

United States Government

Department of Energy

memorandum

Carlsbad Field Office
Carlsbad, New Mexico 88221

DATE: January 18, 2002

REPLY TO
ATTN OF: CBFO:QA:MLC:GS:02-0612:UFC 2300.00

SUBJECT: CBFO Surveillance Report S-02-04, Characterization Activities at the Hanford Site
Plutonium Finishing Plant (PFP)

TO: Todd Shrader, RL

The Carlsbad Field Office (CBFO) conducted a surveillance on December 18-19, 2001 of the Hanford Site waste characterization activities being performed at the PFP. The surveillance team concluded that the Hanford Site PFP procedures were adequate. The audit team also concluded that the visual examination technique, repackaging and nondestructive assay (NDA) processes were being satisfactorily implemented and were effective. The CBFO audit report is attached.

There was one CBFO corrective action report issued as a result of the audit related to training. The CAR has been forwarded to you under separate cover. Two Observations were identified during the audit and are included in the surveillance report.

If you have any questions or comments concerning this report, please contact me at (505) 234-7484.

A handwritten signature in cursive script that reads "Marc A. Italiano".

Marc A. Italiano
Acting Quality Assurance Manager

Attachment

cc w/attachment:
I. Triay, CBFO
K. Watson, CBFO
L. Chism, CBFO
D. Winters, DNFSB
S. Monroe, EPA
M. Eagle, EPA
S. Zappe, NMED
E. Bilson, RL
B. Walker, EEG
P. Crane, FH
J. Maupin, FH
M. Gerle, WTS
T. Bowden, CTAC
CBFO Mailroom

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U.S. DEPARTMENT OF ENERGY
CARLSBAD FIELD OFFICE

SURVEILLANCE REPORT

OF THE

HANFORD SITE

RICHLAND, WASHINGTON

SURVEILLANCE NUMBER S-02-04

DECEMBER 18- 19, 2001

TRU WASTE CHARACTERIZATION ACTIVITIES AT THE PLUTONIUM
FINISHING PLANT



Prepared By: _____

Steven D. Calvert
Surveillance Team Leader

Date: _____

Approved By: _____

Marc A. Italiano
Acting CBFO QA Manager

Date: _____

1.0 EXECUTIVE SUMMARY

Carlsbad Field Office (CBFO) Surveillance S-02-04 was conducted to evaluate the adequacy, implementation, and effectiveness of the applicable technical activities related to the Hanford Site Transuranic (TRU) Waste Characterization activities performed at the Plutonium Finishing Plant (PFP). Hanford procedures, and processes for assay, visual examination, and repackaging of waste at the PFP as applied to retrievably stored debris (S5000) and homogenous solid (S3000) waste were examined during this Surveillance.

The Surveillance was conducted at the Hanford Site December 18-19, 2001. The Surveillance team concluded that the Hanford technical procedures are adequate relative to the flow down of requirements from the CBFO Quality Assurance Program Document (QAPD), and the Waste Acceptance Criteria (WAC).

The Surveillance team concluded that the Hanford QA program satisfactorily met the requirements of the QAPD and WAC. The Surveillance team also concluded that the QA program is being satisfactorily implemented. The adequacy, implementation, and effectiveness of the Hanford QA program was verified and documented during recertification Audit A-01-03, which was June 11-15, 2001. The Surveillance team determined that the Hanford technical processes evaluated for PFP are satisfactorily implemented and effective.

The Surveillance team identified one condition adverse to quality that resulted in the issuance of one CBFO corrective action report (CAR), which requires corrective action in the area of independent technical reviewer training. Two issues were identified that resulted in two Observations during this the Surveillance. The CAR and Observations are described in section 6.0.

The surveillance team also reviewed the corrective action for three CARs (01-042, 01-043, and 01-044) issued during previous audits. The corrective action for the CARs was deemed to be satisfactory and the CARs are in the process of being closed.

2.0 SCOPE

The Surveillance team evaluated the adequacy, implementation, and effectiveness of technical processes related to the Hanford Site Transuranic (TRU) Waste Characterization and Certification Programs. Hanford procedures, and processes for assay, visual examination, and packaging of waste at the Plutonium Finishing Plant (PFP) as applied to retrievably stored debris (S5000) and homogenous solid (S3000) waste were examined during this Surveillance.

The following CBFO technical characterization elements were evaluated in accordance with the WAC:

Nondestructive Assay (NDA)
Visual Examination Technique (VET)
Waste Packaging

Evaluation of Hanford TRU Waste Characterization Program documents was based on current revisions of the following documents:

Hanford Site Quality Assurance Project Plan (QAPjP) for the Transuranic Waste Characterization Program
Hanford Site Transuranic Waste Certification Plan
Related Hanford (PFP) technical implementing procedures

3.0 SURVEILLANCE TEAM, INSPECTORS, AND OBSERVERS

SURVEILLANCEORS/TECHNICAL SPECIALISTS

Steven Calvert	Surveillance Team Leader, CTAC
Pete Rodriguez	Surveillor, CTAC
Karen Gaydosh	Technical Specialist, CTAC

OBSERVERS/INSPECTORS

Ed Felcorn	EPA Inspector
Dave Stuenkel	EPA/Trinity Engineering Inspector
Robert Thiekle	EPA/Trinity Engineering Inspector
James Channell	EEG Observer

4.0 SURVEILLANCE PARTICIPANTS

Hanford individuals involved in the Surveillance process are identified in Attachment 1. A pre Surveillance meeting was held in the PFP conference room, on December 18, 2001. A daily meeting was held with Hanford management and staff to discuss issues and potential deficiencies. The Surveillance was concluded with a post Surveillance meeting held at the Central Waste Complex conference room on December 19, 2001.

5.0 SUMMARY OF SURVEILLANCE RESULTS

5.1 Program Adequacy, Implementation, and Effectiveness

The Surveillance team concluded that the Hanford PFP technical program satisfactorily met the requirements of the CBFO QAPD, revision 3, and the WAC, revision 7. The Hanford PFP technical processes evaluated by the Surveillance team were determined to be satisfactorily implemented and effective.

5.2 Technical Activities

Evaluations of applicable Hanford technical activities are summarized below. Technical procedures evaluated during the Surveillance are provided in Attachment 2 of this report.

5.2.1 Nondestructive Assay

The Surveillance team evaluated the Segmented Gamma Assay System (SGSAS) located in the Plutonium Finishing Plant (PFP) at the Hanford site. This system is used for assaying TRU wastes packaged in small containers (pewter or billet cans) containing weapons grade plutonium. This instrument has a calibration that is not Item Description Code (IDC) specific but instead keys on the density of the materials being assayed. The Surveillance team evaluated the applicable PFP procedures to ensure they were consistent with the upper level CBFO requirements. Using the reviewed Hanford procedures, a checklist was prepared and used to evaluate the PFP NDA process as follows:

- Operability and condition of equipment
- Instrument calibration and traceability of calibration sources
- Applicability of calibration to waste type and radionuclide content
- Implementation and effectiveness of instrument/measurement controls
- Verification that Hanford procedures are executed
- Completed data packages to ensure data are reported and reviewed as required
- Data storage and retrievability

The Surveillance team interviewed Hanford and contractor personnel, observed equipment operations and examined records. The Surveillance team concluded that the written procedures for the SGSAS were adequate. The Surveillance team determined that due to the issuance of the CARs that the PFP NDA process has been unsatisfactorily implemented and is ineffective.

5.3.2 Visual Examination Technique and Repackaging

The Surveillance team evaluated visual examination technique (VET) operations applied to retrievably stored debris and homogeneous solid waste in the Plutonium Finishing Plant (PFP). The specific waste summary categories subject to the VET were "Rocky Flats Ash" (S3000, homogenous solids) and "Plutonium/Aluminum (Pu/Al) Alloys" (S5000, debris). The VE technique requirements for use at Hanford on TRU waste is promulgated to the waste generators by the TRU Site Project Office by way of procedure WMP-400, section 7.1.10, *TRU Waste Visual Examination Technique*. This is a generic procedure that applies to any waste generator that performs the VET of TRU waste for purposed WIPP characterization at Hanford. The PFP has developed two procedures based on the requirements of WMP-400, section 7.1.10. Procedure ZO-160-080, *Pipe-N-Go Operations*, provides the instructions for repackaging and

performing VET on residues. Implementation of this procedure at the time of the Surveillance had been limited to Rocky Flats Ash. It is intended that this procedure be applied to other residues, such as Hanford Incinerator Ash, during future repackaging campaigns. The procedure requires that the residues are to be crushed and sieved during repackaging, the residues are also "blended down" with silica sand to reduce Pu concentrations. Procedure ZO-160-081, *Pu/Al Alloys Operations* is limited to repackaging and performing VET on Pu/Al alloys. Hanford intends to develop other procedures that meet the requirements of WMP-400, section 7.1.10 for other waste types in various facilities.

During the Surveillance, repackaging and VET operations were witnessed in PFP. These included the VE of incinerator ash, the repackaging of the ash into billet cans, and the packaging of the billet cans into a pipe overpack component (POC). Hanford had completed the repackaging campaign for Rocky Flats Ash before the start of the Surveillance and has previously demonstrated the process for plutonium alloy plates (Audit A-01-16). Several testing batch data reports were reviewed that documented the VE process for waste repackaged at PFP.

The surveillance team reviewed several VET batch data reports and found them to be technically acceptable. However, during the review it was determined that numerous error corrections in the reports indicate an inattention to detail during the generation level data entry (Observation 2). The surveillance team also determined that quarterly data validations have not been performed in a timely manner on newly generated waste data (Observation 1).

The training of the VET operators was reviewed and found to meet the requirements of the TRU Waste Program. A deficiency was identified in the area of the independent technical reviewer training for VET generation batch reports (CAR 02-033). The Surveillance team determined that the written procedures for the VET and repackaging processes were adequate. The Surveillance team also concluded that the VET and repackaging processes were satisfactorily implemented and effective.

6.0 Corrective Action Reports (CARs) and Corrected During the Surveillance (CDA)

6.1 CARs

6.1.2 CARs Initiated as a Result of CBFO Surveillance S-02-04

The following CAR, initiated as a result of Surveillance S-02-04, has been transmitted to Hanford under separate cover. A brief description is provided below.

6.1.2.1 CBFO CAR 02-033

The Independent Technical Reviewer has not received all the required training to perform the reviews. The WAP (B3-10a(1)) states "this review will be performed by an

individual other than the data generator who is qualified to have performed the initial work." The Independent Technical Reviewer has not received the required operator training.

6.2 Deficiencies Corrected During the Surveillance

No deficiencies, requiring remedial action only and corrected during the surveillance were identified during the Surveillance.

6.2 Observations

Two Observations were identified during the surveillance

1. Data validation on one randomly selected container of newly generation should be performed on a quarterly basis.
2. The VE data packages reviewed contain many corrected errors. This indicates an inattention to detail. Hanford should attempt to cut down on the number of errors made during the data entry phase of the process

7.0 LIST OF ATTACHMENTS

Attachment 1: Personnel Contacted During the Surveillance
Attachment 2: Table of Procedures Surveilled

PERSONNEL CONTACTED DURING THE SURVEILLANCE

HANFORD PERSONNEL CONTACTED				
NAME	ORG/TITLE	PRESURVE ILLANCE MEETING	CONTACTED DURING SURVEILLAN CE	POST SURVEIL LANCE MEETING
Baker, E. Scott	PFP NDA Scientist	X	X	
Crane, Paul J.	TRU Site Project Manager	X	X	X
Curfman E. W.	PFP Labortory Manager	X	X	
DeRosa, David	FH Site Project Manager	X	X	X
Fazzar, Dennis	PFP NDA Scientist	X	X	
Gillespie, Bruce	Canberra NDA Scientist		X	X
Greager, Eric	FH TRU Project	X	X	X
Greager, Tim	TRU Program/Alternate Site Project Manager	X	X	X
Huggins, Stewart	Facility Quality Assurance Officer	X	X	X
Hutchins, Les	FH Plant Engineer	X	X	X
Kover, Karola	FH Waste Certification Official Alternate		X	
Maupin, Jim	Site Quality Assurance Officer	X	X	X
Nance, Sheri	FH Alternate Site Quality Assurance Officer		X	
Skeels, Brian	FH PFP Project Manager	X	X	X
Sax, Scott	PFP Director of Operations	X	X	
Sutter, Caroline	FH PFP Residues Manager	X	X	X

HANFORD PERSONNEL CONTACTED				
NAME	ORG/TITLE	PRESURVE ILLANCE MEETING	CONTACTED DURING SURVEILLAN CE	POST SURVEIL LANCE MEETING
Westsik, George	PFP NDA Scientist	X	X	
Wright, Allison	DOE-RL Residues PM	X	X	X

HANFORD PFP PROCEDURES SURVEILLANCEED

NUMBER	PROCEDURE NUMBER	TITLE
1.	WMH-400, Section 7.1.10	TRU Waste Visual Examination Technique
2.	FSP-PFP-5-8, 16.1	Quality Assurance Objectives for NDA at PFP
3.	FSP-PFP-5-8, 16.2	Data Management
4.	ZA-400-301	SAS Energy and Efficiency Setup and Baseline Determination
5.	ZA-400-302	Calculation of Assay Results
6.	ZA-948-385	NDA Using the Segmented Gamma Assay System (SGSAS)
7.	ZO-160-080	Pipe-N-Go Operations
8.	ZO-160-081	Plutonium/Aluminum Alloy Operations