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Department of Energy

memorandum

Carlsbad Field Office
Carlsbad, New Mexico 88221

DATE: OCT 15 2004

REPLY TO ATTN OF: CBFO:OCT:KWW:GS04-2036:UFC:5822

SUBJECT: Initial Certification of Central Characterization Project at Lawrence Livermore National Laboratory (A-04-25)

TO: Camille Yuan-Soo Hoo, Manager, Livermore Site Office
Steven D. Warren, General Manager, WTS

The Carlsbad Field Office (CBFO) has completed the initial certification audit of the Central Characterization Project (CCP) TRU waste program deployed at the Lawrence Livermore National Laboratory (LLNL). Audit A-04-25 was conducted in Livermore, California, on May 4-7, 2004, to evaluate the adequacy, implementation, and effectiveness of the CCP technical and quality assurance programs. The audit team determined that the CCP programs are in compliance with the "Waste Analysis Plan" (WAP) of the *WIPP Hazardous Waste Facility Permit* (HWFP), the *Quality Assurance Program Document (QAPD)*, the *CH Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant* (WIPP CH-WAC), and other CBFO requirements and standards. The audit team also determined that the procedures were effectively implemented.

Based on the results of audit A-04-25 the CBFO is granting the CCP authority for the following certification and characterization activities for retrievably-stored, contact-handled S5000 debris waste at the LLNL:

Acceptable knowledge
Data validation & verification
Headspace gas sampling & analysis
Nondestructive assay
Real-time radiography
Visual examination
WIPP Waste Information System interface

Transportation was audited during CCP Audit A-04-01 at the Savannah River Site on October 21-24, 2003. Transportation was found to be adequate and effectively implemented. See the attachments to this memorandum for the complete lists of certified processes, procedures, documents, and systems deployed at the LLNL.

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TRU waste characterization, certification, or transportation using significantly revised or new processes, procedures, or systems must be evaluated by the CBFO prior to their implementation. This authority is limited to retrievably stored, contact-handled S5000 debris waste at the Lawrence Livermore National Laboratory.

R. Paul Detwiler
Acting Manager

Attachment(s)

c: w/attachments

L. Piper, CBFO	*ED
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CTAC Controlled Document Coordinator
WIPP Operating Record, MS 486-06
CBFO M&RC

*ED denotes electronic distribution
CBFO:OCT:KWW:GS04-2036:UFC:5822

CENTRAL CHARACTERIZATION PROJECT DEPLOYMENT AT LAWRENCE LIVERMORE NATIONAL LABORATORY CERTIFICATION PROGRAM STATUS

The CBFO Director of the Office of Characterization and Transportation and the CBFO Quality Assurance Manager have evaluated the documentation supporting the compliance of the CCP TRU waste program deployed at the Lawrence Livermore National Laboratory (LLNL). Based on the results of Audit A-04-25 that was conducted in Livermore, California on May 4-7, 2004, the recommendation to the CBFO Manager is that authority be granted for the following CCP certification and characterization activities for retrievably-stored, contact-handled S5000 debris waste at the LLNL.

- Acceptable knowledge
- Data verification and validation
- Headspace gas sampling and analysis
- Non-destructive assay using the HENC
- Real-time radiography (RTR)
- Visual examination (VE) as a QC check on RTR or VE in lieu of RTR
- WIPP Waste Information System interface

Transportation was audited during CCP Audit A-04-01 at the Savannah River Site on October 21-24, 2003. Transportation was found to be adequate and effectively implemented. Attachments 2 and 3 contain complete lists of all certified procedures and equipment deployed by the CCP at LLNL.

STATUS

- All program elements remain complete.
- The following site documents are current and demonstrate how the CCP complies with the CBFO requirements.
  - **QAPjP – CCP-PO-001, Revision 8** - *CCP Transuranic Waste Characterization Quality Assurance Project Plan* (Approved March 15, 2004 – CBFO:NTP:RMK:VW:04-1075:UFC-5900)
  - **WCP - CCP-PO-002, Revision 9** - *CCP Transuranic Waste Certification Plan* (Approved March 15, 2004 - CBFO:NTP:RMK:VW:04-1074:UFC-5900)
  - **QAP** - Section 4.0 of CCP-PO-002
  - **TRAMPAC – CCP-PO-003, Revision 6**, *CCP TRUPACT-II Authorized Method for Payload Control* (Approved June 8, 2004 – CBFO:NTP:KWW:JGW:04-1480:UFC-5822)
  - Certified Systems - see attachment 2 for the complete list of certified systems used by the CCP at the LLNL
  - Standard operating procedures - see attachment 3 for the complete list of certified CCP procedures used at the LLNL
- CCP participated in the following performance demonstration programs (PDPs):
  - **NDA PDP** participation was satisfactory at LLNL in:
    - Cycle 10C for the HENC (system registration LL03/LLN2) using CCP-TP-007 (CBFO:NTP:MRB:JGW:04-1621:UFC:5822) dated June 29, 2004.

  - Cycle 11A for the HENC (system registration LL03/LLN2) using CCP-TP-007 (CBFO:NTP:MI:JGW:04-1992:UFC:5822) dated September 15, 2004.
- **HSG PDP** - Participation was satisfactory in Cycle 18A for analysis of VOCs in headspace gas using the system identified as HGAS-05 (GC:US00042386, MS: US1040526) using CCP-TP-090 (CBFO:NTP:MRB:JGW:04-1401:UFC:5822) dated April 28, 2004.

- CBFO conducted the initial certification audit (A-04-25) May 4-7, 2004 and issued the interim audit report on May 27, 2004.
- Two CARs were issued as a result of A-04-25. CAR 04-020 was successfully closed on July 14, 2004 and CAR 04-026 was successfully closed on August 4, 2004.
- The Final Audit Report for A-04-25 was issued to NMED on July 19, 2004. A revised report and response to NMED comments was issued on September 9, 2004. The CCP TRU waste program activities at LLNL were determined to be in compliance with CBFO requirements.
- The NMED approved the Final Audit Report on August 27, 2004.
- The EPA issued the QA inspection report on July 21, 2004 and the technical inspection report on August 19, 2004. The technical report determined that the processes were acceptable for debris waste. Two findings were identified and CBFO responded to the findings on September 10, 2004.

RECOMMENDATION

The recommendation to the CBFO Manager is to grant the CCP authority for certification, characterization, and transportation of S5000 debris waste at the LLNL. Attachments 2 and 3 list the systems and procedures that constitute the bounds of this authority.

CONCURRENCE

Ms. Ava L. Holland, Manager
CBFO Quality Assurance Manager

9/30/04
Date

Mr. Kerry W. Watson, Director
CBFO Office of Characterization and Transportation

10/15/04
Date

CENTRAL CHARACTERIZATION PROJECT
LIST OF CERTIFIED EQUIPMENT AT LLNL

WIPP WWIS #	Site Equipment # or Title	Description	Components	Software
Headspace Gas				
13HG1	CCP-HGAS-05	CCP LANL designed headspace gas sampling and analysis (on-line sampling) system in a transportation container ➢ PDP-ID – HGAS-05 (GC:US00042386, MS:US1040526) = Approval Date: Cycle 18A - 04/28/04 Procedure CCP-TP-080	Analytical System consisting of: ☐ GC/MS ☐ GC/MS interface ☐ Thermal conductivity detector ☐ (2) analysis columns ☐ Vacuum pump ☐ Computer work station Drum sampling/venting system consisting of: ☐ Automated sampling manifold with 29 sample bottles, valves, and tubing Sampling head assembly	☐ LabView ☐ Agilent chemstation MS system ☐ Dickson data logger software
Non-destructive Assay				
13HC1	CCP-HENC-01	Canberra Industries High Efficiency Neutron Counter mounted in a transportation container. ➢ PDP ID - LL03/LLN2 = Approval Dates: Cycle 10A 6/29/04 & Cycle 11A 9/15/04 Procedure CCP-TP-107	☐ (113) ^{3}He neutron detectors ☐ (1) Broad range HPGe detector ☐ Shielded assay chamber ☐ Mechanical conveyor and turntable assembly for drum handling ☐ Californium add-a-source assembly Analysis equipment	☐ NDA 2000

WIPP WWIS #	Site Equipment # or Title	Description	Components	Software
Non-destructive Examination				
13RR1	MCS-RTR-2	Real-Time Radiography Mobile Characterization System RTR-2 [built by VJ Technologies] – 55-gallon drums Procedure CCP-TP-102	☐ Shielded X-ray enclosure with hydraulically operated loading/unloading door. ☐ Drum conveyor system with 2-drum sled ☐ X-ray imaging system including X-ray tube and image intensifier ☐ Video/Audio recording equipment	NA
Visual Examination				
13VE1	CCP MOVER	CCP Mobile Visual Examination and Repackaging, Procedure CCP-TP-113	☐ Glove Box with 8 pair of glove ports ☐ HEPA filtered ventilation system ☐ Calibrated balance and check weights ☐ Video/Audio recording equipment ☐ Drum lifting fixture	NA

CENTRAL CHARACTERIZATION PROJECT
LIST OF CERTIFIED PROCEDURES AT LLNL

No.	Procedure Number/Rev	DOCUMENT TITLE
1.	LLNL SOW	Lawrence Livermore National Laboratory Statement of Work for Characterization of LLNL TRU Waste
2.	CCP-PO-001	CCP Transuranic Waste Quality Assurance Project Plan
3.	CCP-PO-002	CCP Transuranic Waste Certification Plan
4.	CCP-PO-003	CCP TRUPACT-II Authorized Methods for Payload Control (Certified in A-04-01)
5.	CCP-PO-008	CCP Quality Assurance Interface with WTS QA Program
6.	CCP-PO-014	CCP LLNL Interface Document
7.	CCP-QP-001	CCP Graded Approach
8.	CCP-QP-002	CCP Training and Qualification Plan
9.	CCP-QP-004	CCP Corrective Action Management
10.	CCP-QP-005	CCP TRU Nonconforming Item Reporting and Control
11.	CCP-QP-006	CCP Corrective Action Reporting and Control
12.	CCP-QP-008	CCP Records Management
13.	CCP-QP-009	CCP Work Control Process
14.	CCP-QP-010	CCP Document Preparation and Approval
15.	CCP-QP-011	CCP Notebooks & Logbooks
16.	CCP-QP-015	CCP Procurement
17.	CCP-QP-016	CCP Control of Measuring, Testing, and Data Collection Equipment
18.	CCP-QP-017	CCP Identification and Control of Items
19.	CCP-QP-018	CCP Management Assessments
20.	CCP-QP-019	CCP Quality Assurance Reporting to Management
21.	CCP-QP-021	CCP Surveillance Program
22.	CCP-QP-022	CCP TRU Software Quality Assurance
23.	CCP-QP-023	CCP Handling, Storage, and Shipping
24.	CCP-QP-026	CCP Inspection Control
25.	CCP-QP-027	CCP Test Control
26.	CCP-QP-028	CCP Records Filing, Inventorying, Scheduling, and Dispositioning
27.	CCP-QP-030	CCP Written Practice for the Qualification of CCP Helium Leak Detection Personnel (Certified in A-04-01)
28.	CCP-TP-001	CCP Project Level Data Validation and Verification
29.	CCP-TP-002	CCP Reconciliation of DQOs and Reporting Characterization Data
30.	CCP-TP-003	CCP Sampling Design and Data Analysis for RCRA Characterization
31.	CCP-TP-005	CCP Acceptable Knowledge Documentation
32.	CCP-TP-028	CCP Radiographic Test and Training Drum Requirements
33.	CCP-TP-030	CCP TRU Waste Certification and WWIS Data Entry
34.	CCP-TP-033	CCP Shipping of CH TRU Waste (Certified in A-04-01)
35.	CCP-TP-041	CCP Preparing and Handling Waste Drum for Visual Examination
36.	CCP-TP-054	CCP Adjustable Center of Gravity Lift Fixture Preoperational Checks and Shutdown (Certified in A-04-01)
37.	CCP-TP-055	CCP Varian Porta-Test Leak Detector Operations (Certified in A-04-01)
38.	CCP-TP-056	CCP HSG Performance Demonstration Plan
39.	CCP-TP-058	CCP NDA Performance Demonstration Plan
40.	CCP-TP-086	CCP TRUPACT-II Shipping Payload Assembly (Certified in A-04-01)
41.	CCP-TP-090	CCP Headspace Gas Sampling Using the Automated Manifold System
42.	CCP-TP-091	CCP HSG Data Generation and Batch Data Reporting Using the Automated System
43.	CCP-TP-102	CCP RTR #2 Radiography Inspection Operating Procedure
44.	CCP-TP-104	CCP Preparing and Handling Waste Drums for Headspace Gas at Lawrence Livermore National Laboratory
45.	CCP-TP-105	CCP Container Management at Lawrence Livermore National Laboratory
46.	CCP-TP-107	Operating the CCP High Efficiency Neutron Counter Using NDA 2000
47.	CCP-TP-108	Calibrating the CCP High Efficiency Neutron Counter Using NDA 2000

No.	Procedure Number/Rev	DOCUMENT TITLE
48.	CCP-TP-109	Data Reviewing, Validating and Reporting for the CCP High Efficiency Neutron Counter Using NDA 2000
49.	CCP-TP-114	CCP Waste Visual Examination