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United States Government

Department of Energy

memorandum

Carlsbad Field Office
Carlsbad, New Mexico 88221

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OCT 2012
NMED Hazardous Waste Bureau

DATE: OCT 26 2012

REPLY TO ATTN OF: CBFO:NTP:JRS:PG:12-0657:UFC 5900.00

SUBJECT: ANL-CCP Expansion from Recertification Audit A-11-20 to Include the Tier 1 Approval of Debris from the RERTR Program and Second Batch of FEW Stream to the Existing AERHDM

TO: Dale Dietzel, DOE-CH
M. Farok Sharif, Project Manager, Nuclear Waste Partnership, LLC

The Carlsbad Field Office (CBFO) is expanding the Argonne National Laboratory - Central Characterization Project (hereinafter referred to as ANL-CCP) Remote-Handled (RH) Recertification Memorandum (CBFO:NTP:JRS:GL:12-0516:UFC 5900.00) dated June 20, 2012. This expansion reflects the CBFO Tier 1 request dated August 1, 2012 and the U.S Environmental Protection Agency (EPA) Inspection Report, DOCKET NO: A-98-49, II-A4-167 which was approved by EPA on October 4, 2012, as a Tier 1 change to evaluate the debris from the Reduced Enrichment Research and Test Reactor (RERTR) program, and the second batch of Fuel Examination Waste (FEW) packaged in 30-gallon containers requiring disposal.

The CBFO completed the Recertification Audit A-11-20 of the CCP Transuranic (TRU) waste characterization activities deployed at the ANL Site conducted on August 2-4, 2011. The characterization, certification, and transportation activities were determined to be adequate, satisfactorily implemented, and effective.

The audit team determined that the ANL-CCP TRU programs were in compliance with the *Waste Analysis Plan* (WAP) of the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (HWFP), the Quality Assurance Program Document (QAPD), the *TRU Waste Acceptance Criteria for the Waste Isolation Pilot Plant* (WIPP WAC), and the *RH Transuranic Authorized Methods for Payload Control* (TRAMPAC), *RH TRU 72B Safety Analysis Report* (SAR), and *Remote-Handled TRU Waste Characterization Program Implementation Plan* (WCPIP). The audit team determined that the procedures/documents were effectively implemented.

Based on the results of the CBFO Audits/Surveillances (See Attachment 1), and conditions and limitations provided by the New Mexico Environment Department (NMED) and the EPA, the CBFO is authorizing ANL to include the EPA approvals listed in the first paragraph of this memo, into their certified program and continue authority at the ANL-CCP for the characterization, certification, and transportation activities for RH debris (S5000) as identified in Table 1, Page 4 of this memorandum.

TRU waste characterization, certification, or transportation activities using significantly revised or new processes, procedures, or systems must be evaluated by the CBFO prior to their implementation. Included in this memorandum are the following attachments:

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- *Attachment 1* describes the CCP certification program status;
- *Attachment 2* contains the list of processes/equipment from Table 1 of this memorandum certified at the site;
- *Attachment 3* contains the list of CCP certified procedures/documents; and,
- *Attachment 4* describes specific CCP waste characterization process elements that must be reported to EPA. These process elements are identified as Tier 1 changes and Tier 2 changes. The ANL-CCP shall not ship for disposal at WIPP any wastes affected by a Tier 1 process element change without prior CBFO approval, and CCP shall report Tier 2 changes to CBFO on a quarterly basis.

If you have any questions, please contact Mr. J.R. Stroble, Director of the Office of the National TRU Program, at (575) 234-7313.

Jose R. Franco

Jose R. Franco, Manager
Carlsbad Field Office

Attachment(s)

cc: w/attachments

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W. Weyerman, LANL-CO	ED
S. Pearcy, SM Stoller	ED
WIPP Operating Record	
CBFO M&RC	

*ED denotes electronic distribution

Table 1 ANL-CCP RH Certified Waste Characterization Processes		
Characterization Process	**RH S5000 Debris**	
	Newly-Generated	**Retrievably-Stored Waste Stream AERHDM**
Acceptable Knowledge	N/A	APPROVED
Load Management	N/A	NOT APPROVED
Data Validation & Verification (V&V)	N/A	APPROVED
Visual Examination	N/A	APPROVED
Solids Sampling & Analysis	N/A	N/A
Headspace Gas Sampling & Analysis (Summa®)[1]	N/A	APPROVED
Nondestructive assay (NDA)	N/A	N/A
Real-time Radiography (RTR)	N/A	N/A
Dose-to-Curie (DTC)	N/A	APPROVED
Dimensional Measurements	N/A	APPROVED
Gravimetric Measurements	N/A	NOT APPROVED
WIPP Waste Information System (WWIS)	N/A	APPROVED

[1] Analysis is performed by the CCP INL Laboratories.

CENTRAL CHARACTERIZATION PROJECT
CERTIFICATION PROGRAM STATUS
AT Argonne National Laboratory

The CBFO Director of the Office of the National TRU Program and the CBFO Director of the Office of Quality Assurance Program have evaluated the documentation supporting the compliance of the Central Characterization Project (CCP) TRU waste program deployed at the Argonne National Laboratory (ANL) Site.

STATUS

- All program elements remain complete.
- The following site documents are *current* and demonstrate how the CCP complies with the CBFO requirements for A-11-20:
  - **CCP-PO-001, Revision 20,** *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
    CBFO:NTP:JRS:GS:11-0351:UFC 5900.00 dated June 15, 2011
  - **CCP-PO-002, Revision 26,** *CCP Transuranic Waste Certification Plan*
    QAP – Section 4.0 of CCP-PO-002
    CBFO:NTP:JRS:ANC:11-0396:UFC 5900.00 dated July 14, 2011

    CCP-PO-505, Revision 1, *CCP Remote-Handled Transuranic Waste Authorized Methods for Payload Control (CCP RH-TRAMPAC)*
    CBFO:NTP:CF:MP:11-2030:UFC 5900.00 dated December 1, 2011
- Certified Systems – see Attachment 2 List of Processes/Equipment from Table 1 of this Memorandum that is certified and used by the CCP at the ANL.
- Standard Operating Procedures – see Attachment 3 for the complete list of certified procedures/documents used by the CCP at the ANL.
- Tiering of the RH TRU Waste Characterization Processes – see Attachment 4 for the implementation by CCP at ANL (based on EPA Baseline Inspections).

- CCP participated in the following performance demonstration program (PDP):
  - **HSG PDP (CCP-INL)** – SUMMA® sampling is performed by CCP, analysis is performed by the Idaho National Laboratory, which is approved under a separate certification.

- CBFO conducted CH Recertification Audit A-11-20 of the ANL-CCP on August 2-4, 2011.
  - The Interim Audit Report was issued on September 1, 2011.
  - The Final Audit Report was issued to NMED on October 26, 2011.
  - NMED approval on Audit A-11-20 was issued on December 9, 2011.
  - EPA concurred on January 19, 2012.

- CBFO conducted Audit A-12-09 of the CCP Quality Assurance Program (QAP) on March 6-8, 2012 and issued the Audit Report on April 4, 2012.

- CBFO conducted Audit A-11-24 of the CCP Transportation Activities for all sites on September 20-22, 2011 and issued the Audit Report on October 4, 2011.

- CBFO requested a Tier 1 change to add 8 55-gallon K-Wing Fuel Examination Waste Containers to the Remote-Handled (RH) Debris Waste Stream AERHDM at the ANL on July 13, 2011.
  - EPA approval (DOCKET NO: A-98-49, II-A4-158) issued February 13, 2012.
  - EPA concurred on February 27, 2012.

- CBFO requested a Tier 1 change to evaluate the radiological characterization approach of the Solidified Liquid Waste from the K-Wing, Building 205, 16 55-Gallon Containers requiring disposal on January 3, 2012.
  - EPA approval (DOCKET NO: A-98-49, II-A4-162) issued June 14, 2012.
  - EPA concurred on June 18, 2012.

- CBFO requested a Tier 1 change to evaluate the debris from the Reduced Enrichment Research and Test Reactor (RERTR) program; and the second batch of Fuel Examination Waste (FEW) packaged in 30-gallon containers requiring disposal on August 1, 2012.
  - EPA approval (DOCKET A-98-49; II-A4-140) issued on October 4, 2012.

- The EPA concurred on the draft expansion memo to include the Tier 1 approval adding debris waste from the Reduced Enrichment Research and Test Reactor (RERTR) program; and the second batch of FEW packaged in 30-gallon containers on October 18, 2012.

RECOMMENDATION

The recommendation to the CBFO Manager is for CCP at ANL to include the debris from the Reduced Enrichment Research and Test Reactor (RERTR) program; and the second batch of FEW packaged in 30-gallon containers into their certified program and to continue the authority for TRU waste characterization, certification, and transportation activities of RH debris (S5000) waste. Attachments 2 and 3 list the systems and procedures that constitute the bounds of this authority. Attachment 4 is the RH Tiering of TRU Waste Characterization Processes Implemented by the CCP at ANL.

CONCURRENCE

R. Unger

Randy Unger, Director
Office of Quality Assurance

23 Oct 12
Date

J.R. Stroble

J. R. Stroble, Director
Office of the National TRU Program

10-23-12
Date

CENTRAL CHARACTERIZATION PROJECT
List of Processes/Equipment Certified from Table 1 of Memo at Argonne National Laboratory

WIPP WWIS #	Site Equipment # or Title	Description	Components	Software	NDA Calibrated Range, Operating Range and TMU
Dose-to-Curie					
8DTC1	Dose-to-Curie	Radiological characterization process using dose-to-curie (DTC) and modeling-derived scaling factors for assigning radionuclide values to RH waste stream AERHDM for which the scaling factors are applicable, as described in CCP-AK-ANLE-501. Procedure CCP-TP-504	As identified in CCP-TP-504	As identified in CCP-TP-504	N/A
Dimensional Measurements					
8RHGM1	Dimensional Measurements	Radiological characterization process using Dimensional Measurements of fuel pin specimen mass to determine each container's radionuclide content. Procedure CCP-TP-513	As identified in CCP-TP-513	As identified in CCP-TP-513	N/A
Visual Examination					
8RHVE1	Audio/video review	The VE of audio/video media process used for retrievably-stored RH debris waste drums. Procedure CCP-TP-500 & CCP-TP-163	N/A	N/A	N/A
8RHVE2	Visual Examination Activities	Visual Examination Procedure CCP-TP-500	N/A	N/A	N/A
Headspace Gas					
N/A	HSG	SUMMA Sampling process on selected waste containers from waste stream lots.	As identified in CCP-TP-093	As identified in CCP-TP-093	N/A

CENTRAL CHARACTERIZATION PROJECT
LIST OF CERTIFIED PROCEDURES
AT Argonne National Laboratory

#	Procedure No.	Procedure Title
1.	CCP-PO-001	CCP Transuranic Waste Characterization Quality Assurance Project Plan
2.	CCP-PO-002	CCP Transuranic Waste Certification Plan
3.	CCP-PO-005	CCP Conduct of Operations
4.	CCP-PO-006	CCP Conduct of Operations Matrix
5.	CCP-PO-008	CCP Quality Assurance Interface with the WTS Quality Assurance Program
6.	CCP-PO-500	CCP/ANL RH-TRU Waste Interface Document
7.	CCP-PO-505	CCP Remote-Handled Transuranic Waste Authorized Methods for Payload Control (CCP RH-TRAMPAC)
8.	CCP-QP-001	CCP Graded Approach
9.	CCP-QP-002	CCP Training and Qualification Plan
10.	CCP-QP-004	CCP Corrective Action Management
11.	CCP-QP-005	CCP TRU Nonconforming Item Reporting and Control
12.	CCP-QP-006	CCP Corrective Action Reporting and Control
13.	CCP-QP-008	CCP Records Management
14.	CCP-QP-010	CCP Document Preparation, Approval and Control
15.	CCP-QP-011	CCP Notebooks and Logbooks
16.	CCP-QP-014	CCP Data Analysis and Trending
17.	CCP-QP-015	CCP Procurement
18.	CCP-QP-016	CCP Control of Measuring, Testing, and Data Collection Equipment
19.	CCP-QP-017	CCP Identification and Control of Items
20.	CCP-QP-018	CCP Management Assessment
21.	CCP-QP-019	CCP Quality Assurance Reporting to Management
22.	CCP-QP-021	CCP Surveillance Program
23.	CCP-QP-022	CCP Software Quality Assurance Plan
24.	CCP-QP-023	CCP Handling, Storage, and Shipping
25.	CCP-QP-026	CCP Inspection Control
26.	CCP-QP-027	CCP Test Control
27.	CCP-QP-028	CCP Records Filing, Inventorying, Scheduling, and Dispositioning
28.	CCP-QP-030	CCP Written Practice for the Qualification of CCP Helium Leak Detection Personnel
29.	CCP-TP-001	CCP Project Level Data Validation and Verification
30.	CCP-TP-002	CCP Reconciliation of DQOs and Reporting Characterization Data
31.	CCP-TP-003	CCP Data Analysis for S3000, S4000, and S5000 Characterization
32.	CCP-TP-005	CCP Acceptable Knowledge Documentation
33.	CCP-TP-030	CCP CH TRU Waste Certification and WWIS/WDS Data Entry
34.	CCP-TP-033	CCP Shipping of CH TRU Waste
35.	CCP-TP-055	CCP Varian Porta-Text Leak Detector Operations
36.	CCP-TP-082	CCP Waste Container Filter Vent
37.	CCP-TP-083	CCP Gas Generation Testing
38.	CCP-TP-086	CCP CH Packaging Payload Assembly
39.	CCP-TP-093	CCP Sampling of TRU Waste Containers
40.	CCP-TP-106	CCP Headspace Gas Sampling Batch Data Report Preparation
41.	CCP-TP-138	CCP Execution of Long-Term Objective for the Unified Flammable Gas Test Procedure
42.	CCP-TP-162	CCP Random Selection of Containers or Solids and Headspace Gas Sampling and Analysis
43.	CCP-TP-163	CCP Standard Visual Examination of Records

CENTRAL CHARACTERIZATION PROJECT
LIST OF CERTIFIED PROCEDURES
AT Argonne National Laboratory

#	Procedure No.	Procedure Title
44.	CCP-TP-500	CCP Remote-Handled Waste Visual Examination
45.	CCP-TP-504	CCP Dose-to-Curie Survey Procedure for Remote-Handled Transuranic Waste
46.	CCP-TP-505	CCP Removable Lid Canister Loading
47.	CCP-TP-506	CCP Preparation of the Remote-Handled Transuranic Waste Acceptable Knowledge Characterization Reconciliation Report
48.	CCP-TP-507	CCP Shipping of Remote-Handled Transuranic Waste
49.	CCP-TP-509	CCP Remote-Handled Transuranic Container Tracking
50.	CCP-TP-512	CCP Remote-Handled Waste Sampling
51.	CCP-TP-513	CCP Procedure for Dimensional or Gravimetric Measurements for Radiological Characterization of Remote-Handled Transuranic Waste
52.	CCP-TP-530	CCP RH TRU Waste Certification and WWIS Data Entry

Deactivated Procedures			
#	**Deactivated Procedure No.**	**Deactivated Procedure Tile**	**Deactivation Date**
1.	CCP-TP-043	CCP Chain of Custody for SUMMA® Canister Sampling Using the INL Analytical Lab – Incorporated in CCP-TP-093	9/11/07

Table 1. Tiering of RH TRU Waste Characterization Processes Implemented by ANL-CCP (Based on September 12–14, 2006, Baseline Inspection and Subsequent T1 Evaluations, Updated September 2012)

RH Waste Characterization Process Elements	ANL-CCP RH Waste Characterization Process - T1 Changes	ANL-CCP RH Waste Characterization Process - T2 Changes*
Acceptable Knowledge (AK)	Any new waste streams not approved under this baseline Modification of the approved Waste Stream AERHDM to include additional containers beyond the approximately 45 included in CCP-AK-ANLE-500, Revision 1, if new or different radionuclide scaling factors are required Substantive modification(s)*** to CCP-AK-ANLE-500 or CCP-AK-ANLE-502 that have the potential to affect the characterization process Implementation of load management for any remote-handled (RH) waste stream **Characterization of any Alpha Gamma Hot Cell Facility (AGHCF) or K-Wing fuel examination wastes (FEWs) other than the AGHCF and K-Wing fuel pin FEW, AGHCF Reduced Enrichment Research and Test Reactor FEW and AGHCF second batch of fuel pin FEW—specifically, characterization of AGHCF crucibles and melts FEW—is a T1 change**	Notification to EPA that the final DTC determination is complete for RH containers in the approved waste stream Notification to EPA when updates are made to AK documentation as a result of Waste Characterization Program Implementation Plan revisions** Notification that updates have been completed to the following documents: • All future revisions of CCP-AK-ANLE-500, CCP-AK-ANLE-501, and CCP-AK-ANLE-502, including freeze file changes • Listing of the references that document the assembly of fuel pin data and review process Notification to EPA that the data package for this debris waste stream is completed, including any modifications or change notifications to the waste stream profile form, including the characterization reconciliation report, characterization information summary and acceptable knowledge summary report (AKSR) Notification to EPA when AK accuracy reports are completed, prepared annually at a minimum Notification to EPA when Attachment 4 of CCP-TP-005 is generated to reflect the updated AKSR Source Document Reference List Notification to EPA when Attachment 8 of CCP-TP-005 has been formally updated or when Add Container Memoranda have been added to Source Document C2029 Notification to EPA when ANL-CCP decides on the disposition path for vitrified HLW from Savannah River Site (SRS) and vitrified sludge from West Valley **Notification to EPA when the source document containing compiled information supporting Source Document U344 is available** Notification to EPA of the intention to add containers to Waste Stream AERHDM, including the approximate number of containers and volume(s) of waste, the timeframe for waste generation, characterization, and disposal and submission of an updated AKSR documenting that the pedigree of the additional containers is the same as those covered by the baseline and/or subsequent T1 approvals†

Table 1. Tiering of RH TRU Waste Characterization Processes Implemented by ANL-CCP (Based on September 12–14, 2006, Baseline Inspection and Subsequent T1 Evaluations, Updated September 2012)

RH Waste Characterization Process Elements	ANL-CCP RH Waste Characterization Process - T1 Changes	ANL-CCP RH Waste Characterization Process - T2 Changes*
		Submission of a list of fully characterized containers from a population of additional containers proposed as a T2 change, above†
Radiological Characterization, including Dose-To-Curie (DTC)	Use of any alternate radiological characterization procedure other than DTC with sampling-derived scaling factors as documented in CCP-TP-504 and CCP-AK-ANLE-501, Revision 0, respectively Substantive modification(s)*** to CCP-AK-ANLE-501 or CCP-TP-504 that have the potential to affect the characterization process Any new waste stream not approved under this baseline or addition of containers to Waste Stream AERHDM that require changing the established radionuclide scaling factors Application of new scaling factors for isotopic determination other than those documented in CCP-AK-ANLE-501 Implementation of gravimetric analysis for waste other than debris will require EPA approval as a T1 change	Notification to EPA that revisions of CCP-AK-ANLE-501 or CCP-TP-504 that require CBFO approval** are complete Submission of an updated CCP-AK-ANLE-501 documenting that the radiological characterization process(s) used for the additional containers is the same as those covered by the baseline and/or subsequent T1 approvals† Submission of DTC batch data reports (BDRs) or calculation packages for containers selected by EPA from a list of fully characterized containers provided by ANL-CCP†
Visual Examination (VE)	VE by reviewing existing audio/visual recordings for any waste summary category group not covered by this approval VE by any new process for S5000 debris wastes	Submission of VE BDRs for containers selected by EPA from a list of fully characterized containers provided by ANL-CCP† Notification to EPA that revisions of any VE procedure that require CBFO approval are complete Addition of new S5000 debris waste streams
Real Time Radiography (RTR)	Any use of RTR requires EPA approval	Submission of RTR BDRs for containers selected by EPA from a list of fully characterized containers provided by ANL-CCP†
WIPP Waste Data System (WDS)	None	Changes made to WDS procedure(s) that require CBFO approval

New T1s, T2s and significant modifications to existing T1s or T2s are in bold text; T1s or T2s that were only revised for style are not shown in bold.

* ANL-CCP will report all unmarked T2 changes to EPA quarterly.

** Excluding changes that are editorial in nature or are required to address administrative concerns. New references that are included as part of the document revision may be requested by EPA.

*** "Substantive modification" refers to a change with the potential to affect ANL's RH waste characterization process, e.g., the use of an inherently different type of measurement instrument or the use of the high-range probe as described for CCP-TP-504 for radiological characterization.

† ANL-CCP will report this T2 change immediately.