

# Spent Nuclear Fuel (SNF) Stabilization and Disposition Storage Operations (HQ-0012X); and SNF Stabilization and Disposition (RL-0012)

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*Debris uncovered during weasel pit sludge vacuuming operations*



*Operating a hydraulic cutting tool to cut fuel canister racks in K East*



*Large Diameter Container #1 arriving at T Plant on January 5, 2005*

## Overview

This section addresses work in Project Baseline Summary (PBS) HQ-0012X, *Spent Nuclear Fuel Stabilization and Disposition Storage Operations*; and RL-0012, *Spent Nuclear Fuel Stabilization and Disposition*.

NOTE: Unless otherwise noted, all information contained herein is as of the end of December 2004.

## Notable Accomplishments

### Spent Nuclear Fuel (SNF) Stabilization and Disposition Storage Operations (PBS HQ-0012X)

**Site-Wide Fuel:** SNF received the 33rd Interim Storage Cask of Fast Flux Test Facility fuel at the 200 Area Interim Storage Area.

### SNF Stabilization and Disposition (PBS RL-0012)

**Sludge Treatment:** The first of four Large Diameter Containers (LDCs) containing 0.5 cubic meters (m<sup>3</sup>) of North Load Out Pit (NLOP) sludge was shipped to T Plant on January 5, 2005. K East Basin water visibility was restored and 4m<sup>3</sup> of sludge was containerized, leaving 1m<sup>3</sup> to go in the Weasel Pit sludge collection effort. Removal of all excess pole tools (212) from K West was completed. The booster pump station design for the K East to K West sludge transfer system was completed and released for fabrication. Sludge retrieval proof-of-principle testing was also completed.

**Multi-Canister Overpack (MCO) Welding at the Canister Storage Building:** FH welded and "N" stamped 15 MCOs during December. As of January 24, 2005, a cumulative total of 306 MCOs were welded and "N" stamped, leaving 95 MCOs to be welded.

**Deactivation and Decommissioning:** The shredder and wash station were received in support of debris removal. RL approval to grout the K West Discharge Chute was received on December 20, 2004.

## Issues

Shipment of canisters retrieved from the basins to the Environmental Restoration Disposal Facility (ERDF) were suspended in October due to questions regarding the classification of waste. Subsequent investigation and sampling has confirmed that the majority of waste shipped to ERDF is low level; however, coupon samples taken from some of the canisters indicate the possibility of a higher transuranic content. Preliminary results show the need for further analysis of approximately eight boxes. In the meantime, FH submitted, and RL approved on January 21, 2005, a Justification for Continued Operations (JCO), which allows continued storage of canisters at the 100K area while awaiting resumption of shipments to ERDF.

Issuance of the public review and comment documentation in support of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Record of Decision (ROD) amendment was made on January 19, 2005, and the public review and comment phase is scheduled to complete on February 22, 2005. Modifications at T-Plant for NLOP sludge treatment can proceed with Washington State Department of Health (DOH) approval of a Notice of Construction (NOC). Sludge treatment operations will be dependent upon the issuance of an approved CERCLA ROD amendment expected in May 2005.

Sludge and debris removal activities in the K East Basin Weasel Pit revealed several surface cracks in the pit wall. FH initiated an investigation in order to characterize these cracks and evaluate the possibility of leaks or loss of structural integrity. The final report was issued on January 21, 2005, and the evaluation results show no evidence of water leakage, structural weakness, or other necessity to stop cleanup work in the basin.

## FY 2005 Funds vs. Spend Forecast (\$M)

		Projected FY 2005 Funding	FY 2005 Fiscal Year Spend Forecast	Variance
HQ-0012X	SNF Stabilization and Disposition Storage Ops	\$ 2.7	\$ 2.6	\$ 0.1
RL-0012	SNF Stabilization & Disposition	\$ 129.9	\$ 129.9	\$ 0.0
<b>Total</b>		<b>\$ 132.6</b>	<b>\$ 132.5</b>	<b>\$ 0.1</b>

## FY 2005 Schedule/Cost Performance (\$M)

		Budgeted Cost of Work Scheduled	Budgeted Cost of Work Performed	Actual Cost of Work Performed	Schedule Variance \$	Schedule Variance %	Cost Variance \$	Cost Variance %	Budget At Completion
HQ-0012X	SNF Stabilization and	\$0.8	\$0.4	\$0.3	-\$0.5	-55.4%	\$0.1	13.6%	\$2.6
RL-0012	SNF Stabilization & Disposition	\$27.7	\$24.1	\$31.8	-\$3.7	-13.2%	-\$7.8	-32.3%	\$119.6
<b>Total</b>		<b>\$28.5</b>	<b>\$24.4</b>	<b>\$32.2</b>	<b>-\$4.1</b>	<b>-16.9%</b>	<b>-\$7.7</b>	<b>-31.6%</b>	<b>\$122.2</b>

**Schedule Performance (-\$4.1M/-16.9%):** The variance is due to:

- (HQ-0012X) Preparation activities supporting the shipment of Fast Flux Test Facility fuel from the Plutonium Finishing Plant to the Canister Storage Building are on hold pending DOE's possible direction to send the fuel to Idaho National Engineering Laboratory (-\$0.5M).
- North Load Out Pit sludge collection and treatment (-\$1.5M).
- Delays in K East basin sludge containerization (-\$1.2M).
- Delays in K West Transfer System and Fuel Retrieval (BNFL) (-\$2.9M).
- Delayed receipt of hydrolasing tools and miscellaneous D&D (-\$0.6M).

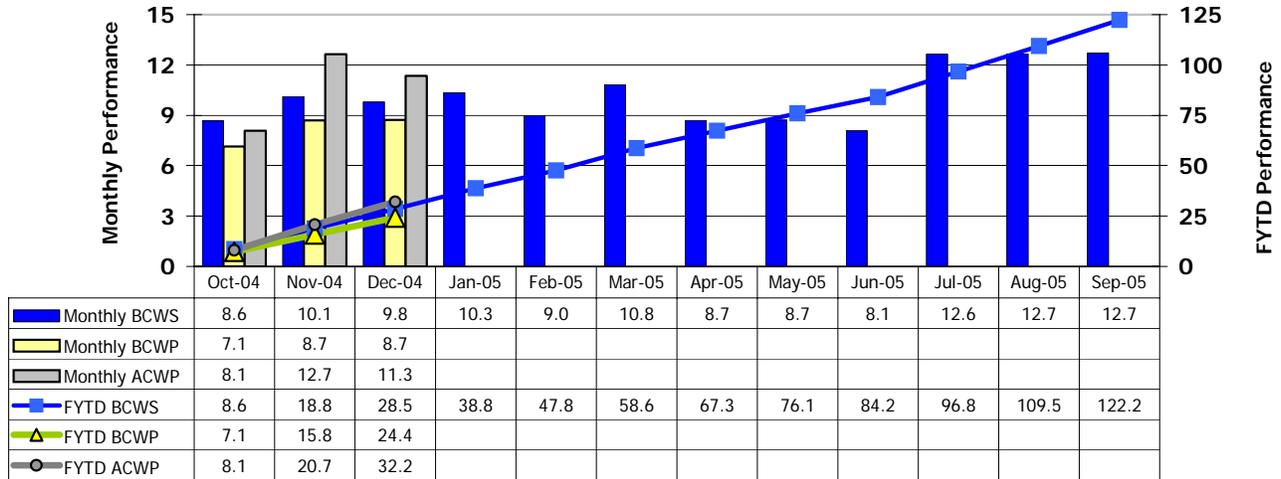
The unfavorable schedule variance is partially offset by a favorable schedule variance for completing MCO movement activities (+\$1.8M) and sludge activities (\$+0.9M) that were budgeted to be completed in FY 2004.

**Cost Performance (-\$7.7M/-31.6%):** The variance is due to:

- Labor overruns to complete fuel movement (-\$1.3M).
- Increased Ion Exchange Module replacement frequency to correct water clarity issues (-\$0.3M).
- Labor overruns in Safe and Compliant activities due to underestimated requirements and the delay in ramp-down from fuel removal activities (-\$2.5M).
- Increased cost in Sludge Retrieval activities (K East Containerization and Sludge Transfer System) due to slower progress resulting in higher labor costs for the work being completed. Additional materials such as cameras, tools, and filters have been procured in an attempt to resolve water visibility problems. (-\$3.6M).

## FY 2005 Schedule/Cost Performance, continued

### Performance Analysis FYTD and Monthly (\$M)



## Milestone Achievement

Number	Milestone Title	Type (TPA/PI/DNFSB)	Due Date	Actual Date	Forecast Date	Status / Comments
M-34-18B (S00-00-902) (S10-05-012)	Complete removal of all K Basin SNF	TPA/DNFSB/ PI	7/31/04	10/15/04		Complete
DNFSB 2001-1 (S10-05-012)	Remove SNF from K Basins	DNFSB	7/31/04	10/12/04		Complete
RL-12-1.aa (S10-99-960)	Complete SNF Removal from K West	PI	8/31/04	10/15/04		Complete
RL12-1.cd (S10-99-977)	Initiate Full Scale K East Water Removal	PI	9/30/04	9/19/04		Complete
M-034-33A (S10-05-009)	Initiate Sludge Containerization	TPA	10/31/04	10/31/04		Complete
DNFSB 121 (S10-05-013)	Select Sludge Treatment Method	DNFSB	11/30/04	11/15/04		Complete
RL-12-1.c (S10-99-966)	Complete K East Discharge Chute Immobilization	PI	12/30/04	8/20/04		Complete
DNFSB 119E (S10-05-014)	Complete K East Sludge Consolidation	DNFSB	12/31/04		3/17/05	Behind Schedule
RL-12-1.ba (S10-99-083)	Treat 1 Cubic Meter of Sludge	PI	2/28/05		5/26/05	Behind Schedule
M-034-33B (S10-05-018)	Complete K East Sludge Containerization	TPA	3/1/05		3/17/05	Behind Schedule - In Jeopardy
S10-99-80	Complete MCO Welding	PI	6/30/05		7/31/05	Behind Schedule
DNFSB 120E (S10-05-015)	Complete K East Basin Sludge Removal	DNFSB	7/31/05			On Schedule
RL-12-1.b (S10-99-082)	Transfer K East Sludge to K West Containers	PI	7/31/05			On Schedule
RL-12-1.bb (S10-99-963)	Transfer Found Fuel and Fuel Scrap from K East to K West	PI	7/31/05			On Schedule
M34-21-T1 (S10-99-951)	Initiate Full Scale K West Basin Water Removal	TPA	12/31/05			On Schedule
RL-12-1.cg (S10-99-973)	Immobilize K West Discharge Chute	PI	12/31/05			On Schedule
M-034-34 (S10-05-010)	Complete Removal of K East Sludge	TPA	1/31/06			On Schedule
RL-12-1.ch (S10-99-976)	Complete Removal of Contaminated Fuel Canisters	PI	1/31/06			On Schedule
RL-12-1.ce (S10-99-978)	Complete K East Water Removal	PI	1/31/06			On Schedule
DNFSB 119W (S10-05-016)	Complete K West Sludge Containerization	DNFSB	2/28/06			On Schedule
RL-12-1.ca (S10-99-967)	Encapsulate 3 K East Bays	PI	2/28/06			On Schedule
RL-12-1.bd (S10-99-965)	Commencement of Floor and Canister Sludge Treatment	PI	3/30/06			On Schedule
RL-12-1.cb (S10-99-968)	Remove K East Superstructure	PI	3/30/06			On Schedule
M-034-35 (S10-05-011)	Containerize K West Sludge	TPA	6/30/06			On Schedule
RL-12-1.cc (S10-99-969)	Complete First K East Basin Section Disposal	PI	7/31/06			On Schedule
RL-12-1.ci (S10-99-971)	Decon/Immobilize K West Basin Wall (7600 sq. ft.)	PI	8/31/06			On Schedule
RL-12-1.bc (S10-99-081)	Remove Found Fuel and Scrap	PI	9/30/06			On Schedule
RL-12-1.cf (S10-99-972)	Complete K East Basin Removal	PI	9/30/06			On Schedule

**NOTE:** HQ-0012X has no milestones. Milestones and due dates are derived from the approved Tri-Party Agreement Change Request M-34-04-01.