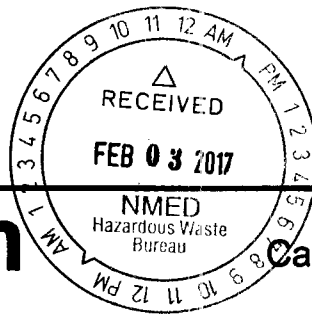


United States Government

memorandum**ENTERED**

Department of Energy

Carlsbad Field Office

Carlsbad, New Mexico 88221

DATE: FEB 03 2017

REPLY TO
ATTN OF: CBFO:OQA:DSM:BA:17-1027:UFC 2300.00

SUBJECT: Interim Audit Report A-17-02, SRS/CCP TRU Waste Characterization and Certification

TO: Mr. Daniel Ferguson, DOE-SR

The Carlsbad Field Office (CBFO) conducted annual Recertification Audit A-17-02, Savannah River Site Central Characterization Program (SRS/CCP) Transuranic (TRU) Waste Characterization and Certification, December 6 – 8, 2016. 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 due to inactivity at the site.

As a result of the audit, one recommendation was offered to SRS/CCP management for consideration.

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

170202



Mr. Daniel Ferguson

-2-

FEB 03 2017

cc: w/attachment
S. Ross, EM-3.113 *ED
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
N. Fineran, CBFO ED
H. Cruickshank, CBFO ED
N. Castaneda, CBFO ED
T. Carver, CBFO ED
J. Craig, DOE-SR ED
P. Breidenbach, NWP ED
J. Britain, NWP ED
F. Sharif, NWP ED
D.E. Gulbransen, NWP ED
A.J. Fisher, NWP ED
R. Reeves, NWP ED
B. Pace, NWP ED
J. Carter, NWP ED
M. McDaniel, NWP ED
V. Ballew, NWP ED
S. Punchios, NWP ED
A. Boyea, NWP ED
J. Walsh, 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
V. Daub, CTAC ED
P. Martinez, CTAC ED
M. Leroch, CTAC ED
C. Castillo, 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-17-02
DECEMBER 6 – 8, 2016



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

Date: 2/3/17

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

Date: 2-3-17

1.0 EXECUTIVE SUMMARY

U.S. Department of Energy (DOE) Carlsbad Field Office (CBFO) Recertification Audit A-17-02 was performed to evaluate the 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), for contact-handled (CH) Summary Category Groups (SCGs) S3000 homogeneous solids waste, S4000 soils/gravel waste, and 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)*, and the *Remote-Handled TRU Waste Characterization Program Implementation Plan (WCPIP)*. The audit was performed at the Skeen-Whitlock Building in Carlsbad, New Mexico, December 6 – 8, 2016.

TRU waste characterization activities at the SRS have been suspended and no characterization field activities have occurred since the previous recertification audit (A-16-02, conducted December 3 - 4, 2015). The results of this audit have confirmed that CCP operations at the SRS continue to be in a state of suspension. Activities performed at SRS after the previous recertification audit involved revisions to documents relative to radiological characteristics of waste.

Due to the limited scope of this audit and inactivity at the SRS since Audit A-16-02, 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) programs evaluated were adequately established for compliance with applicable upper-tier requirements, satisfactorily implemented, and effective. Also, CBFO has not provided the required Basis of Knowledge Document specifying when waste with oxidizing chemicals is acceptable; therefore, it was not available for evaluation during the audit.

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 Project Level documentation. This concern resulted in a recommendation (see section 6.4).

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 homogeneous solids waste, S4000 soils/gravel waste, and S5000 debris waste, and RH SCG S5000 debris waste. No transportation activities were

evaluated during the audit. The following elements, as applicable to the activities performed, were evaluated:

General Activities

- 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
- *CBFO Quality Assurance Program Document*, DOE/CBFO-94-1012
- *Remote-Handled TRU Waste Characterization Program Implementation Plan*, DOE/WIPP-02-3214
- *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant*, DOE/WIPP-02-3122

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

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

2.2 Purpose

Audit A-17-02 was conducted to assess the SRS/CCP's sustained compliance with requirements applicable to the waste characterization and certification activities for CH SCGs S3000 homogeneous 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 Quality Assurance Representative |
| Priscilla Yanez | Audit Team Leader, CBFO Technical Assistance Contractor (CTAC) |
| Kathy Hood | Auditor, CTAC |
| Ricardo Chavez | Auditor-in-Training, CTAC |
| Richard Blauvelt | Technical Specialist, CTAC |
| Jim Oliver | Technical Specialist, CTAC |
| Randy Fitzgerald | Technical Specialist, CTAC |
| Jim Vernon | Technical Specialist, CTAC |

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 December 6, 2016. 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 December 8, 2016.

5.0 SUMMARY OF AUDIT RESULTS

5.1 Program Adequacy and Implementation

The audit team concluded that the applicable SRS/CCP TRU waste characterization and certification programs for CH SCGs S3000 homogeneous 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 adequacy, 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.

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

5.2 General Activities

5.2.1 Results of Previous Audits

The results of the previous CBFO recertification audit (A-16-02) of SRS/CCP were examined. The audit team verified that no waste characterization field activities have been performed by SRS/CCP since the previous audit. Therefore, the adequacy, implementation, and effectiveness of all waste characterization field activities at the SRS remain indeterminate.

5.2.2 Changes in Programs or Operations

No waste characterization field activities have been performed by SRS/CCP since the previous audit; therefore, there have been no changes in programs or operations.

As reported in the previous audit report (A-16-02), 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

CCP has recently implemented the enhanced Acceptable Knowledge process, which has not previously been audited for SRS/CCP. So far, an Acceptable Knowledge Assessment (AKA) has been completed for SRS waste streams SR-221H-PuOx, SR-W027-HBL-BOX, and SR-MD-PAD1, and a Chemical Compatibility Evaluation Memorandum (CCEM) is pending review and approval by the CBFO.

5.2.4 Changes in Key Personnel

No waste characterization field activities have been performed by SRS/CCP since the previous audit; therefore, there have been no changes in key personnel.

5.2.5 Generation Site Technical Review

A Generation Site Technical Review (GSTR) has not been performed at the SRS prior to this audit, per DOE/WIPP-16-3564, *Generator Site Technical Review Procedure*.

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, *CCP/SRS Interface Document*, Rev. 36. 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 scope of the audit included the evaluation of QA elements for personnel qualification and training, control of nonconformances, and records for compliance with requirements applicable to the WIPP HWFP Waste Analysis Plan (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 implementing procedure CCP-QP-002, Rev. 41, *CCP Training and Qualification Plan*, 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

Personnel qualification and training records for the applicable CH and RH waste Acceptable Knowledge Experts (AKEs) and Site Project Managers (SPMs) were reviewed. The results of the review indicate that the referenced personnel are adequately trained to accomplish their respective tasks.

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

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. The results of the review indicate that the referenced procedure adequately addresses upper-tier requirements.

The audit team interviewed the CCP Nonconforming Report (NCR) Coordinator and reviewed the NCR project level and data generation logs as well as the following three NCRs generated since the previous audit:

NCR-SRS-0303-16, Rev. 0 (in process)
NCR-SRS-0304-16, Rev. 0
NCR-RHSRS-0111-16, Rev. 0

The team concluded that deficiencies are being appropriately documented and tracked through resolution, as required. There were no NCRs generated that required reporting to the Permittee within seven days, as prescribed by the Permit. All the NCRs examined were verified to have been entered, managed, and tracked in the CCP Integrated Data Center (IDC)/Nonconformance Report Log. The audit team confirmed that NCRs are tracked through the required reconciliation reporting mechanism.

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, effectively implemented, and satisfactory in achieving the desired results. No concerns were identified.

5.3.3 QA Records

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

- CCP-PO-001, Rev. 22, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- CCP-PO-002, Rev. 29, *CCP Transuranic Waste Certification Plan*
- CCP-QP-008, Rev. 26, *CCP Records Management*
- CCP-QP-028, Rev. 16, *CCP Records Filing, Inventorying, Scheduling, and Dispositioning*

Details for control of QA records were verified by review of the Records Inventory and Disposition Schedule (RIDS) dated July 15, 2016, for *NWP/CCP RH for All Sites* and the RIDS dated July 29, 2016, for *NWP/CCP CH for All Sites*.

The procedures reviewed and objective evidence assembled provided evidence that the applicable requirements for records are adequately established for compliance with upper-tier requirements, effectively implemented, and satisfactory 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-001, Rev. 21, *CCP Project Level Data Validation and Verification*

- *CCP-TP-002, Rev. 26, CCP Reconciliation of DQOs and Reporting Characterization Data*
- *CCP-TP-005, Rev. 28, CCP Acceptable Knowledge Documentation*
- *CCP-TP-200, Rev. 0, SPM 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 audit team evaluated the AK process for characterizing CH TRU mixed SCGs S3000 solids and S5000 debris wastes and RH TRU mixed SCG S5000 debris waste. SRS is also certified for characterizing CH TRU SCG S4000 soils/gravel, but no activity has occurred in that SCG for years. The audit team therefore did not review AK records pertaining to SCG S4000 soils/gravel. AK audit staff specifically addressed the WAP requirements listed on the C6-2 checklist along with portions of the C6-1 and C6-3 checklists. Objective evidence was reviewed and compiled to demonstrate compliance with each of the applicable requirements on these checklists. The team also reviewed the AK record with respect to relevant requirements of the WAC, and for the RH stream specifically, requirements of the WCIPL, Rev 3. Particular attention was given to the status of enhanced AK products as identified in the WAC, Rev. 8, Appendix H.

The AK auditors reviewed the latest revision to the AK Summary Reports (AKSRs) for three waste streams representing the three respective SCGs noted above. The AKSRs and respective waste stream designations are as follows:

- **CCP-AK-SRS-13, Rev. 5, for CH debris waste stream SR-SDD-HET-A and CH solids waste stream SR-SD-HOM-A. These waste streams were created as a result of the deactivation and decommissioning of the 211-F tank system in support of F Canyon activities.**
- **CCP-AK-SRS-620, Rev. 0, was reviewed for RH debris waste stream SR-RH-MNDPAD1.01. This waste stream is a small population of a much larger CH waste stream resulting from work with radioisotopic thermoelectric generators. The waste was sent to SRS for recovery of its Pu-238 content in the time period 1970-72.**

In addition to the AKSRs, waste stream profile forms (WSPFs) or draft WSPFs and attachments were examined if available. Numerous AK Source Documents were reviewed to establish support for the waste stream descriptions and parameters noted in the AKSRs, particularly with respect to the assignment of hazardous waste numbers (HWNs) and the historical management of the containers in the waste streams. The AK auditors also reviewed information in the AKSRs and AK Source Documents that

addressed the WAP TRU waste programmatic requirements, the TRU waste stream specific requirements, and examples of additional AK compiled as required.

The audit team reviewed the respective documentation generated through implementation of CCP-TP-005: AK Documentation Checklists, attachment 1; the AK Information Lists, attachment 4; the AK Hazardous Constituents Lists, attachment 5; the respective AK Waste Form, Waste Material Parameters, Prohibited Items and Packaging, attachment 6, along with the justification memoranda for waste material parameter weight estimates; the Radionuclides List, attachment 7, and AK/NDA memoranda for the CH waste streams; and the Waste Containers Lists, attachment 8, along with applicable add-container memoranda that document the examination of waste container contents before the drum is added to the target waste stream. Examples of the resolution of AK discrepancies in the AK record and discrepancy resolution at characterization, along with AK Reevaluation forms, were also reviewed and added to the AK objective evidence.

With regard to non-compliant waste containers, the auditors examined NCRs dealing with prohibited items and compiled objective evidence of container inspection performed prior to the start of the CCP characterization process. The WAP-required container traceability exercise was conducted by the AK audit team for a total of six waste containers from the three waste streams. The drums selected provided batch data reports (BDRs) for RTR, VE, NDA, and the DTC processes. Additional traceability documentation was collected through IDC database screenshots, AK tracking spreadsheet data, and waste container input forms. The AK auditors also examined and compiled Waste Stream Characterization Checklists and supporting data, reconciling the results of characterization with the AK record.

For waste stream SR-RH-MNDPAD1.01, the AK auditors also reviewed and compiled objective evidence that demonstrates compliance with the requirements of the WCPIP, as noted above, including CCP-RC-SRS-621, *Remote-Handled Transuranic Radiological Characterization Technical Report*, and CCP-CP-SRS-622, *CCP RH TRU Waste Certification Plan for 40 CFR Part 194 Compliance*. In addition, the auditors examined the Data Quality Objective (DQO) Determination Summary, Table 5 in the AKSR, which lists the RH DQOs to be addressed, along with supporting AK records relating to the defense waste, radiological, and physical waste stream determinations. The CCP TRU Waste Correlation and Surrogate Summary Form, CCP-TP-005 attachment 15, was also reviewed. This form supported the use of waste stream characteristics from CH waste stream SR-MD-PAD1 (CCP-AK-SRS-9). Other AK documents such as a WSPF and attachments, a Characterization Reconciliation Report, an AK Accuracy Report, and documents associated with a shipping lot were not available. The characterization data needed to produce these records is secured in the Waste Data System until the enhanced AK products for this waste stream are completed.

Regarding the status of those Enhanced AK products identified in WAC Rev. 8 Appendix H, there were none available for the three waste streams examined. However,

there were Enhanced AK products available for the CH waste stream component from Mound Pad 1 waste including a Chemical Compatibility Evaluation Memorandum and an Acceptable Knowledge Assessment. These documents are directly applicable to waste stream SR-RH-MNDPAD1.01 since the only difference between the streams is radiological, that is, an in-growth of gamma emitting radionuclides. While the RH waste stream may require separate documentation with respect to the Enhanced AK Products requirements, it seems appropriate to cite these documents in the appropriate checklists with an explanatory comment and compile the documents as objective evidence.

QA requirements of the AK process and AK records were reviewed by the designated QA auditor. Training records for AKEs and SPMs, based upon names provided by the AK technical auditor, were examined and compiled. The AK NCR process was reviewed. In addition, document control was examined with respect to preparation, review, correction, approval, and maintenance. The AK quality assurance objective of precision was evaluated through the review of relevant internal surveillances.

The AK audit team issued one recommendation to add clarifying language to the two AKSRs, CCP-AK-SRS-13 and CCP-AK SRS-620 (see Recommendation 1).

Overall, the AK program was judged to be adequate in addressing the requirements of the WCPIP, the WAC (with the exception of the Basis of Knowledge which was found indeterminate), and the HWFP WAP, as applicable, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.4.2 Project-Level Data Validation and Verification

The audit team verified through interviews and review of procedures and correspondence that SRS/CCP maintains a project level validation and verification (V&V) program that meets the requirements of the WIPP HWFP. In discussions with the CCP SRS SPM, the audit team learned no CH or RH BDR reviews have been completed since Audit A-16-02. CCP did produce one Characterization Information Summary (CIS) for waste stream SR-RH-FBL.01. The procedure evaluated was CCP-TP-002, Rev. 26, *CCP Reconciliation of DQOs and Reporting Characterization Data*. The audit team reviewed the objective evidence provided against the procedure and upper tier documents using the Table C6-1 WAP March 2015 Checklist. During the audit, the audit team identified a suggestion for improvement while reviewing an RTR BDR (see Recommendation 2).

The audit team verified the WSPF for waste stream SR-RH-FBL.01 and the latest CIS resulting in Lot 3 for RH waste. The WSPF and CIS were completed adequately. The procedures that support these AK processes are effective at the project level and are satisfactory in achieving the desired results.

Overall, the project level V&V process procedures are adequate; the results are satisfactory and effectively meet the desired requirements of the program.

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 Nondestructive Assay 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 assessed the adequacy, implementation, and effectiveness of the DTC method used at SRS as part of the CCP to characterize RH SCG S5000 debris waste. This method was previously evaluated by CBFO in December 2015 as part of Audit A-16-02.

The audit team was provided 21 BDRs:

SRSRHDT08001
SRSRHDT11001
SRSRHDT11002
SRSRHDT11003
SRSRHDT12001
SRSRHDT12002
SRSRHDT12003
SRSRHDT13001
SRSRHDT13002
SRSRHDT13003

SRSRHDT13004
SRSRHDT13005
SRSRHDT13006
SRSRHDT13007
SRSRHDT13008
SRSRHDT13009
SRSRHDT13010
SRSRHDT13011
SRSRHDT13012
SRSRHDT14001
SRSRHDT14002

These BDRs were generated between the years 2008 and 2015. No BDRs have been generated since Audit A-16-02, conducted in December 2015.

In total, the 21 BDRs documented the measurement controls, the measurement acquisition, and the subsequent conversion of that dose measurement into curie quantities of the radionuclides of interest.

Dose-to-curie measurements were not performed at SRS since the previous audit, A-16-02, conducted in December 2015.

The audit team reviewed radiological characterization technical reports (including referenced and cited documents and calculation packages) for technical adequacy and compliance with upper-tier documents such as the WCPIP (DOE/WIPP-02-3214, Rev. 3).

The audit team was not able to interview operations personnel or observe equipment and operations at the Savannah River Site.

The audit team reviewed CCP procedure CCP-TP-504, Rev. 18, *CCP Dose-to-Curie Survey Procedure for Remote-Handled Transuranic Waste*. The audit team identified no issues with the technical reports and BDRs documenting the application of the RH waste characterization techniques that included DTC in some cases.

The audit team found that the requirements and procedures are adequate to control the DTC process but the satisfactory and effective implementation of those requirements could not be verified and is thus indeterminate.

5.4.7 WIPP Waste Information System/Waste Data System

The audit team verified through interviews and review of procedures and correspondence that SRS/CCP maintains a WWIS certification program that meets the requirements of the WIPP HWFP. In discussion with the CCP SRS Waste Certification Official, the audit team learned that one RH container was certified in WWIS since Audit A-16-02. The procedure evaluated was CCP-TP-530, Rev. 12, *CCP RH TRU Waste*

Certification and WWIS/WDS Data Entry. The team reviewed the objective evidence provided against the procedure and upper-tier documents using the Table C6-1 WAP March 2015 Checklist.

The team verified container SR506658 was input into the WWIS, the 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 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 conditions adverse to quality (CAQs), as defined below, and document such conditions on a corrective action report (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.

No CARs were initiated during this audit.

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 corrected during the audit (CDA) according to the definition below.

Corrected During the Audit – Refers to correction of an isolated deficiency that does 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.

One Recommendation was provided to management during the audit.

Recommendation 1

During the Project Level review it was recommended that the SPM insert the final disposition of the NCR into the BDR after the final disposition has been completed and the non-conforming condition corrected.

RTR BDR SR4RTR0362 container SDD076239A had NCR-SRS-0377-14 written for a waste material parameter identified by the SPM that was not in the AK Summary Report. The NCR was designated an interim disposition of "Hold" with instructions for Completion of the Interim Disposition for the AKE to evaluate container SDD076239A.

7.0 LIST OF ATTACHMENTS

Attachment 1: Personnel Contacted During Audit

Attachment 2: Summary Table of Audit Results

Attachment 3: List of Audited Documents

Attachment 4: List of Processes and Equipment Reviewed

| PERSONNEL CONTACTED DURING AUDIT A-17-02 | | | | |
|---|-------------------------------------|--------------------------|-------------------------------|---------------------------|
| NAME | ORG/TITLE | PRE-AUDIT MEETING | CONTACTED DURING AUDIT | POST-AUDIT MEETING |
| Armijo, C. | TFE/CCP/Training | | X | |
| Fisher, A.J. | NWP/CCP/Service Support Manager | X | X | |
| Harrison, J. | CCP/AKE | X | X | |
| Harvill, J. | NWP/CCP/Nondestructive Assay Expert | | X | |
| Joo, I. | NWP/CCP/SPM RH Manager | | X | |
| Kantrowitz, R. | NWP/CCP/Site Project Manager | X | X | X |
| Kirkes, C. | NWP/CCP/WCO | | X | |
| Knox, J. | NWP/CCP/CH Site Project Manager | X | X | |
| Lee, R. | NWP/CCP/Project Manager | X | X | X |
| Martin, R. | NWP/CCP/WCO/SPM | | | X |
| Navarrete, L. | TFE/CCP/Records | | X | |
| Pace, B. | NWP/CCP Project Support | X | X | X |
| Pearcy, S. | NWP/CCP/Records Manager | X | X | |
| Pyeatt, B. | NWP/QA | | X | |
| Ramirez, M. | NWP/CCP/Manager | | | X |
| Soaferna, C. | NWP/CCP/SPM | | X | X |
| Whiteaker, R. | NWP/CCP/SPM | X | | |

| SUMMARY TABLE OF AUDIT RESULTS | | | | | | | |
|--|------------------------|------|-----|-----|---------------|----------------|----------------------|
| QA / Technical Elements | Concern Classification | | | | QA Evaluation | | Technical Evaluation |
| | CARs | CDAs | Obs | Rec | Adequacy | Implementation | Effectiveness |
| Acceptable Knowledge | | | | | A | S | E |
| Project Level Data V & V | | | | X | A | I | I |
| Real-time Radiography | | | | | A | I | I |
| Visual Examination | | | | | A | I | I |
| Nondestructive Assay | | | | | I | I | I |
| Dose-to-Curie | | | | | A | 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 |
| TOTALS | 0 | 0 | 0 | 1 | A | I | I |

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

| LIST OF AUDITED DOCUMENTS | | | |
|----------------------------------|---------------------|------------------------|---|
| | Document No. | Revision Number | Document Title |
| 1. | CCP-PO-001 | 22 | CCP Transuranic Waste Characterization Quality Assurance Project Plan |
| 2. | CCP-PO-002 | 29 | CCP Transuranic Waste Certification Plan |
| 3. | CCP-PO-004 | 36 | CCP/SRS Interface Document |
| 4. | CCP-QP-002 | 41 | CCP Training and Qualification Plan |
| 5. | CCP-QP-005 | 25 | CCP TRU Nonconforming Item Reporting and Control |
| 6. | CCP-QP-008 | 26 | CCP Records Management |
| 7. | CCP-QP-028 | 16 | CCP Records Filing, Inventorying, Scheduling, and Dispositioning |
| 8. | CCP-TP-001 | 21 | CCP Project Level Data Validation and Verification |
| 9. | CCP-TP-002 | 26 | CCP Reconciliation of DQOs and Reporting Characterization Data |
| 10. | CCP-TP-005 | 28 | CCP Acceptable Knowledge Documentation |
| 11. | CCP-TP-053 | 16 | CCP Standard Real-Time Radiography (RTR) Inspection Procedure |
| 12. | CCP-TP-113 | 20 | CCP Standard Contact-Handled Waste Visual Examination |
| 13. | CCP-TP-200 | 0 | SPM Chemical Compatibility Evaluation Memorandum and Acceptable Knowledge Assessment Review |
| 14. | CCP-TP-504 | 18 | CCP Dose-to-Curie Survey Procedure for Remote-Handled Transuranic Waste |
| 15. | CCP-TP-506 | 5 | CCP Preparation of the Remote-Handled Transuranic Waste Acceptable Knowledge Characterization Reconciliation Report |
| 16. | CCP-TP-530 | 12 | CCP RH TRU Waste Certification and WWIS/WDS Data Entry |
| 17. | 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 Authorized by CBFO |
|---|--|---|------------------------------|
| PREVIOUSLY APPROVED PROCESSES OR EQUIPMENT | | | |
| 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) | *YES |
| 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) | *YES |
| 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) | *YES |
| 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) | *YES |
| 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) | *YES |
| 1DTC1 | Dose-to-Curie Procedure – CCP-TP-504 Description – Radiological Characterization | Debris (S5000) | *YES |
| 16311 | Dose-to-Curie (Sealed Sources) Procedure – CCP-RC-SRS-631 Description – Radiological Characterization | Debris (S5000) | *YES |

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

*CCP currently has no TRU waste characterization equipment at SRS, as discussed in Audit Report A-15-02 and A-16-02 and confirmed in Audit Report A-17-02.