

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

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*Center bay floor vacuumed in preparation for hose-in-hose container installation*



*Workers complete removal of 7,211 empty canisters in K West*

## 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 May 2005.

## Notable Accomplishments

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

**Sludge Retrieval and Treatment:** Reached 75 percent completion of sludge collection in K East Basin (31.62m<sup>3</sup> of 42m<sup>3</sup>). Completed filling second sludge container and completed installation of liners 103 and 104. Removed 100 percent of aluminum and stainless steel canisters from K West Basin (7,211 total).

**Multi-Canister Overpack (MCO) Welding at the Canister Storage Building (CSB):** Completed welding of all available (379) Multi-canister Overpacks (MCOs) on May 17, 2005, and all Shippingport Fuel Canisters (18) on June 16, 2005. Work was completed 14 days ahead of schedule. Seven MCOs remain in the monitoring program. The "N" stamp welding campaign maintained a flawless record of zero defects throughout the three-year effort.

## Issues

**Sludge Containerization:** K East Basin sludge collection is behind schedule, slowed by excessive debris, vacuum system inefficiency and lack of visibility. FH employed a revised strategy to relocate/remove additional debris and racks from the floor to create an improved sludge collection rate. Sludge collection from the North Load-Out Pit (NLOP) was completed with the fourth of four Large Diameter Containers being filled and is awaiting shipment to T-Plant. A third vacuuming system will be introduced to the basin, utilizing components employed in the NLOP sludge collection. The forecast completion for Bulk Containerization (TPA M-34-33B, due March 1, 2005) has moved to August 30, 2005.

**K East/K West Transfer:** Work on the fabrication of the K East to K West Sludge Transfer subproject is progressing behind schedule and FH is forecasting a January 2006 completion of DNFSB milestone 2001-1-CN-120E, *Complete Removal of Containerized Sludge from the K East Basin*, due July 31, 2005. RL conducted a schedule review in preparation for submittal of a notification to the DNFSB that the milestone will be missed. Since the last report, FH completed the subcontract with British Nuclear Group America (BNGA) and assumed direct oversight of the fabrication subcontractor. Fabrication and delivery progress has improved with the expectation that all materials will be delivered by the end of July 2005.

**2005 Budget/Funding:** The Project's fiscal year end spend forecast has not changed significantly this reporting period; however, the spend rate is trending above the funding target set by FH. Actions taken to reduce the trend included the further deceleration of the sludge treatment subcontract (\$3 million [M] reduction in subcontract authorization) and the decision to self-perform the remainder of the subcontract with the sludge transfer system lead subcontractor. The major project cost vulnerability (potential increases) is the risk of not completing K East sludge containerization by the end of August as presently forecast.

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

		Projected FY 2005 Funding	FY 2005 Fiscal Year Spend Forecast	Variance
HO-0012X	SNF Stabilization and Disposition Storage Ops	\$ 0.9	\$ 0.9	\$ 0.0
RL-0012	SNF Stabilization & Disposition	\$ 130.1	\$ 140.2	\$ -10.1
<b>Total</b>		<b>\$ 131.0</b>	<b>\$ 141.1</b>	<b>\$ -10.1</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
HO-0012X	SNF Stabilization and	\$0.8	\$0.8	\$0.8	\$0.0	0.0%	\$0.0	2.2%	\$0.9
RL-0012	SNF Stabilization & Disposition	\$74.7	\$70.9	\$100.8	-\$3.9	-5.2%	-\$30.0	-42.3%	\$120.4
<b>Total</b>		<b>\$75.4</b>	<b>\$71.6</b>	<b>\$101.6</b>	<b>-\$3.9</b>	<b>-5.4%</b>	<b>-\$30.0</b>	<b>-41.8%</b>	<b>\$121.3</b>

Numbers are rounded to the nearest \$0.1M and include the closure services allocation.

**Schedule Performance (-\$3.9M/-5.4%):** The variance is due to:

- North Loadout Pit sludge collection and treatment (-\$3.0M).
- Delays in K East Basin sludge containerization (-\$0.3M).
- Delays in K West Transfer System and Fuel Retrieval (BNGA) (-\$5.1M).
- Delayed receipt of hydrolasing tools and miscellaneous D&D (-\$2.0M).

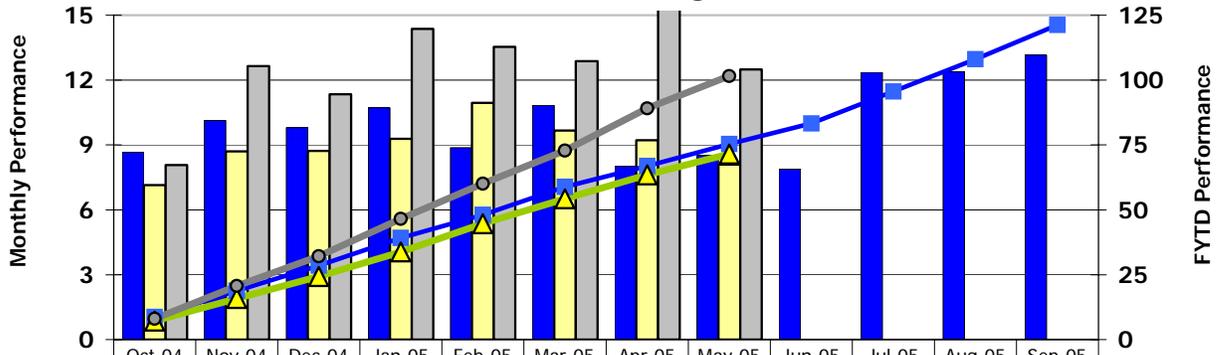
The unfavorable schedule variance is partially offset by a favorable schedule variance for completing MCO movement activities that were budgeted to be completed in FY 2004 (+\$1.6M), completing sludge carryover activities (\$+1.0M), MCO welding ahead of schedule (+\$.2M), and Sludge Treatment acceleration from FY 2006 (+\$3.7M).

**Cost Performance (-\$30.0M/-41.8%):** The variance is due to:

- Overruns developed in completion of fuel movement (-\$1.5M).
- Unplanned Ion Exchange Module procurement required due to water clarity issues requiring increased replacement frequency (-\$0.6M).
- Labor/material overruns in Safe and Compliant activities due to underestimated requirements and the delay in ramp-down from fuel removal activities (-\$3.7M).
- Increased cost in Sludge Retrieval activities (K East Containerization, Sludge Transfer System, K West Retrieval, etc.) due to slower progress resulting in higher labor costs for the work being completed. Procurement of additional materials such as cameras, tools, and filters to resolve water visibility problems (-\$25.9M), and D&D labor rates and technical requirements (-\$2.1M).
- Offset by efficiencies at CSB (+\$1.0M) & Closure Services (+\$.1M), temporary underruns in NLOP until the BCR to transfer work scope to Waste Management is completed (+\$2.0M), and labor underruns in sludge treatment (+\$0.7M).

## FY 2005 Schedule/Cost Performance, continued

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



	Oct-04	Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05
Monthly BCWS	8.6	10.1	9.8	10.7	8.9	10.8	8.0	8.5	7.9	12.4	12.4	13.2
Monthly BCWP	7.1	8.7	8.7	9.3	11.0	9.7	9.2	8.1				
Monthly ACWP	8.1	12.7	11.3	14.4	13.5	12.9	16.2	12.5				
FYTD BCWS	8.6	18.8	28.5	39.2	48.1	58.9	66.9	75.4	83.3	95.7	108.0	121.3
FYTD BCWP	7.1	15.8	24.4	33.7	44.7	54.3	63.5	71.6				
FYTD ACWP	8.1	20.7	32.2	46.5	60.1	72.9	89.1	101.6				

## Milestone Achievement

Number	Milestone Title	Type (TPA/PI/DNFSB)	Due Date	Actual Date	Forecast Date	Status / Comments
M-034-18B (S00-00-902) (S10-05-012)	Complete removal of all K Basin SNF	TPA/DNFSB/ PI	07/31/04	10/15/04		Complete
DNFSB 2001-1 (S10-05-012)	Remove SNF from K Basins	DNFSB	07/31/04	10/12/04		Complete
RL-12-1.aa (S10-99-960)	Complete SNF Removal from K West	PI	08/31/04	10/15/04		Complete
RL12-1.cd (S10-99-977)	Initiate Full Scale K East Water Removal	PI	09/30/04	09/19/04		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	08/20/04		Complete
DNFSB 119E (S10-05-014)	Complete K East Sludge Consolidation	DNFSB	12/31/04		08/30/05	Behind Schedule
RL-12-1.ba (S10-99-083)	Treat 1 Cubic Meter of Sludge	PI	02/28/05		09/30/05	Behind Schedule
M-034-33B (S10-05-018)	Complete K East Sludge Containerization	TPA	03/01/05		08/30/05	Behind Schedule
S10-99-80	Complete MCO Welding	PI	06/30/05	06/16/05		Complete
DNFSB 120E (S10-05-015)	Complete K East Basin Sludge Removal	DNFSB	07/31/05		01/31/06	Behind Schedule
RL-12-1.b (S10-99-082)	Transfer K East Sludge to K West Containers	PI	07/31/05		01/31/06	Behind Schedule
RL-12-1.bb (S10-99-963)	Transfer Found Fuel and Fuel Scrap from K East to K West	PI	07/31/05			On Schedule
M34-21-T1 (S10-99-951)	Initiate Full Scale K West Basin Water Removal	TPA	12/31/05		10/30/05	Ahead of Schedule
RL-12-1.cg (S10-99-973)	Immobilize K West Discharge Chute	PI	12/31/05		11/30/05	Ahead of Schedule
M-034-34 (S10-05-010)	Complete Removal of K East Sludge	TPA	01/31/06			On Schedule
RL-12-1.ch (S10-99-976)	Complete Removal of Contaminated Fuel Canisters	PI	01/31/06	06/21/05		Complete
RL-12-1.ce (S10-99-978)	Complete K East Water Removal	PI	01/31/06			On Schedule
DNFSB 119W (S10-05-016)	Complete K West Sludge Containerization	DNFSB	02/28/06			On Schedule
RL-12-1.ca (S10-99-967)	Encapsulate 3 K East Bays	PI	02/28/06			On Schedule
RL-12-1.bd (S10-99-965)	Commencement of Floor and Canister Sludge Treatment	PI	03/30/06		09/30/06	Behind Schedule
RL-12-1.cb (S10-99-968)	Remove K East Superstructure	PI	03/30/06			On Schedule
M-034-35 (S10-05-011)	Containerize K West Sludge	TPA	06/30/06			On Schedule
RL-12-1.cc (S10-99-969)	Complete First K East Basin Section Disposal	PI	07/31/06			On Schedule
RL-12-1.ci (S10-99-971)	Decon/Immobilize K West Basin Wall (7600 sq. ft.)	PI	08/31/06			On Schedule
RL-12-1.bc (S10-99-081)	Remove Found Fuel and Scrap	PI	09/30/06			On Schedule
RL-12-1.cf (S10-99-972)	Complete K East Basin Removal	PI	09/30/06			On Schedule

NOTE: HQ-0012X has no milestones.