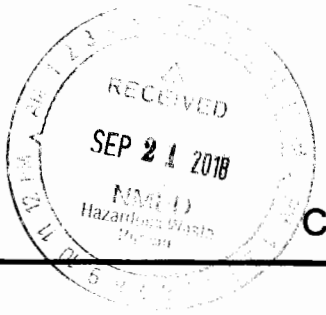
DOE F 1325.8

United States Government

memorandum



ENTERED

Department of Energy
Carlsbad Field Office
Carlsbad, New Mexico 88221

DATE: SEP 21 2018

REPLY TO ATTN OF: CBFO:ONTP:KEP:RMS:18-2255:UFC 5900.00

SUBJECT: Recertification Audit Scope for the Savannah River Site - Central Characterization Program 2018

TO: Mr. Casey Gadbury , Director, Office of Quality Assurance

This memorandum is to inform you that the Carlsbad Field Office (CBFO), Office of the National TRU Program (NTP) has determined that the Central Characterization Program (CCP) deployed at the Savannah River Site (hereinafter referred to as SRS-CCP) is prepared for a recertification audit for contact-handled (CH) Summary Category Groups (SCGs) CH solids waste (S3000), soils/gravel (S4000), and CH debris waste (S5000) and remote-handled (RH) debris waste at the SRS-CCP.

This request is in accordance with the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (HWFP). Per the WIPP HWFP Waste Analysis Plan (WAP); Section C6-3, Audit Position Functions, "Audits will be conducted at least annually for each site involved in the waste characterization program." Therefore, we request that you perform an audit to assess the adequacy, implementation and effectiveness of the SRS-CCP program in accordance with the CBFO Management Procedure 5.2, *TRU Waste Program Certification/Recertification* and also in accordance with the:

- WIPP Hazardous Waste Facility Permit Waste Analysis Plan;
- Transuranic Waste Acceptance Criteria for the WIPP, Rev 8
- CBFO Quality Assurance Program Document; and the
- WIPP Documented Safety Analysis, Chapter 18.

As you know, the SRS-CCP is not currently performing characterization field activities; however, this is not a request for a close-out audit. The last desktop recertification audit was performed on December 6 - 8, 2016. Limited Project Level activity has continued since then. Certification of both CH and RH containers, characterized using certified equipment, necessitates the WIPP WWIS # associated with the certified equipment and procedures to be included in the scope of the audit. Once SRS-CCP data generation activities resume at the SRS, NTP will request that your organization conduct a site visit to evaluate those activities before authorizing SRS-CCP to certify containers generated from the resumption of data generation activities. Since the last certification memo the containers located at the WIPP waste handling building and at SRS for waste stream SR-221H-PuOX have completed the AK enhancement criteria. Waste streams SR-MD-PAD1, SR-RH-FBL.01, SR-W026-221F-HET, SR-W026-221F-HOM, SR-W026-221F-HEPA, SR-W027-221F-HET-A, SR-W027-FB-Pre86-C and SR-W027-HBL-BOX have gone through the AK Enhancement criteria and the CBFO approvals are currently routing through the CBFO.

180917

The Enhanced Acceptable Knowledge process is taking place now. The Chemical Compatibility Evaluation Memorandums (CCEMs) for the following waste streams were approved by CBFO:

Waste Stream	AK Report	Approved
SR-MD-PAD-1	CCP-AK-SRS-9	July 6, 2017
SR-RH-FBL.01	CCP-AK-SRS-580	June 20, 2018
SR-W026-221F-HET	CCP-AK-SRS-3	June 20, 2018
SR-W026-221F-HOM	CCP-AK-SRS-3	June 20, 2018
SR-W026-221F-HEPA	CCP-AK-SRS-3	June 20, 2018
SR-W027-221F-HET-A	CCP-AK-SRS-1	June 20, 2018
SR-W027-FB-Pre86-C	CCP-AK-SRS-2	June 20, 2018
SR-W027-HBL-BOX	CCP-AK-SRS-4	June 9, 2017

Several Basis of Knowledge (BoK) evaluation memorandums are with CBFO for approval. At the SRS, there are containers of the aforementioned waste streams that are certified for shipment.

The Generator Site Technical Review (GSTR) was performed on July 17-21, 2017. The GSTR report was finalized on February 20, 2018. Twelve issues have been identified which will consist of observations and recommendations. All of the issues were satisfactorily addressed and resolved as of May 28, 2018.

The Environmental Protection Agency (EPA) provided approval for the SRS/CCP Tier 1 approval process for waste streams SR-RH-773A.01 was completed on June 5, 2017, and SR-RH-MNDPAD1.01 in June 15, 2016.

The processes that need to be audited at a minimum are listed in Table 1 on Page 3 of this memorandum. Please evaluate the adequacy, implementation, and effectiveness of the SRS-CCP CH and RH program for meeting both technical and quality assurance requirements. The procedures and equipment that coincide with these processes to be audited are attached.

The SRS-CCP TRU Waste Site Program Documents, TRU Waste Site Documents and plans have been determined to be adequate through the CBFO Management Procedure 4.10, *The processing of TRU Waste Site Documents* review and approval process of those listed in Attachment 2. The processes and methods that apply are listed in Attachment 1. No equipment for characterization is currently operational.

In order for the CBFO NTP to re-evaluate the SRS-CCP characterization activities, these areas must be determined to be adequate, implemented, and effective in meeting both technical and quality assurance requirements. Upon completion of the audit, please provide a report that will allow our office to efficiently put together a certification memorandum.

Table 1 – SRS-CCP CH and RH Certified Waste Characterization Processes

(No waste characterization field activities have been performed since the previous audit)

Characterization Process[1]	CH S3000 Solids		CH S4000 Soils/Gravel		CH S5000 Debris		RH S5000 Debris Waste Stream	
	Newly generated	Retrievably -stored	Newly generated	Retrievably-stored	Newly generated	Retrievably-stored	Newly generated	Retrievably-stored
Acceptable Knowledge (AK)	N/A	Approved	Approved	Approved	Approved	Approved	N/A	Approved
Chemical Compatibility Evaluation	N/A	N/A	N/A	N/A	Approved	N/A	N/A	N/A
Basis of Knowledge Evaluation	N/A	N/A	N/A	N/A	Approved	N/A	N/A	N/A
Data Validation & Verification (V&V)	N/A	Approved	Approved	Approved	Approved	Approved	N/A	Approved
Load Management	N/A	Approved	Approved	Approved	Approved	Approved	N/A	N/A
Non-Destructive Assay (NDA)	Approved	Approved	Approved	Approved	Approved	Approved	N/A	N/A
Dose-to-Curie (DTC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Approved
Real-Time Radiography (RTR)	Approved	Approved	Approved	Approved	Approved	Approved	N/A	Approved
Visual Examination (VE)	Approved	Approved	Approved	Approved	Approved	Approved	N/A	Approved
WIPP Waste Information System (WWIS)	Approved	Approved	Approved	Approved	Approved	Approved	N/A	Approved

[1]Characterization Processes in this table may not be completely listed in Attachment 2.

CONTACT-HANDLED

EPA CH Baseline approved July 2006, DOCKET NO: A-98-49; II-A4-65

EPA Tier 1 Approval adding SGS NDA system dated August 2007, DOCKET NO: A-98-49; II-A4-90.

EPA Tier 1 Approval for the NABC NDA system dated August 2009, DOCKET NO: A-98-49; II-A4-114.

EPA Tier 1 Approval adding S3000 dated March 2010, DOCKET NO: A-98-49; II-A4-123.

EPA Tier 1 Approval of Calibration Range Extension of the NABC dated September 2010, DOCKET NO: A-98-49; II-A4-133.

EPA Tier 1 Approval change to an Efficiency-based calibration for the NABC BSGS dated May 2011, DOCKET NO: A-98-49; II-A4-148.

EPA Tier 1 Approval change to the NABC BSGS 5 ft. Setback for 55-gallon drums dated September 2012, DOCKET NO: A-98-49; II-A4-166.

EPA Tier 1 Approval change to the NABC BSGS 5 ft. Setback for SWBs dated February 2013, DOCKET NO: A-98-49; II-A4-171.

EPA Tier 1 Approval change to use NABC 5 ft. Setback Configuration for CH waste in SLB2s dated March 2014, DOCKET NO: A-98-49; II-A4-182.

EPA Continued Compliance Inspection report DOCKET NO: A-98-49; II-A4-195 dated February 2015, references that SRS-CCP is not currently prepared to use or demonstrate the CH VE process.

REMOTE-HANDLED

EPA approved the Baseline and Tier 1 change requests for Remote-Handled (RH) Battelle Columbus Laboratory (BCL) Waste Streams for SR-BCLDP.001.001, SR-BCLDP.002, SR-RL-BCLDP.001, SR-RL-BCLDP.002, SR-BCLDP.003, SR-BCLDP.001.002, SR-BCLDP.004.002, SR-BCLDP.004.003. The last BCL shipment from SRS was shipped on July 28, 2011 and arrived at the WIPP facility on July 29, 2011. An additional 20 BCL drums remain at the Hanford Site which will be processed as a Tier 1 to Waste Streams SR-RL-BCLDP.001, DOCKET NO: A-98-49; II-A4-149.

EPA RH Baseline Approval dated April 2012 of the waste characterization program implemented to characterize RH debris (S5000) waste from the Waste Stream SR-RH-FBL.01 dated April 2012, DOCKET NO: A-98-49; II-A4-161.

EPA Tier 1 approval dated February 2013 of the Tier 1 change to include RH debris Waste Stream SR-RH-235F.01, DOCKET NO: A-98-49; II-A4-170.

EPA Tier 1 approval dated August 2013 of the Tier 1 change to include RH debris Waste Stream SR-RH-221H.01 dated August 20, 2013, DOCKET NO: A-98-49; II-A4-177.

EPA Tier 1 approval dated May 2014 adding the 3 sealed source containers of the RH Waste Stream SR-RH-SDD.01 at the SRS DOCKET NO: A-98-49; II-A4-184. For this waste stream, EPA is approving AK/VE for radiological characterization using simple mass-based isotopic relationships and then applying the OSRP database for non-plutonium radionuclides as an alternative characterization method from that used in CCP-TP-504. RH VE is only approved for this waste stream.

EPA Tier 1 approval dated December 31, 2014 to include the one 55-gallon drum No. BC0152 containing RH debris waste from the alpha gamma hot cell in Building JN-1 at the Battelle Columbus Laboratory (BCL) to be added to the existing approved RH waste stream SR-BCLDP.003. DOCKET NO: A-98-49; II-A4-196.

EPA Continued Compliance Inspection 2014 report dated February 2015. DOCKET NO. A-98-49; II-A4-195 which found the RTR process to be adequate was submitted to the CBFO. Submission to EPA of a list of all RTR personnel who performed work during the previous quarter is a new RTR T2 change (See Attachment 4 of this memorandum). Specifically, the list must include all operators and ITRs and must be submitted to the EPA.
EPA Tier 1 approval dated August 3, 2015 adding the RH TRU Debris Waste Stream SR-RH-SWD.01 currently made up of Waste

Container No. SR607484, DOCKET NO: A-98-49; 11-A4-197.

EPA Tier 1 approval dated November 25, 2015 adding the waste stream SR-RH-772F.01, DOCKET NO: A-98-49; II-A4-202.

EPA Tier 1 Approval dated June 2016 adding waste stream SR-RH-MNDPAD1.01 DOCKET NO: A-98-49; II-A4-204.

EPA Tier 1 Approval dated June 2017 adding the waste stream SR-RH-773A.01 DOCKET NO: A-98-49; II-A4-210.

If you have any questions, please contact Tom Carver, ONTP TRU Waste Certification Manager at 575-234-7302.

Sincerely,

Kenneth E. Princen, Assistant Manager
Office of the National TRU Program

Attachments (2)

CBFO:ONTP:KEP:RMS:18-2255:UFC 5900.00

cc: w/attachments

G. Basabilvazo, CBFO	*ED	R. McGinnis, NWP	ED
M. Brown, CBFO	ED	J. Morrison, NWP	ED
J. Walker, CBFO	ED	L. Oberbeck, NWP	ED
T. Carver, CBFO	ED	S. Offner, NWP	ED
N. Castaneda, CBFO	ED	D. Ott, NWP	ED
H. Cruickshank, CBFO	ED	B. Pace, NWP	ED
C. Fesmire, CBFO	ED	M. Pearcy, NWP	ED
D. Miehls, CBFO	ED	J. Pestovich, NWP	ED
M. Navarrete, CBFO	ED	M. Ramirez, NWP	ED
D. Ferguson, DOE-SR	ED	A. Ray, NWP	ED
J. Ellis, EPA	ED	R. Reeves, NWP	ED
E. Feltcorn, EPA	ED	F. Romo, NWP	ED
T. Peake, EPA	ED	R. Romo, NWP	ED
J. Kieling, NMED	ED	C. Simmons, NWP	ED
R. Maestas, NMED	ED	P. Tilmon, NWP	ED
B. Covert, NWP	ED	K. Urquidez, NWP	ED
V. Ballew, NWP	ED	J. Vajda, NWP	ED
J. Carter, NWP	ED	D. Wade, NWP	ED
R. Chavez, NWP	ED	M. Walentine, NWP	ED
A. Farok, NWP	ED	C. Castillo, CTAC	ED
K. Haar, NWP	ED	T. Runyon, CTAC	ED
J. Harvill, NWP	ED	P. Hinojos, CTAC	ED
J. Haschets, NWP	ED	P. Martinez, CTAC	ED
A. Hendren, NWP	ED	D. Stegman, CTAC	ED
L. Jones, NWP	ED	G. White, CTAC	ED
R. Kantrowitz, NWP	ED	M. Carter, LANL	ED
C. Kirkes, NWP	ED	W. Weyerman, LANL	ED
R. Lee, NWP	ED	S. Pearcy, TFE, Inc.	ED
C. Luoma, NWP	ED	WIPP Operating Record	ED
S. Martinez, NWP	ED	Site Documents	ED
M. McDaniel, NWP	ED	CBFO M&RC	

*ED denotes electronic distribution

CENTRAL CHARACTERIZATION PROJECT
List of Processes/Equipment Certified from Table 1 of Memo at Savannah River Site
No equipment for characterization is currently operational.

WIPP WWIS #	Site Equipment #	Description	Components	Software	NDA Calibrated Range, Operating Range and TMU
					extended count time and 20-minute reduced count time calibrations approved for NABC gamma efficiency-based calibration for 55 gallon drums and SWB's. SLB2's[5 foot setback] are approved for one hour counts only and are limited to a two container population. In addition the SLB2 far field configuration may not be used for sorting TRU waste. CCP-SRS-SRBC001 R7 For the passive neutron modality, two calibrations are approved: (1) Passive neutron calibration utilizing high-efficiency coincidence and multiplicity counting technique together with Cf-252 Add-A-Source based-calibration for 1-hour extended count time, in accordance with ASTM Standard C-1207 (Neutron Coincidence Counting) and ASTM Standard C-1500 (Neutron Multiplicity Counting) for the Box Neutron Assay System at the Savannah River Site, CCP-SRS-NABC-2011-01, May 2, 2011. The 1-Hour extended count time calibration arrangement is approved for the NABC Box Neutron Assay System neutron coincidence and multiplicity counting Cf-252 Add-A-Source-based calibrations. (2) Passive neutron calibration utilizing high-efficiency coincidence and multiplicity counting technique together

CENTRAL CHARACTERIZATION PROJECT
List of Processes/Equipment Certified from Table 1 of Memo at Savannah River Site
No equipment for characterization is currently operational.

WIPP WWIS #	Site Equipment #	Description	Components	Software	NDA Calibrated Range, Operating Range and TMU
					with Cf-252 Add-A-Source based-calibration for 20-minute reduced count time, in accordance with ASTM Standard C-1207 (Neutron Coincidence Counting) and ASTM Standard C-1500 (Neutron Multiplicity Counting) for the Box Neutron Assay System at the Savannah River Site, CCP-SRS-NABC-2011-01, May 2, 2011. The 20-minute reduced count time calibration arrangement is approved for the NABC Box Neutron Assay System neutron coincidence and multiplicity counting Cf-252 Add-A-Source-based calibrations. The determination of the TMU for the NABC is similarly documented for the gamma modality in A40972, "Savannah River Box Gamma Box Counter Total Measurement Uncertainty Report for Alternatives for Non-Destructive Assay (NDA) of Large Containers to Allow Shipping in TRUPACT-III without Resizing and/or Repackaging," dated October 15, 2007, and for the neutron modality in A41309, "Savannah River Neutron Box Counter Total Measurement Uncertainty Report for Alternatives for Non-Destructive Assay (NDA) of Large Containers to Allow Shipping in TRUPACT-III without Resizing and/or Repackaging," dated October 15, 2007.

CENTRAL CHARACTERIZATION PROJECT
List of Processes/Equipment Certified from Table 1 of Memo at Savannah River Site

WIPP WWIS #	Site Equipment #	Description	Components	Software	NDA Calibrated Range, Operating Range and TMU
Non-destructive Examination*					
1RR4	RTR-4	Real-time Radiography Method identified in CCP-TP-053 CCP-TP-145	• Shielded x-ray enclosure with a rear container loading door and manually opened personnel door • Conveyer cart • Drum manipulation equipment • X-ray imaging system including x-ray tube, image intensifier, and video camera • Video/audio recording equipment • Mobile platform	N/A	N/A
1LCNDE	LCNDE	Real-time Radiography Method identified in CCP-TP-053 CCP-TP-074	• X-ray source - Linatron 3 MeV linear accelerator • Linear Diode Array (LDA) - X-ray imaging system which is used to produce a single still image of the container. • Area Detector Array (ADA) - X-ray imaging system which provides real time radioscopic images of the container. • Imaging and control software. • Container manipulation equipment • Video/audio recording equipment	N/A	N/A

***During the EPA Continued Compliance Inspection conducted August 19-21, 2014, the EPA was unable to observe SRS-CCP Real Time Radiography (RTR) operators due to the lack of a functioning RTR unit at the time of the EPA inspection. The approval of all RTR characterization performed after August 19, 2014 is pending until the EPA is able to determine technical adequacy of RTR operations. A follow-up inspection by the EPA regarding the RTR equipment occurred on October 15, 2014. The CBFO received the EPA Continued Compliance Inspection report providing the approval of RTR operations at the SRS on February 23, 2015 (EPA Docket No. A-98-49; II-A4-195).**

CENTRAL CHARACTERIZATION PROJECT List of Processes/Equipment Certified from Table 1 of Memo at Savannah River Site					
WIPP WWIS #	**Site Equipment #**	**Description**	**Components**	**Software**	**NDA Calibrated Range, Operating Range and TMU**
Visual Examination					
VISUAL	Visual Examination	Visual Examination Method identified in CCP-TP-113, CCP-TP-163	N/A	N/A	N/A
1RHVE1	Visual Examination Activities for Waste Stream SR-RH-SDD.01 only	CCP-TP-500 CCP-TP-163	N/A	N/A	N/A
Dose-to-Curie					
1DTC1	Dose-to-Curie	Radiological characterization Method identified in CCP-TP-504	As identified in CCP-TP-504	As identified in CCP-TP-504	N/A
Sealed Sources					
16311	OSR Access and Excel	Radiological characterization as described in CCP-RC-SRS-631	Mass based isotopic relationships applying OSRP database for non-plutonium radionuclides as described in CCP-RC-SRS-631	OSRP Access and Excel	N/A

CENTRAL CHARACTERIZATION PROJECT AT Savannah River Site LIST OF CERTIFIED PROCEDURES/DOCUMENTS TO BE AUDITED			
#	**Procedure No.**	**Revision No.***	**PROCEDURES/DOCUMENT Title**
36.	CCP-TP-140	13	CCP Equipment Maintenance
37.	CCP-TP-163	4	CCP Evaluation of Waste Packaging Records for Visual Examination of Records
38.	CCP-TP-200	4	Enhanced Acceptable Knowledge Review
39.	CCP-TP-500	15	CCP Remote-Handled Waste Visual Examination
40.	CCP-TP-504	20	CCP Dose-to-Curie Survey Procedure for Remote-Handled Transuranic Waste
41.	CCP-TP-505	8	CCP Removable Lid Canister/Neutron Shielded Canister Loading
42.	CCP-TP-506	6	CCP Preparation of the Remote-Handled Transuranic Waste Acceptable Knowledge Characterization Reconciliation Report
43.	CCP-TP-507	8	CCP Shipping of Remote-Handled Transuranic Waste
44.	CCP-TP-509	6	CCP Remote-Handled Transuranic Container Tracking
45.	CCP-TP-512	6	CCP Remote-Handled Waste Sampling
46.	CCP-TP-514	1	CCP Procedure for Radiological Calculation Package Submittal
47.	CCP-TP-515	0	CCP Remote-Handled Radiological Characterization Technical Report
48.	CCP-TP-530	12	CCP RH TRU Waste Certification and WWIS/WDS Data Entry
*NOTE: Any changes to procedures that affect performance criteria or data quality, testing procedures, quality assurance objectives, calibration requirements, or QA sample acceptance criteria comply with the WIPP HWFP WAP (Attachment C) and shall not be made without prior approval of the CBFO.			

CENTRAL CHARACTERIZATION PROJECT
List of Processes/Equipment Certified from Table 1 of Memo at Savannah River Site
No equipment for characterization is currently operational.

WIPP WWIS #	Site Equipment #	Description	Components	Software	NDA Calibrated Range, Operating Range and TMU
Non-destructive Assay					
1NABC1	NABC – (SR05/SRN5)	Nondestructive Assay Box Counter – 55-gallon drums, standard waste boxes (SWBs), and standard large box 2s (SLB2s) Method identified in CCP-TP-189 and CCP-TP-191	Gamma • Two Co-60 Transmission Sources • Two NaI Gamma Detectors for transmission measurements • Four Broad Energy Germanium (BEGe) Detectors for gamma emission measurements • Six Digital Signal Processors Neutron • 320 He-3 Tubes in High Density Polyethylene Liner • Cf-252 Add-A-Source Correction	• NDA-2000 • Genie-2000	The NABC has two modalities of operation: gamma and neutron. Therefore, two sets of calibration documents exist. For the gamma modality three calibrations are approved: (1) Gamma near-field calibration utilizing multi-curve efficiency-based calibration, in accordance with ASTM Standard C1133/C1133-10 for the Box Segmented Gamma System at the Savannah River Site, CCP-SRS-NABC-2011-01, May 2, 2011. Both 1-hour extended count time and 20-minute reduced count time calibration arrangements are approved for NABC gamma near-field efficiency-based calibration. (2) Gamma near-field calibration utilizing matrix transmission correction-based calibration, in accordance with ASTM Standard C1133/C1133-10 for the Box Segmented Gamma System at the Savannah River Site, CCP-SRS-NABC-2011-01, May 2, 2011. Both 1-hour extended count time and 20-minute reduced count time calibration arrangements are approved for NABC gamma near-field matrix transmission correction-based calibration (3) Gamma [5-foot set-back] far-field calibration utilizing multi-curve efficiency-based calibration, in accordance with ASTM Standard C1133/C1133-10 for the Box Segmented Gamma System at the Savannah River Site, CCP-SRS-NABC-2011-01, May 2, 2011. Both 1-hour