



United States Government

Department of Energy

Memorandum

DATE: March 26, 2004

REPLY TO: IG-30 (A03RL015)
ATTN OF:

Audit Report No.: OAS-L-04-12

SUBJECT: Audit of Consolidation of Hanford's Surplus Plutonium-Bearing Material

TO: Assistant Secretary for Environmental Management

INTRODUCTION AND OBJECTIVE

The Department of Energy's (Department) Office of Environmental Management (EM) and National Nuclear Security Administration (NNSA) are responsible for stabilization, repackaging and safeguarding of about 13 metric tons of surplus weapons-usable plutonium or plutonium-bearing material (surplus plutonium). The Defense Nuclear Safety Board (DNFSB) agreed to the stabilization and repackaging as long as there would be a continued surveillance of the material.

In the 1997 Record of Decision for the *Storage and Disposition of Weapons-Usable Fissile Materials Final Programmatic Environmental Impact Statement*, the Department planned to transfer surplus plutonium to the Savannah River Site (SRS) for conversion to reactor fuel or immobilization in a glass or ceramic material. In a January 2004 draft decision memorandum, EM planned to proceed with these efforts and to ultimately dispose of the immobilized material at Yucca Mountain. The Department plans to begin the effort despite DNFSB concerns over the suitability of long term storage facilities at SRS. Transfer of the Hanford Site's surplus material and de-inventory of the Plutonium Finishing Plant by September 2007 are dependent on the availability of transportation resources and the completion of a number of other actions by the Department. Because of the importance of this issue and the potential impact on current remediation efforts, we initiated this audit to determine whether the Department should proceed with its plan to consolidate Hanford's surplus plutonium at SRS.

CONCLUSIONS AND OBSERVATIONS

The Department faces many challenges before the surplus plutonium at the Hanford Site can be moved to SRS and then to a final disposal site. While a number of actions have been taken on these issues, none were completely resolved by the completion of our audit. For example, although EM had established a shipping schedule for consolidating Hanford's material, it is dependent on the ability of the Office of Secure Transportation to hire and train additional teams to transport the surplus plutonium. In addition, EM still needs to address DNFSB concerns over the lack of appropriate facilities for long term storage at SRS. Further, EM has yet to complete design on a method to transform the surplus plutonium into a waste form that can be stored at the Yucca Mountain repository. In

particular, we noted that the previously planned immobilization facility at SRS had been cancelled, the yet to be constructed Mixed Oxide Fuel Fabrication Facility has not received regulatory approval, and plans for disposition of the surplus plutonium have not been formally adopted.

EM made the consolidation proposal because it believed that placing the material in one location would be safer, more secure, and less expensive than maintaining it at its current locations. For contingency purposes, the Department plans to maintain the capability for temporary, above ground storage of surplus plutonium at Hanford to accommodate shipping or other delays during consolidation. Richland Operations Office officials also have indicated that based on recent discussions with EM Headquarters that they are no longer considering long term on-site storage of this material.

Not resolving these uncertainties could result in significant expenditures as well as impact accelerated clean-up schedules. Uncertainties regarding processing capabilities and disposition paths may also complicate the Department's effort to satisfy statutory requirements regarding removal of Hanford's surplus material from South Carolina. According to the Fiscal Year 2003 National Defense Authorization Act, the Department must remove from South Carolina an amount equal to the amount of plutonium shipped into the state by January 1, 2017, or face fines of \$1 million per day, up to \$100 million per year.

Since no formal recommendations are being made in this letter report, a formal response is not required. However, to ensure a cost-effective, secure and safe approach for storing and consolidating surplus plutonium, we suggest that the Department closely monitor transportation issues; take action to address the DNFSB storage concerns at SRS; and, develop an alternate plan to address consolidation needs should current plans fail to materialize because of technical or other problems.

SCOPE AND METHODOLOGY

The audit was performed between December 2002 and February 2004, at the Hanford Site in Richland, Washington; the Savannah River Site in Aiken, South Carolina; the Lawrence Livermore National Laboratory in Livermore, California; Los Alamos National Laboratory in Los Alamos, New Mexico; and, the Office of Environmental Management and National Nuclear Security Administration at Germantown, Maryland and Washington D.C. The scope of the audit included a review of stabilization and storage of the Hanford Site surplus plutonium.

To accomplish the audit objective, we reviewed cost data for the security, shipment, and other costs associated with the disposal of the Hanford Site's surplus. We evaluated logistics and timing for shipping surplus plutonium materials. We also reviewed the Record of Decision and Amendments to the *Storage and Disposition of Weapons-Usable Fissile Materials*. Finally, we held discussions with Richland Operation Office and EM program officials.

The audit was conducted in accordance with generally accepted Government auditing standards for performance audits and included tests of internal controls and compliance with laws and regulations to the extent necessary to satisfy the audit objective. Accordingly, we assessed internal controls and performance measures established under the *Government Performance and Results Act of 1993* related to the Department's clean up, stabilization and storage of special nuclear material at the Hanford Site Plutonium Finishing Plant. Because our review was limited, it would not have necessarily disclosed all internal control deficiencies that may have existed at the time of our audit. We did not assess the reliability of computer-processed data because it was not critical to achieving our audit objective.

We discussed the audit results with EM Headquarters, Richland Operations Office and SRS officials on February 19, 2004.

We appreciate the cooperation of your staff throughout the audit.



Rickey R. Hass
Acting Assistant Inspector General
for Audit Services
Office of Inspector General

cc: Deputy Assistant Secretary for Integration and Disposition, EM-2.2
Manager, Richland Operations Office
Team Leader, Audit Liaison Team, ME-1.1
Audit Liaison, ORP

DOE F 1325 R
(4-89)
EFG (07-00)

United States Government

Department of Energy

memorandum

DATE: March 26, 2004
REPLY TO: IG-36 (A03RL015)
SUBJECT: Final Report Package for "Audit of Consolidation of Hanford's Surplus Plutonium-Bearing Material"
TO: Linda J. Snider, Director for Planning and Administration (DPA)

Attached is the required final report package on the subject audit. The pertinent details are:

1. Staff days: Programmed N/A Actual N/A

2. Elapsed days: Programmed 364 Actual 471

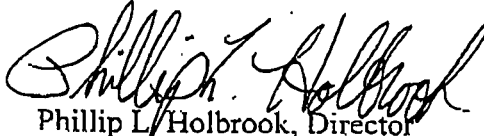
3. Names of OIG audit staff:

Assistant Regional Manager:	<u>Phillip D. Beckett</u>
Team Leader (Audit-Control-Point):	<u>Michael R. Kuklok</u>
Auditor-in-Charge:	<u>Terrence V. Gremel</u>
Audit Staff:	<u>Jolene K. Boughton</u>

4. This report has been discussed with OIG Investigations and Inspections personnel.

Michael Matkowski, Investigations, June 27, 2003
John Vande Sand, Inspections, June 23, 2003

5. Matters to be brought to attention of the IG or AIGA: None


Phillip L. Holbrook, Director
Environmental Audits Division
Office of Inspector General

Attachments:

1. Final Report (3)
2. Monetary Impact Report
3. IGDBMS File Printout

MONETARY IMPACT OF REPORT NO.: OAS-L-04-12


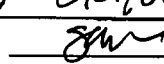
- 1. Title of Audit: Audit of Concolidation of Hanford's Surplus Plutonium-Bearing Material
- 2. Division: Environmental Audit Division (EAD)/ Richland Audit (RLA)
- 3. Project No.: A03RL015
- 4. Type of Audit:

Financial: _____ Performance: X
 Financial Statement _____ Economy and Efficiency X
 Financial Related _____ Program Results _____
 Other (specify type): _____

5. Please report monetary savings identified in the report using applicable columns. Provide additional explanations of audited activities/locations in Section No. 6 - Remarks.

FINDING		COST AVOIDANCE		QUESTIONED COSTS				MGT. POSITION	POTENTIAL BUDGET IMPACT
(A)	(B) Title	(C) One Time	(D) Recurring Amount Per Year	(E) Questioned	(F) Unsupported	(G) Unresolved	(H) Total (E)+(F)+(G)	(I) C-Concur N=Noncon U-Undec	(J) Y=Yes N=No
	N/A								
TOTALS--ALL FINDINGS									

6. Remarks: N/A

7. Contractor: None
 8. Contract No.: None
 9. Task Order No.: None
 10. Approvals:  3/31/04
 Division Director/Date: _____
 Technical Advisor & Date:  _____

Audit Project Office Summary (APS)

Report run on:

March 31, 2004 3:31 PM

Audit#: A03RL015 Ofc: RLA Title: PLUTONIUM FINISHING PLANT AT THE HANFORD SITE

**** Milestones ****

	Planned	End of Survey	Revised	Actual
Entrance Conference:.....	01-OCT-02		11-DEC-02	11-DEC-02
Survey:.....			03-MAR-03	03-MAR-03
Draft Report:.....	13-JUN-03		10-MAR-03	
Completed (With Report):..	30-SEP-03		26-MAR-03	26-MAR-04 (R)
-----Elapsed Days:	364			471

Elap. Less Susp:

Date Suspended: Date Terminated:
 Date Reactivated: Date Cancelled:
 DaysSuspended(Cur/Tot): () Report Number: OAS-L-04-12
 Rpt Title: Report Type: LTR LETTER REPORT
 AUDIT OF CONSOLIDATION OF HANFORD'S SURPLUS PLUTONIUM-BEARING MATERIAL.

**** Audit Codes and Personnel ****

Class: PER PERFORMANCE
 Program: EM1 Not Found
 MgtChall: 032 ENVIRONMENTAL CLEANU
 Site: SSA SINGLE-SITE AUDIT AD: 327 BECKETT
 SecMiss: ENV ENVIRONMENTAL QUALIT AIC: 431 GREMEL
 PresInit: IFP IMPROVED FINANCIAL P Team Ldr: 546 KUKLOK
 Tech Adv: 432 GAMAGE

**** Task Information ****

Task No:
 Task Order Dt: CO Tech. Rep:
 Orig Auth Hrs: Orig Auth Costs:
 Current Auth: Current Auth Cost:
 Tot Actl IPR Hr: Tot Actl Cost:

**** Time Charges ****

Emp/Cont Name	Numdays	Last Date
NIELSEN, A	1.1	22-MAR-03
KIRKHAM, J	4.2	24-JAN-04
KUKLOK, M	26.4	06-MAR-04
BOUGHTON, J	148.5	21-FEB-04
GREMEL, T	189.4	06-MAR-04
Total:	369.6	

Audit Project Office Summary (APS)

Report run on:

March 31, 2004 3:31 PM

Page 2

**** Keywords ****

COST
 DOE
 HANFORD
 OFFICE OF SECURE TRANSPORTATION
 PLUTONIUM FINISHING PLANT
 REDUCE/REDUCTION
 RICHLAND OPERATIONS OFFICE
 SAVINGS
 STABILIZATION
 STUDY
 SURPLUS PLUTONIUM
 WEAPONS-USABLE

**** Location Information ****

<u>Loc Code</u>	<u>Description</u>
HSF	HANFORD SITE FACILITY - R
LAO	LOS ALAMOS AREA OFFICE, L
RFC	ROCKY FLATS PLANT, ROCKY
SRO	SAVANNAH RIVER OPERATIONS

**** Finding Information ****

<u>Find#</u>	<u>Title</u>	<u>Type</u>	<u>Amount</u>	<u>Yrs</u>	<u>Bud</u>	<u>Mgt</u>	<u>Dept</u>	<u>Dept</u>	<u>Dept</u>
					<u>Imp</u>	<u>Pos</u>	<u>Pos</u>	<u>Amount</u>	<u>Date</u>

Audit Project Office Summary (APS)

Report run on:

March 31, 2004 3:31 PM

Page 3

Audit History

Audit No: A03RL015

History Date: 31-MAR-04

History Text:

PB/ ENTERED COMPLETED WITH REPORT DATE.

AUDIT DATABASE INFORMATION SHEETProject No.: A03RL015

1. Title of Audit: Audit of Consolidation of Hanford's Surplus Plutonium-Bearing Material
2. Report No./Date March 26, 2004
3. Management Challenge Area: 013
4. Presidential Mgmt Initiative: N/A
5. Secretary Priority/Initiative: ENV
6. Program Code: EM-1
7. Location/Sites: RL, SRS, LANL, LLNL
8. Finding Summary:

The Department faces many challenges before the surplus plutonium at the Hanford Site can be moved to SRS and then to a final disposal site. While a number of actions have been taken on these issues, none were completely resolved by the completion of our audit. For example, although EM had established a shipping schedule for consolidating Hanford's material, it is dependent on the ability of the Office of Transportation Safeguards to hire and train additional teams to transport the surplus plutonium. In addition, EM still needs to address DNFSB concerns over the lack of appropriate facilities for long term storage at SRS. Further, EM has yet to complete design on a method to transform the surplus plutonium into a waste form that can be stored at the Yucca Mountain repository. In particular, we noted that the immobilization facility at SRS has been cancelled, the planned Mixed Oxide Fuel Fabrication Facility has not received regulatory approval, and plans for disposition of the surplus plutonium have not been formally adopted.

EM made the consolidation proposal because it believed that placing the material in one location would be safer, more secure, and less expensive than maintaining it at its current location. For contingency purposes, the Department plans to maintain the capability for temporary, above ground storage of surplus plutonium at Hanford to accommodate shipping or other delays during consolidation. Richland Operations Office officials also have indicated that based on recent discussions with EM Headquarters that they are no longer considering long term on-site storage of this material.

Not resolving these uncertainties could result in significant and unnecessary expenditures as well as impact accelerated clean-up schedules. Uncertainties regarding processing capabilities and disposition paths may further complicate the Department's effort to satisfy statutory requirements regarding removal of Hanford's surplus material from South Carolina. According to the Fiscal Year 2003 National Defense Authorization Act, the Department must remove from South Carolina an amount equal to the amount of plutonium shipped into the state by January 1, 2017, or face fines of \$1 million per day, up to \$100 million per year.

9. Keywords: Surplus Plutonium Hanford
Stabilization Richland Operations Office
Weapons-Usable Reduce/Reduction
Plutonium Finishing Plant Savings
Cost Study
DOE Office of Secure Transportation

DOE
DOE-Richland
Effective/Effectiveness
Environmental Management (EM)
Federal

Office of Scure Transportation
DNFSB
NNSA
Top-to-Bottom Review
Record of Decision