

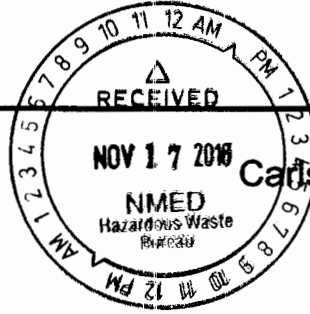
United States Government



**ENTERED**

**Department of Energy**

# memorandum



Carlsbad Field Office  
Carlsbad, New Mexico 88221

**DATE:** NOV 17 2016

**REPLY TO**  
**ATTN OF:** CBFO:OQA:MPN:BA:16-3502:UFC 2300.00

**SUBJECT:** CBFO Audit Report A-17-07, ORNL/CCP Compliance to Waste Acceptance Criteria

**TO:** Mr. William G. McMillan, DOE-OR

The Carlsbad Field Office (CBFO) conducted Audit A-17-07, Oak Ridge National Laboratory/Central Characterization Program (ORNL/CCP) Compliance to Waste Acceptance Criteria, October 17 – 19, 2016. The CBFO audit report is attached.

The audit team concluded that, overall, the ORNL/CCP programs evaluated are adequate relative to compliance to changes in DOE/WIPP-02-3122, Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant, Revision 8, as applicable to waste characterization activities being performed at the ORNL for contact-handled Summary Category Groups (SCGs) S3000 solids, S4000 soils/gravel, and S5000 debris wastes and remote-handled SCG S5000 debris wastes. ORNL/CCP program plans and procedures are satisfactorily implemented and effective in all areas, with two exceptions as documented in the audit report.

As a result of the audit, one observation was identified and one CBFO corrective action report was issued and transmitted under separate cover. Additionally, the audit team was unable to completely evaluate the enhanced Acceptable Knowledge (AK) processes; therefore, the AK process is indeterminate.

If you have any questions or comments concerning the audit report, please contact me at (575) 234-7483.

Martin P. Navarrete  
Senior Quality Assurance Specialist

Attachment



NOV 17 2016

cc: w/attachment  
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CBFO QA File  
CBFO M&RC

\*ED denotes electronic distribution

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

**AUDIT REPORT**

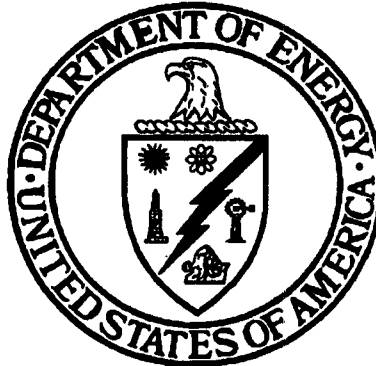
**OF THE**

**ORNL/CCP COMPLIANCE TO WASTE ACCEPTANCE CRITERIA**

**CARLSBAD, NEW MEXICO**

**AUDIT NUMBER A-17-07**

**October 17 – 19, 2016**



Prepared by: *Rick L. Castillo* Date: 11/14/16  
Rick L. Castillo, CTAC  
Audit Team Leader

Approved by: *Michael R. Brown* Date: 11/15/2016  
Michael R. Brown, Director  
CBFO Office of Quality Assurance

## 1.0 EXECUTIVE SUMMARY

Carlsbad Field Office (CBFO) Audit A-17-07 was conducted October 17 – 19, 2016, at the Skeen-Whitlock Building (SWB) in Carlsbad, New Mexico. The audit was conducted to evaluate compliance to changes in DOE/WIPP-02-3122, *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant* (hereafter called the WIPP WAC), Rev. 8, as applicable to transuranic (TRU) waste characterization activities being performed by the Central Characterization Program (CCP) at the Oak Ridge National Laboratory (ORNL).

The audit identified one concern determined to be a condition adverse to quality resulting in the issuance of a Corrective Action Report (CAR) (see section 6.1). No conditions adverse to quality were corrected during the audit (see section 6.2), one Observation was identified (see section 6.3), and no Recommendations were offered for management consideration (see section 6.4). The audit team was unable to completely evaluate the enhanced Acceptable Knowledge (AK) processes; therefore, implementation and effectiveness of enhanced AK could not be verified and was deemed indeterminate. Also, CBFO has not provided the Basis of Knowledge Document specifying when waste with oxidizing chemicals is acceptable; therefore, it was not available for evaluation during the audit.

The condition resulting in a CAR was evaluated and determined not to negatively affect the overall adequacy and implementation of characterization activities with respect to changes in the WIPP WAC, Rev. 8. As a result, the audit team concluded that, with the exception of the concerns identified, the characterization activities at ORNL continue to adequately address applicable upper-tier requirements and remain satisfactorily implemented and effective.

## 2.0 SCOPE

Audit A-17-07 was conducted to evaluate compliance to changes in the WIPP WAC, Rev. 8, as applicable to TRU waste characterization activities being performed by CCP at the ORNL for contact-handled (CH) Summary Category Groups (SCGs) S3000 solids, S4000 soils/gravel, and S5000 debris wastes, and remote-handled (RH) SCG S5000 debris wastes. Areas of focus included the enhanced AK process; the expansion of the WIPP WAC Appendix A, incorporating radioassay of both CH and RH TRU waste and the clarification of minimum detectable activity and lower limit of detection terms; the clarification and strengthening of the requirements and methods for non-destructive assay (NDA) system quality control and documentation was added to adjust for the elimination of the requirement for weekly interfering matrix measurements; and radiography training for operators as specified in the WIPP WAC Appendix F. The Generator Site Technical Review process was previously evaluated during CBFO Surveillance S-16-57.

The following areas were evaluated:

- Project-level Data Validation and Verification (PL/V&V)
- Acceptable Knowledge (AK)
- Real-time Radiography (RTR)
- Nondestructive Assay (NDA)
- WIPP Waste Information System/Waste Data System (WWIS/WDS)
- Personnel Qualification and Training (for NDA/RTR)

### **3.0 AUDIT TEAM**

Martin Navarrete	CBFO Quality Assurance (QA) Management Representative
Rick Castillo	Audit Team Leader
Bob Prentiss	QA Auditor
Katie Chester	QA Auditor
Ricardo Chavez	QA Auditor-in-Training
Dick Blauvelt	Technical Specialist
Rhett Bradford	Technical Specialist
Jim Vernon	Technical Specialist
Jim Oliver	Technical Specialist
Jim Schuetz	Technical Specialist

### **4.0 AUDIT PARTICIPANTS**

ORNL/CCP personnel contacted during the audit are listed in Attachment 1. A pre-audit meeting was held at the SWB in Carlsbad, New Mexico, on October 17, 2016. The audit concluded with a post-audit meeting held at the SWB in Carlsbad, New Mexico, on October 19, 2016.

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

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

The following sections identify each of the elements evaluated during the course of this audit. For each element, the audit team evaluated the associated implementing procedures to verify the adequate flow-down of upper-tier requirements, conducted interviews with responsible personnel, and reviewed randomly selected documents and records to determine compliance to changes in the WIPP WAC, Rev. 8, as applicable to TRU waste characterization activities being performed by CCP at the ORNL for CH SCGs S3000 solids, S4000 soils/gravel, and S5000 debris wastes, and RH SCG S5000 debris wastes.

Three concerns were noted during the audit and are further described in the respective areas outlined in this report.

Attachment 1 identifies the personnel contacted during the audit. Attachment 2 is a summary of the audit results. Attachment 3 is a list of procedures evaluated during the ORNL/CCP WIPP WAC Compliance Audit.

### **5.1.1 Acceptable Knowledge**

The AK audit team evaluated compliance with the enhanced AK process, as documented in Appendix H of the WIPP WAC, Rev. 8. Enhanced AK products identified in Appendix H include an Interface Waste Management Documents List (IWMDL), a Chemical Compatibility Evaluation Memorandum (CCEM), and an Acceptable Knowledge Assessment (AKA). The requirement for AK Briefings, also identified in Appendix H, was reviewed. An additional enhanced AK process, described as Basis of Knowledge in the WIPP WAC Appendix H, addresses the handling of waste streams containing oxidizing material, and is currently being developed. This process was not evaluated during this audit. A description of these enhanced AK products, including application, content, development, and review, is detailed in CCP-TP-005, *CCP Acceptable Knowledge Documentation*, Rev. 28. The AK audit checklist was written according to appropriate sections of that procedure.

The waste streams selected for this review included CH SCG S3000 solids waste stream OR-NFS-CH-HOM-A, CH SCG S4000 soils/gravel waste stream OR-NFS-CH-SOIL, CH SCG S5000 debris waste stream OR-REDC-CH-HET, and RH SCG S5000 debris waste stream OR-REDC-RH-HET. These streams were selected because they either represent the only waste stream in the respective SCG, or they were the primary focus of characterization activities. For each of these four waste streams, a determination was made regarding the status of enhanced AK products. The results are detailed below.

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

The CCP Acceptable Knowledge Expert (AKE), utilizing input from the Site Management Representative (SMR), identifies active and planned site operations that directly affect waste stream management and packaging, as well as lists these relevant site documents on the IWMDL. The IWMDL includes the site name, waste stream number, waste stream description, document number, revision, date, document title, Subject Matter Expert (SME) or Point of Contact (POC), verification date, AK source document tracking number, and SME/POC contact information. For the waste streams examined, an IWMDL has been developed and maintained for the OR-REDC-CH-HET and OR-REDC-RH-HET waste streams. The same IWMDL applies to both streams. There is no IWMDL for waste stream OR-NFS-CH-SOIL, and the audit team has determined that an IWMDL is not required for waste stream OR-NFS-CH-HOM-A since the waste has been completely packaged.

In reviewing this IWMDL, the audit team found demonstrated compliance with the required content, appropriate documentation of specific procedures and processes through AK source documentation, and evidence of required maintenance of the

IWMDL. The audit team also confirmed a quarterly review of the list is performed by the SMR, which includes identifying revisions to existing procedures, or the development of a new procedure, as applicable. The confirmation of a verbal walk down with the site SME/POC was verified on each requisite AK source document summary for all of the processes/procedures. CCP procedure CCP-PO-045, *CCP Waste Management Field Observation*, has been developed, in part, along with other CCP methods, to address the physical walk down requirement. It was noted that the implementation of a physical walk down of the procedures/processes has not yet occurred at ORNL at the time of the audit.

### Chemical Compatibility Evaluation Memorandum (CCEM)

As part of the process for characterizing TRU waste for disposal at WIPP, it is necessary to consider the range of possible chemical combinations that could occur in each waste stream. Potential adverse chemical reactions (e.g., generation of fire, explosion, heat, or fumes) that stem from combining chemicals must be considered to support safe and compliant waste management. The CCEM has been developed and implemented to address this issue. Of the four waste streams considered in this audit, a CCEM has been written for waste stream OR-NFS-CH-SOIL only. This CCEM is in draft form and has been submitted to CBFO for a second review. The AK audit team examined the Document Review Records (DRRs) representing CCP's internal review process, comments from the Payload Engineer Team, and a first review by the CBFO. The document was reviewed for consistency alongside the detailed procedures/processes documented in CCP-TP-005 that include identification of constituents; assigning the presence of each constituent as trace (<1wt. %), minor (1 to 10 wt. %) or dominant (>10 wt. %); and the assigning of appropriate reactivity group numbers to each constituent, as applicable. The reasonableness of assumptions and conclusions were also examined and discussed. Further, selected supporting AK source documents were reviewed and compiled during the audit.

### Acceptable Knowledge Assessment

To ensure AK documentation relating to the management of potentially reactive, corrosive, ignitable, and incompatible TRU waste materials is adequate, current, and accurately described in existing AK summary reports, a onetime AKA is performed for existing AK summary report waste streams (or waste stream subpopulations) with unshipped containers. The AKA provides documentation associated with the historic and current waste management activities relating specifically to TRU waste generation, packaging, treatment, remediation, and characterization, while focusing on the use of absorbents, immobilization products, and neutralization reagents for the waste stream.

Of the four waste streams evaluated during the audit, an AKA has been written for waste stream OR-NFS-CH-SOIL only. The review of this record included a page-by-page examination of the historic and current site procedures and practices, as well as a discussion of their relevance to the current waste stream population. The audit team verified that the AKA contained all of the elements required including, but not limited to, the following: waste stream summary (brief description of the waste stream and generating activities), historic waste management practices, current waste management

practices, absorbent, immobilization, neutralization reagents, new/revised AK source documents, AKA conclusions, assumptions, limitations, and a list of containers bounded by the evaluation. Documentation of the required SPM and SMR review of the AKA was also examined by the audit team.

### AK Briefings

The WIPP WAC, Appendix H.6, requires an AK Briefing when an AK summary report is revised. This requirement identifies the content of the briefing, and also requires the attendance of relevant site SMEs/POCs. Since the previous ORNL/CCP Recertification Audit (A-16-15), CCP-AK-ORNL-500, the AK Summary Report for waste stream OR-REDC-RH-HET, has been revised. The audit team examined the presentation and requisite attendance sheets.

The audit team examined training records for two AKEs and one SPM involved in the development of the enhanced AK products. It was noted that one AKE and one SPM were recently re-issued qualification cards under the new format that has removed badge numbers and email addresses. The re-issued qualification cards are part of an ongoing process to eliminate the need for redacted information and formalize corrections that have made the cards difficult to read in the past.

One concern was identified during the AK review. The audit team found that the enhanced AK documents have not been completed as required by the WIPP WAC, Rev. 8, for all of the waste streams examined during this audit. Furthermore, the WIPP WAC requires a physical walk down of the procedures/processes on individual IWMDLs. This process has not been completed and is just beginning to be implemented at ORNL.

With the exception of the concern identified, the procedure and document reviews provided evidence that the applicable requirements for AK are adequately established for compliance with upper-tier requirements, including the WIPP WAC, Rev. 8, satisfactorily implemented, and effective in achieving the desired results.

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

The audit team conducted interviews with responsible personnel and reviewed implementing procedures 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*; and CCP-PO-002, Rev. 29, *CCP Transuranic Waste Certification Plan*, to determine the implementation of the applicable WIPP WAC, Rev. 8, changes for PLV&V. Results of the review indicate that the procedures adequately address the applicable requirements of the WIPP WAC, Rev. 8.

The audit team evaluated the following batch data reports (BDRs) in support of both CH and RH waste characterization activities completed at the ORNL to verify that PLV&V activities are performed in compliance with applicable procedural requirements.



RTR

OR-RTR6-0754	OR-RTR6-0755	OR-RTR6-0756	OR-RTR6-0761
OR-RTR6-0764	OR-RTR6-0767	OR-RTR6-0771	OR-RTR6-0778
OR-RTR6-0781	OR-RTR6-0782		

NDA

OR-IQ3-0648	OR-IQ3-0654	OR-IQ3-0663
OR-MILCC2-0293	OR-MILCC2-0298	OR-MILCC2-0300

The audit team found the BDRs to meet procedural adequacy in addressing the applicable WIPP WAC, Rev. 8, requirements for PLV&V. The audit team reviewed the waste stream profile forms (WSPFs) for waste streams OR-RF-CH-HET and OR-REDC-CH-HET, and AK Summary Report CCP-AK-ORNL-013 applicable to waste stream OR-CRF-CH-HET. The documents were confirmed to meet the applicable WIPP WAC, Rev. 8, requirements for PLV&V.

One concern was identified during the PLV&V review. The audit team identified that the WIPP WAC, Rev. 8, has excluded the TRUCON Content Number 154 from shipments to WIPP; therefore, TRUCON Content Number 154 should be removed from newly developed/revised WSPFs and AK summary reports. Additionally, the SPM checklist in CCP-TP-001, Rev. 21, Attachment 3, should be revised to remove the question regarding the required matrix drum being performed at least once per operational week. This is no longer a requirement of the WIPP WAC.

With the exception of the concern identified, the procedure and document reviews provided evidence that the applicable requirements for PLV&V are adequately established for compliance with upper-tier requirements, including the WIPP WAC, Rev. 8, satisfactorily implemented, and effective in achieving the desired results.

**5.1.3 Real-Time Radiography**

The audit team evaluated the compliance to changes in the WIPP WAC, Rev. 8, as applicable to RTR being performed at the ORNL for CH SCGs S3000 solids, S4000 soils/gravel, and S5000 debris waste.

The audit team reviewed procedures CCP-QP-002, Rev. 41, *CCP Training and Qualification Plan*; CCP-TP-028, Rev. 10, *CCP Radiographic Training Container Construction*; and CCP-TP-053, Rev. 16, *CCP Standard Real-Time Radiography (RTR) Inspection Procedure*. Results of the review indicate that the procedures adequately address upper-tier requirements.

The audit team examined the following CH RTR BDRs generated by characterizing waste using RTR Unit #6:

OR-RTR6-0759	OR-RTR6-0762	OR-RTR6-0770	OR-RTR6-0782
OR-RTR6-0760	OR-RTR6-0767	OR-RTR6-0777	OR-RTR6-0786

The audit team examined required RTR operator training drum audio/video media for two RTR operators. Records of RTR operator training and qualification, including training drum documentation, eye exams, and waste stream training were examined. The audit team verified that the two RTR operators were appropriately trained and qualified as required by the WAC, Rev. 8. Additionally, the National TRU Program (NTP) memorandum CBFO:TSTD:NC:MR:16-1992, dated July 11, 2016, states "Waste Isolation Pilot Plant Certified Programs (WCP) may continue to perform RTR with currently qualified operators until their semiannual continuing education refresher training or biennial requalification is due (whichever comes first) at such time the revised requirements stated in the WAC Rev. 8, Appendix F must be incorporated in the WCP's system of controls and met using the CBFO approved procedures."

No concerns were identified. The procedure and document reviews provided evidence that the applicable requirements for RTR are adequately established for compliance with upper-tier requirements, including the WIPP WAC, Rev. 8, satisfactorily implemented, and effective in achieving the desired results.

#### **5.1.4 Nondestructive Assay**

The audit team evaluated compliance to changes in the WIPP WAC, Rev. 8, as applicable to NDA systems used at ORNL as part of the CCP to characterize waste from SCGs S3000 (solids), S4000 (soils), and S5000 (debris) on the Mobile Qualitative and Quantitative Drum Counter with Isotopics (IQ3) and the Mobile ISOCS Large Container Counter 2 (MILCC2). CBFO previously evaluated the IQ3 and MILCC2 in April 2016 as part of Audit A-16-15.

The audit team reviewed procedures CCP-TP-046, Rev. 6, *CCP Mobile IQ3 System Calibration Procedure*; CCP-TP-047, Rev. 13, *CCP Mobile IQ3 Gamma Scanner Operation*; CCP-TP-048, Rev. 17, *CCP ORNL NDA System Data Reviewing, Validating, and Reporting Procedure*; CCP-TP-076, Rev. 2, *CCP Operating the Mobile ISOCS Large Container Counter Using NDA 2000*; and CCP-TP-077, Rev. 2, *CCP Calibrating the Mobile ISOCS Large Container Counter Using NDA 2000*, to determine the degree to which they address applicable upper-tier requirements. Results of the review indicate that the procedures adequately address upper-tier requirements.

#### **IQ3**

The audit team interviewed IQ3 personnel, including operators and expert analysts. The audit team also reviewed electronic and paper copies of reports and records. Further, based on a review of the WIPP WAC, Rev. 8, and CCP procedures (CCP-TP-046, *CCP Mobile IQ3 System Calibration Procedure*, Rev. 6, CCP-TP-047, *CCP Mobile IQ3 Gamma Scanner Operation*, Rev. 13, and CCP-TP-048, *CCP ORNL NDA System Data Reviewing, Validating, and Reporting*, Rev. 17) provided prior to the audit, a checklist was prepared and used to evaluate the following:

- Operability and condition of the IQ3 since July 5, 2016;

- System stability as evidenced by the implementation and effectiveness of quality controls documented in BDRs completed since July 5, 2016;
- Applicability of each system's calibration and operational range to the waste assayed since July 5, 2016;
- Completed BDRs to ensure data are reported and reviewed as required; and
- Data storage and retrievability.

IQ3 BDRs reviewed included:

OR-IQ3-0648  
OR-IQ3-0654  
OR-IQ3-0657  
OR-IQ3-0661  
OR-IQ3-0663  
OR-IQ3-0665  
OR-IQ3-0667

The audit team confirmed the BDRs included results for 7 waste drums; 8 waste drums; 5 waste drums; 5 waste drums; 9 waste drums; 3 waste drums; and 8 waste drums, respectively, for a total of 45 waste drums. The audit team also verified ORNL/CCP successfully participated in Performance Demonstration Program (PDP) Cycle 23A that included two matrices (metals and glass).

### MILCC2

The audit team interviewed MILCC2 operators and ORNL/CCP representatives to verify compliance with operating procedures and governing requirements applicable to implementation of the WIPP WAC, Rev. 8, requirements for NDA.

MILCC2 BDRs reviewed included:

OR-MILCC2-0293	OR-MILCC2-0297
OR-MILCC2-0294	OR-MILCC2-0298
OR-MILCC2-0295	OR-MILCC2-0300
OR-MILCC2-0296	OR-MILCC2-0301

The audit team confirmed the BDRs included results for 8 waste drums; 5 waste drums; 5 waste drums; 5 waste drums; 5 waste drums; 2 waste drums; 4 waste drums; and 4 waste drums, respectively, for a total of 38 waste drums. The audit team also verified ORNL/CCP successfully participated in PDP Cycle 23A that included two matrices (metals and glass).

The following documents were provided to the audit team prior to and during the audit:

- CI-MILCC2-NDA-1001, *Calibration Report for the MCS Mobile ISOCS Large Container Counter 2 (MILCC II) at the Transuranic Waste Processing Center in Oak Ridge, TN*, Rev. 0, March 10, 2014
- CI-MILCC2-NDA-1002, *Oak Ridge MILC Counter Total Measurement Uncertainty Report*, Rev. 0, March 12, 2014
- CCP-TP-076, *CCP Operating the Mobile ISOCS Large Container Counter Using NDA 2000*, Rev. 2, July 22, 2016
- CCP-TP-077, *CCP Calibrating the Mobile ISOCS Large Container Counter Using NDA 2000*, Rev. 2, July 22, 2016
- CCP-TP-048, *CCP/ORNL NDA System Data Reviewing, Validating, and Reporting Procedure*, Rev. 17, July 22, 2016;
- SO 14956, *ISOCS/LabSOCS Detector Characterization Report*, Detector Model BE5030, S/N 8879, July 30, 2013
- SO 1519185, *ISOCS/LabSOCS Detector Characterization Report*, Detector Model BE5030, S/N 8903, November 08, 2013

No concerns were identified. The procedure and document reviews provided evidence that the applicable requirements for NDA are adequately established for compliance with upper-tier requirements, including the WIPP WAC, Rev. 8, satisfactorily implemented, and effective in achieving the desired results.

#### **5.1.5 WIPP Waste Information System (WWIS)/Waste Data System (WDS)**

The audit team conducted interviews and reviewed procedures relative to WDS/WWIS data entry and waste container certification to evaluate compliance with the requirements of the WIPP WAC, Rev. 8. The procedures reviewed included CCP-TP-030, Rev. 34, *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*. Results of the review indicate that the procedures adequately address upper-tier requirements and the flow-down of new chemical compatibility evaluation and enhanced AK requirements.

The audit team determined that waste containers that were previously certified prior to the issuance of the WIPP WAC, Rev. 8, continue to be maintained in the WDS/WWIS database records. CCP has written a new procedure, CCP-TP-200, Rev. 0, *SPM Chemical Compatibility Evaluation Memorandum and Acceptable Knowledge Assessment Review*, to describe the method of documenting and tracking the SPM reviews of CCEM and AKA reports. These reports are generated to account for individual characteristics and the original approval date for waste streams. CCEM reports will be generated for all waste streams and will receive SPM reviews. AKA reports are generated for waste streams approved prior to the effective date of the WIPP WAC, Rev. 8. Further, AKA reports are not necessary for new waste stream approvals, as the enhanced AK for new approvals will contain adequate AK documentation for evaluation.

The CCEM and AKA reports are generated in accordance with existing CCP procedures utilized for document reviews, comments, and comment resolutions (CCP-QP-010, *CCP Document Preparation, Approval, and Control*). The new CCP procedure CCP-TP-200 governs the SPM review process, review checklists, and transmittal of approval date information to the WDS/WWIS database.

CCP has also created a new database application, *Open Acceptable Knowledge Evaluation Software (OAKES)*, to capture SPM review details using example checklists found in CCP-TP-200 and store review data that is transmitted to WDS/WWIS. Container data currently in WDS/WWIS will be reviewed on an individual basis by a CCP SPM and Waste Certification Official (WCO) to determine whether the certification remains valid after consideration of the CCEM and AKA reports, or if the information in the CCEM and AKA reports indicates that a container should be removed from WDS/WWIS. Current processes and procedure CCP-QP-005 (utilized for writing NCRs on containers and for removing containers from WDS/WWIS) are adequate, and will be implemented as necessary once waste stream reviews and container evaluations have been completed.

One concern related to CCP-TP-200 and the OAKES database was identified during the audit and necessitated the issuance of CBFO CAR 17-006. The audit team determined that there is an inconsistency between line items in procedure's SPM review checklists and the database display screens. Records in the OAKES database may not have all checklist items completed that show in the procedure's SPM review checklists. Further, the procedure checklists, database tables, and display screens must be reviewed and updated to show the same content to ensure that SPM reviews are properly performed and captured in the database. Procedure and/or software changes must be performed, reviewed, and documented in accordance with the CCP QA program. An investigation of OAKES database records must be performed to identify records that lack documentation of line items from the procedure checklists. Normalization of database records to reflect procedure and/or database changes must be planned and completed. Any data that was transmitted to WDS/WWIS must be evaluated and updated as appropriate to reflect data updates of OAKES database records.

The audit team determined that implementation of CCP-TP-200 and use of the OAKES database provides an adequate process for documentation of SPM reviews of CCEM and AKA evaluations, and for the transmittal of approval data to WDS/WWIS documenting that waste streams have received CCEM and AKA evaluations.

With the exception of the concern identified, the procedure and document reviews provided evidence that the applicable requirements for WWIS/WDS are adequately established for compliance with upper-tier requirements, including the WIPP WAC, Rev. 8, satisfactorily implemented, and effective in achieving the desired results.

## **6.0 CORRECTIVE ACTION REPORTS, DEFICIENCIES CORRECTED DURING THE AUDIT, OBSERVATIONS, AND RECOMMENDATIONS**

### **6.1 Corrective Action Reports**

During the audit, the audit team may identify conditions adverse to quality (CAQs), according to the descriptions below, and document such conditions on CARs.

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

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

One CAQ necessitating the generation of a CAR was identified as a result of this audit, as described below.

#### **CAR 17-006**

During the audit of CBFO Document Control, the following concern in relation to CCP-PO-005, *CCP Conduct of Operations*, and CCP-QP-010, *CCP Document Preparation, Approval, and Control*, was identified:

**Condition:**

The process for documenting the Chemical Compatibility Evaluation Memorandum and Acceptable Knowledge Assessment Reviews is inconsistent with respect to the work steps described in the implementing procedure CCP-TP-200, and as constructed in the Open Acceptable Knowledge Evaluation Software (OAKES) database fields.

**Requirements:**

CCP-PO-005, Rev. 27, *CCP Conduct of Operations*, Section 18.7, states in part: "If, in the opinion of the operator, a procedure cannot be performed as written, the system or component will be placed in a safe condition and CCP management informed so the discrepancy can be corrected."

*(This is the requirement related to stopping implementation of the procedure if the operator determines that it cannot be performed as written, with respect to implementing procedure CCP-TP-200 and the computer fields in the OAKES database.)*

CCP-QP-010, Rev. 25, *CCP Document Preparation, Approval, and Control*, Section 3.3.2, states: "[Technical Reviewer] Reviews and verifies document for adequacy, correctness, and technical content."

CCP-QP-010, Rev. 25, *CCP Document Preparation, Approval, and Control*, Section 4.1.15, states: "Perform the review using the criteria established in Section 3.3."

## **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 (CDA).

Deficiencies that can be classified as CDA are those isolated deficiencies that do not require a root cause determination or actions to preclude recurrence, and those for which correction of the deficiency can be verified prior to the end of the audit. Examples of CDAs include one or two minor changes required to correct a procedure (isolated), one or two forms not signed or not dated (isolated), or one or two individuals that have not completed a reading assignment (isolated).

Upon determination that the CAQ is isolated, the audit team member, in conjunction with the ATL, evaluates/verifies any objective evidence/actions submitted or taken by the audited organization and determines if the condition was corrected in an acceptable manner. Once it has been determined that the CAQ has been corrected, the ATL categorizes the condition as CDA.

No CDAs were identified as a result of Audit A-17-07.

## **6.3 Observations**

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

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

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

The audit team identified the following Observation during this audit.

### **Observation 1**

The WIPP WAC, Rev. 8, has excluded the TRUCON Content Number 154 from

shipments to WIPP; therefore, TRUCON Content Number 154 should be removed from newly developed/revised WSPFs and AK summary reports.

Also, the SPM checklist in CCP-TP-001, Rev. 21, Attachment 3, should be revised to remove the question regarding the required matrix drum being performed at least once per operational week. This is no longer a requirement of the WIPP WAC.

#### **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 identified as a result of Audit A-17-07.

#### **7.0 LIST OF ATTACHMENTS**

Attachment 1: Personnel Contacted During Audit A-17-07

Attachment 2: Summary Table of Audit Results

Attachment 3: ORNL/CCP WIPP WAC Compliance Procedures Evaluated



<b>PERSONNEL CONTACTED DURING AUDIT A-17-07</b>				
<b>Name</b>	<b>Title/Organization</b>	<b>Pre-Audit Meeting</b>	<b>Contacted During the Audit</b>	<b>Post-Audit Meeting</b>
Cheryl Armijo	NWP/CCP TFE Training		X	
Michelle Billet	NWP/CCP TFE Training Coordinator		X	
A.J. Fisher	NWP Support Services Mgr.			X
George Gregory	ORNL/DOE Observer	X		X
Jeff Harrison	NWP/CCP Tech Specs AKE	X	X	
Joe P. Harvill	NWP/CCP NDA Technical Advisor		X	
Rich Kantrowitz	NWP/CCP SPM	X	X	X
Creta Kirkes	NWP/CCP WCO		X	
Chris Luoma	NWP/CCP SPM		X	
Ricardo Maestas	NMED Observer			X
Martin Navarrete	CBFO Senior QA Specialist	X		
Berry Pace	NWP/CCP Programs Support	X	X	X
Sheila Percy	NWP/CCP TFE Records Mgr.	X	X	
Sheri Punchios	NWP QA Support	X		X
Ron Reeves	NWP/CCP Operations Mgr.	X		
Beverly Schrock	NWP/CCP SPM	X	X	X
Farok Sharif	NWP NTP Project Mgr.			X
Veronica Waldram-Ballew	NWP QA Programs/Project Integration Mgr.	X		X
Daniel Wade	NWP/CCP SPM		X	

**Summary Table of Audit Results**

<b>PROGRAM ELEMENTS</b>	<b>CAR</b>	<b>CDA</b>	<b>OBSERVATION</b>	<b>RECOMMENDATION</b>	<b>ADEQUACY</b>	<b>IMPLEMENTATION</b>	<b>EFFECTIVENESS</b>
Acceptable Knowledge					Adequate	Indeterminate	Indeterminate
Project Level Data V & V			1		Adequate	Satisfactory	Effective
Real-Time Radiography					Adequate	Satisfactory	Effective
Nondestructive Assay					Adequate	Satisfactory	Effective
WWIS / WDS	1				Adequate	Satisfactory	Effective
<b>SUMMARY</b>	<b>1</b>		<b>1</b>	<b>0</b>	<b>Adequate</b>	<b>Satisfactory</b>	<b>Effective</b>

NOTE: Portions of the enhanced AK process were not complete at the time of the audit; therefore, implementation and effectiveness could not be verified.

<b>ORNL/CCP WIPP WAC Compliance Procedures Evaluated</b>			
<b>No.</b>	<b>Procedure No.</b>	<b>Rev.</b>	<b>Procedure Description</b>
1.	CCP-PO-002	29	CCP Transuranic Waste Certification Plan
2.	CCP-PO-045	1	CCP Waste Management Field Observation
3.	CCP-QP-002	41	CCP Training and Qualification Plan
4.	CCP-TP-001	21	CCP Project Level Data Validation and Verification
5.	CCP-TP-002	26	CCP Reconciliation of DQOs and Reporting Characterization Data
6.	CCP-TP-005	28	CCP Acceptable Knowledge Documentation
7.	CCP-TP-028	10	CCP Radiographic Training Container Construction
8.	CCP-TP-030	34	CCP CH TRU Waste Certification and WWIS/WDS Data Entry
9.	CCP-TP-046	6	CCP Mobile IQ3 System Calibration Procedure
10.	CCP-TP-047	13	CCP Mobile IQ3 Gamma Scanner Operation
11.	CCP-TP-048	17	CCP ORNL NDA System Data Reviewing, Validating, and Reporting Procedure
12.	CCP-TP-053	16	CCP Standard Real-Time Radiography (RTR) Inspection Procedure
13.	CCP-TP-076	2	CCP Operating the Mobile ISOCS Large Container Counter Using NDA 2000
14.	CCP-TP-077	2	CCP Calibrating the Mobile ISOCS Large Container Counter Using NDA 2000
15.	CCP-TP-200	0	SPM Chemical Compatibility Evaluation Memorandum and Acceptable Knowledge Assessment Review
16.	CCP-TP-530	12	CCP RH TRU Waste Certification and WWIS/WDS Data Entry