Audit I17-01, completed December 20, 2016, at Oak Ridge National Laboratory. Although this audit report was not specific to SRS, the activities evaluated are relevant to all of CCP's sites.

#### Enhanced Acceptable Knowledge

The scope of the AK portion of this audit was driven by activities related to AK conducted at SRS during recent years. CCP has not been present at SRS to conduct certification and characterization activities. There has been no characterization testing since October of 2014. There have been no revisions to AK Summary Reports or AK attachments. There have been no revisions to any Waste Stream Profile Forms or Reconciliation of data quality objectives (DQOs) or any documented load management activities. The sole CCP activity related to SRS AK has been the development and approval of Enhanced AK Products for specific SRS waste streams. As a result, the AK portion of this audit was focused on available enhanced AK products and supporting

documentation for subpopulations of SRS TRU waste streams. These waste streams and subpopulations include:

- Three containers from CH TRU debris waste stream SR-MD-PAD1 in the WHB
- One container from CH TRU debris waste stream SR-W027-HBL-BOX in the WHB
- Containers in the WHB and at SRS from CH TRU debris waste stream SR-221H-PuOx

The requirements documents include:

- DOE/WIPP-02-3122, Rev 8.0, *TRU Waste Acceptance Criteria for the Waste Isolation Pilot Plant*
- DOE/WIPP-17-3585, Rev. 1, *Basis of Knowledge for Evaluating Oxidizing Chemicals in TRU Waste Stored in the Waste Handling Building Container Storage Unit Since February 14, 2014, for a Decision to Dispose and the Los Alamos National Laboratory TYPE 1 TRU Waste Stored at Waste Control Specialists for Waste Isolation Pilot Plant Acceptance*
- CBFO MP 4.15, Rev. 2, *Review of TRU Waste Acceptable Knowledge Documents*
- CCP-TP-005, Rev. 29, *CCP Acceptable Knowledge Documentation*
- CCP-TP-200 Rev 2, *Chemical Compatibility Evaluation Memorandum and Acceptable Knowledge Assessment Review*

The results of the Enhanced AK review are noted in the following enhanced AK product sections.

#### Interface Waste Management Documents List (IWMDL)

For the waste streams examined, there was no requirement for an IWMDL, since the waste containers had already been shipped or were on the CCP AK Tracking Spreadsheet prior to the implementation of the requirement. It is likely that upon return to SRS, CCP will need to generate an IWMDL for active waste streams such as SR-221H-PuOx.

#### Chemical Compatibility Evaluation (CCE)

The AK audit team examined draft and final copies of the CCE for waste streams SR-MD-PAD1 and SR-W027-HBL-BOX. The examination also included a detailed assessment of the comments and resolutions noted on the Document Review Record (DRR) for both the internal CCP and CBFO reviews. In addition, the audit team reviewed the applicable CCE checklist (Attachment 1 from CCP-TP-200). The documentation from CBFO documenting approval and a copy of the appropriate checklist from MP 4.15 was also examined and compiled. The final approved CCE for SR-221H-PuOx was examined during CBFO Surveillance S-17-31 and the activity was

not repeated. The CCE is an UCNI document and will not be included in the objective evidence compiled. It should be noted that for each of the three CCEs for waste streams with containers in the WHB, the CCEs were written to apply to the entire waste stream population including those containers still at SRS. Finally, a draft CCE that is applied to several debris waste streams from operation of the HB Line and the H Canyon, including SR-W027-221H-HET, SR-W027-221H-HEPA, SR-W027-221H-HET-C, and SR-RH-221H.01 was examined during this audit along with DRRs from the internal review. The waste streams evaluated in this draft CCE corresponds to the H-Canyon SR-W027-HBL-BOX waste stream described in the CCE for that stream, since the wastes were generated from the same process areas and facilities, resulting in similar chemicals and materials.

#### Acceptable Knowledge Assessment (AKA)

The AK audit team examined AKAs for waste streams SR-MD-PAD1 and SR-W027-HBL-BOX. For these waste streams, the documents were developed specifically for the container subpopulation in the WHB, that is, three containers of SR-MD-PAD1 waste and one container of SR-W027-HBL-BOX waste. For example, only procedures and revisions relevant to the date of generation of the waste containers were considered. The AKA for waste stream SR-221H-PuOx addressed not only the population in the WHB but also waste containers at SRS that are on the AK Tracking Spreadsheet. In addition to a comprehensive review of the AKAs, the auditors also examined the appropriate checklist, Attachment 2, from CCP-TP-200.

#### Basis of Knowledge (BoK)

The AK auditors examined the final approved BoK memorandums for waste streams SR-MD-PAD1 and SR-W027-HBL-BOX. As with the AK Assessments for these waste streams, the memorandums addressed only the contents of the waste containers in the WHB. Documentation from packaging and repackaging records along with nondestructive examination (NDE) data was used effectively to demonstrate compliance with the requirements of the BoK guidance. In addition to the memoranda, the audit team reviewed approval documentation from CBFO including correspondence from the BoK Review Board. A BoK memorandum was not required for waste stream SR-221H-PuOx as directed by CBFO interim guidance entitled "Temporary Documentation of the Basis of Knowledge" issued December 15, 2016 which exempted waste streams where there are no oxidizing chemicals present or available in the final waste form.

#### AK Briefings

AK Briefings are required whenever an AK Summary Report (AKSR) is revised. They are intended to provide information to CCP and generator site relevant staff on the nature and impact of the revisions. Since no AKSR revisions have occurred for the waste streams examined, there have been no briefings.

The AK audit team identified one concern. The final approved CCE for waste stream SR-MD-PAD1 makes reference to a document that is not available in CCP Records. This has been identified as a CAQ and is discussed later in more detail (see section 6.1).

The SRS Enhanced AK Program was considered to be adequate in representing the relevant requirements and adequate in the implementation and effectiveness of these requirements.

#### **5.4.2 Project-Level Data Validation and Verification**

The audit team conducted interviews with responsible personnel and verified no PLV&V activities have been performed by SRS/CCP since the previous audit. Accordingly, the adequate and satisfactory implementation of applicable requirements for PL was deemed indeterminate and will require a full evaluation as part of a recertification audit before waste characterization and certification activities resume at the SRS.

#### **5.4.3 Real-time Radiography**

The audit team conducted interviews with responsible personnel and verified no waste characterization field activities have been performed by SRS/CCP since the previous audit. Accordingly, the adequate and satisfactory implementation of applicable requirements for RTR was deemed indeterminate and will require a full evaluation as part of a recertification audit before waste characterization and certification activities resume at the SRS.

#### **5.4.4 Visual Examination**

The audit team conducted interviews with responsible personnel and verified no waste characterization field activities have been performed by SRS/CCP since the previous audit. Accordingly, the adequate and satisfactory implementation of applicable requirements for VE was deemed indeterminate and will require a full evaluation as part of a recertification audit before waste characterization and certification activities resume at the SRS.

#### **5.4.5 Nondestructive Assay**

The audit team conducted interviews with responsible personnel and verified no waste characterization field activities have been performed by SRS/CCP since the previous audit. Accordingly, the adequate and satisfactory implementation of applicable requirements for NDA was deemed indeterminate and will require a full evaluation as part of a recertification audit before waste characterization and certification activities resume at the SRS.

#### **5.4.6 Dose-to-Curie**

The audit team conducted interviews with responsible personnel and verified no waste characterization field activities have been performed by SRS/CCP since the previous audit. Accordingly, the adequate and satisfactory implementation of applicable requirements for DTC was deemed indeterminate and will require a full evaluation as part of a recertification audit before waste characterization and certification activities resume at the SRS.

#### **5.4.7 WIPP Waste Information System/Waste Data System**

The audit team verified through interviews and review of procedures and objective evidence that SRS/CCP maintains a WWIS certification program that meets the requirements of the WIPP HWFP. In discussion with the CCP Waste Certification Official, the audit team determined that there have been no recent CH or RH waste certification activities performed at the SRS Host Site location since the last re-certification audit. The procedures evaluated were CCP-TP-030, Rev. 36, *CCP CH TRU Waste Certification and WWIS/WDS Data Entry* and CCP-TP-530, Rev. 12, *CCP RH TRU Waste Certification and WWIS/WDS Data Entry*. The team reviewed the objective evidence provided with respect to procedure implementation sections and flow-down of upper-tier requirements using the Table C6-1 WAP March 2015 Checklist.

The audit team evaluated CH Waste Characterization Case Files for containers HBL120459, HBL120550, and HBL120513 from CH shipment SR170008. The containers were properly input into the WWIS using the Integrated Data Center (IDC) and/or the spreadsheet data summary procedure steps and methods. Waste characterization and certification records are maintained electronically for the IDC data entry method and for WWIS/WDS data and in paper format for the spreadsheet data summary data entry method. All data was entered into the WWIS in the exact format required by the database, and all of the applicable data presented on Table C-3 of the Permit was transmitted to the WWIS. The CH containers were previously certified by Waste Certification Official (WCO) personnel and were recently released for shipment. There has been no characterization or certification activity performed for CH containers at the SRS Host Site location since the last CBFO recertification audit A-17-02. The characterization data and WCO certifications did not change from the date of the original certification to the date of release for shipment. The audit team evaluated the shipment data packages and Hazardous Waste Manifests for the CH shipments that included these previously certified containers. The previously generated and certified CH Waste Characterization Case Files adequately included container information summaries and pages from BDRs showing analyses values and Container Data Reports from WWIS/WDS. The audit team evaluated examples of container characterization and certification from implementation of procedure sections for both the IDC and spreadsheet data summary methods.



There has been no characterization or certification activity performed for RH containers at the SRS Host Site location and there has been no shipment of RH waste since the last shipment of 2012 and since the last CBFO recertification audit A-17-02.

The procedures reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for WWIS/WDS data entry are adequately established, satisfactorily implemented, and effective in achieving the desired results. No concerns were identified.

## 6.0 CORRECTIVE ACTIONS, OBSERVATIONS, AND RECOMMENDATIONS

### 6.1 Corrective Action Reports

During the audit, the audit team may identify CAQs, as defined below, and document such conditions on a CAR.

Condition Adverse to Quality – 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 quality assurance program.

The following CAR was issued as a result of the audit.

#### **CAR 18-001**

Condition:

During the review of the approved CCEM for waste stream SR-MD-PAD1 designated as CCE001, guidance from the CBFO is referenced and given an AK Source Document number of C104, "*CBFO Memo Regarding Nitric Acid/Nitrated Metals and Organic Debris Waste*"; the unsigned source document (C104) was not available for retrieval from the records file. Although WIPP Form WF17-693 was issued by CCP (7/12/17), to address the unapproved source document, the WIPP Form concludes that there was no QA Program violation.

Requirement:

WP 13-1, *Nuclear Waste Partnership LLC Quality Assurance Program Description*, Section 1.5: "Documents referenced by final reports relating to WIPP site characterization, except readily available references such as encyclopedias, dictionaries, engineering handbooks, national codes and standards, etc., shall be retrievable from a QA records system. Preparers of such reports shall ensure the entry of such documents into a QA records system."

## **6.2 Deficiencies Corrected During the Audit**

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

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

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

No CDAs were identified during the audit.

## **6.3 Observations**

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

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

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

No Observations were identified during the audit.

## **6.4 Recommendations**

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

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

requirements.

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

No Recommendations were offered for management consideration during the audit.

## **7.0 LIST OF ATTACHMENTS**

- Attachment 1: Personnel Contacted During Audit A-18-02
- Attachment 2: Summary Table of Audit Results
- Attachment 3: List of Audited Documents
- Attachment 4: List of Processes and Equipment Reviewed

<b>PERSONNEL CONTACTED DURING AUDIT A-18-02</b>				
<b>NAME</b>	<b>ORG/TITLE</b>	<b>PRE-AUDIT MEETING</b>	<b>CONTACTED DURING AUDIT</b>	<b>POST-AUDIT MEETING</b>
Ballew, V.	NWP/QA Audits Manager	X	X	
Billet, M.	CCP Training Coordinator	X	X	
Biswell, D.	NMED	X	X	
Brown, M.	CBFO/Director CBFO QA	X	X	X
Carver, T	CBFO/NTP		X	
Darlow, K.	U.S. EPA/SC&A	X	X	X
Ellis, J.	U.S. EPA	X	X	X
Greenwood, T.	AK Manager		X	
Harrison, J.	CCP/AKE	X	X	
Hutch, C.	CCP/CH SPM		X	
Kelly, P.	U.S. EPA/SC&A/ QA Auditor	X	X	X
Kirkes, C.	NWP/CCP/WCO		X	
Knox, J.	NWP/CCP/CH Site Project Manager	X	X	X
Lee, R.	NWP/CCP/Project Manager	X	X	
Lopez, K.	CCP Training	X		
Maestas, R.	NMED	X	X	
Miehls, D.	CBFO/QA/Sr. QA Specialist	X	X	X
Nesser, C.	NWP/QA Specialist	X	X	
Pace, B.	NWP/CCP Issues Manager	X	X	X
Pearcy, S.	NWP/CCP/Records Manager	X	X	
Peters, K.	AKE	X	X	
Pyeatt, B.	NWP/QA Analyst	X	X	
Saiz, S.	NWP/QA	X	X	
Shaffer, Steve	AKE	X	X	

<b>SUMMARY TABLE OF AUDIT RESULTS</b>							
QA / Technical Elements	Concern Classification				QA Evaluation		Technical Evaluation
	CARs	CDAs	Obs	Rec	Adequacy	Implementation	Effectiveness
Program Status/Program Changes/Interface					A	S	E
Enhanced Acceptable Knowledge	1				A	S	E
Project Level Data V & V					I	I	I
Real-time Radiography					I	I	I
Visual Examination					I	I	I
Nondestructive Assay					I	I	I
Dose-to-Curie					I	I	I
QA General C6-1 Training					A	S	E
QA General C6-1 NCRs / Records / Doc Control					A	S	E
QA General C6-1 WWIS / WDS					A	S	E
<b>TOTALS</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>			

**Definitions**

E = Effective

S = Satisfactory

I = Indeterminate

M = Marginal

U = Unsatisfactory

CAR = Corrective Action Report

CDA = Corrected During Audit

NE = Not Effective

Obs – Observation

Rec = Recommendation

A = Adequate

NA = Not Adequate

<b>LIST OF AUDITED DOCUMENTS</b>			
	<b>Document No.</b>	<b>Revision Number</b>	<b>Document Title</b>
1.	CBFO MP 4.15	2	Review of TRU Waste Acceptable Knowledge Documents
2.	CCP-PO-001	22	CCP Transuranic Waste Characterization Quality Assurance Project Plan
3.	CCP-PO-002	29	CCP Transuranic Waste Certification Plan
4.	CCP-PO-004	38	CCP/SRS Interface Document
5.	CCP-PO-005	29	CCP Conduct of Operations
6.	CCP-PO-047	1	CCP Training and Qualification Program Document
7.	CCP-QP-002	43	CCP Training and Qualification Plan
8.	CCP-QP-005	25	CCP TRU Nonconforming Item Reporting and Control
9.	CCP-QP-008	26	CCP Records Management
10.	CCP-QP-010	27	CCP Document Preparation, Approval, and Control
11.	CCP-QP-028	17	CCP Records Filing, Inventorying, Scheduling, and Dispositioning
12.	CCP-QP-041	1	CCP Job Needs Analysis and Design
13.	CCP-TP-002	27	CCP Reconciliation of DQOs and Reporting Characterization Data
14.	CCP-TP-005	29	CCP Acceptable Knowledge Documentation
15.	CCP-TP-030	36	CCP CH TRU Waste Certification and WWIS/WDS Data Entry
16.	CCP-TP-200	2	Chemical Compatibility Evaluation Memorandum and Acceptable Knowledge Assessment Review
17.	CCP-TP-506	5	CCP Preparation of the Remote-Handled Transuranic Waste Acceptable Knowledge Characterization Reconciliation Report
18.	CCP-TP-530	12	CCP RH TRU Waste Certification and WWIS/WDS Data Entry
19.	WP 13-1	37	Nuclear Waste Partnership LLC, Quality Assurance Program Description
20.	WP 13-QA.03	26	Quality Assurance Independent Assessment Program

**LIST OF PROCESSES AND EQUIPMENT REVIEWED**

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>				
1NABC1	Nondestructive Assay Procedures – CCP-TP-189 and CCP-TP-191 Description – Box Segmented Gamma System (BSGS) and Box Neutron Assay System (BNAS), Five Foot Setback Configuration	Solids (S3000) Soils/Gravel (S4000) Debris (S5000)	N/A	*Suspended
1LCNDE	Real-time Radiography Procedure – CCP-TP-053 and CCP-TP-074 Description – Large Container Non-Destructive Examination (LCNDE) Unit – standard waste boxes (SWBs) and SLB2s	Solids (S3000) Soils/Gravel (S4000) Debris (S5000)	*Suspended	*Suspended
1RR4	Real-time Radiography Procedure – CCP-TP-053 and CCP-TP-145 Description – RTR-4, 55-gallon drums and standard waste boxes (SWBs), Standard large box 2s (SLB2s)	Solids (S3000) Soils/Gravel (S4000) Debris (S5000)	*Suspended	*Suspended
VISUAL	Visual Examination Procedure – CCP-TP-113 and CCP-TP-163 Description – VE QC Check for RTR, VE in lieu of RTR, VET for Retrievably Stored Waste	Solids (S3000) Soils/Gravel (S4000) Debris (S5000)	*Suspended	*Suspended
1RHVE1	Visual Examination Procedures – CCP-TP-163 and CCP-TP-500 Description – Visual Examination of Records for Remote-Handled for Waste Stream SR-RH-SDD.01 only	Debris (S5000)	*Suspended	*Suspended
1DTC1	Dose-to-Curie Procedure – CCP-TP-504 Description – Radiological Characterization	Debris (S5000)	N/A	*Suspended
16311	Dose-to-Curie (Sealed Sources) Procedure – CCP-RC-SRS-631 Description – Radiological Characterization	Debris (S5000)	N/A	*Suspended

WIPP #	Process/Equipment Description	Applicable to the Following Waste Streams/Groups of Waste Streams	Currently Approved by NMED	Currently Approved by EPA
N/A	Acceptable Knowledge (AK)	Solids (S3000) Soils/Gravel (S4000) Debris (S5000)	YES	YES
N/A	Data Generation and Project Level Validation and Verification (V&V)	Solids (S3000) Soils/Gravel (S4000) Debris (S5000)	YES	YES
N/A	WIPP Waste Information System/Waste Data System (WWIS/WDS)	Solids (S3000) Soils/Gravel (S4000) Debris (S5000)	YES	YES
N/A	Quality Assurance Program	Solids (S3000) Soils/Gravel (S4000) Debris (S5000)	N/A	YES
<b>NEW PROCESSES OR EQUIPMENT</b>				
Characterization field activities are currently suspended, therefore no new processes or equipment introduced.				

\*Waste characterization activities at the SRS have been suspended and no characterization field activities have occurred therefore remains indeterminate.