

# SNF Stabilization and Disposition (RL-0012)

M. W. Peres, Vice President of K Basins Closure  
Project/(509) 373-4815

D. G. Ruscitto, Vice President of Sludge Treatment  
Project/(509) 376-1998



*Settler Tube mock-up in preparation for sampling*



*Sorting debris in K East*



*Final Pass Vacuuming in K West Facility*

## Overview

This section addresses work in Project Baseline Summaries (PBS) RL-0012, *Spent Nuclear Fuel (SNF) Stabilization and Disposition*.

NOTE: Unless otherwise noted, all information contained herein is as of the end of July 2007.

## Notable Accomplishments

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

- K East D&D Project –
  - Completed transloading of 6.5 debris bins.
  - Completed incorporation of opportunities identified in Value Engineering (VE) into schedule revision; use of Hydrolase process avoided, reducing overall performance risk.
- Hose In Hose (HIH) Transfer –
  - Permanently disconnected electrical power to HIH pumps in K East, K West, and booster stations, and removed booster station pumping power generator.
- K West –
  - Completed bulk sludge containerization ahead of schedule.
  - Commenced debris removal in North Loadout Pit (NLOP).
  - Designed and started procurement of grafoil collection system.
  - Initiated “Final Pass” vacuuming.
- Legacy Fuel –
  - Started preventative maintenance for Multi-Canister Overpack (MCO) equipment.
  - Implemented baseline update to include MCO processing in FY 2008 into baseline.

### Sludge Treatment Project (STP):

- Developed the new WBS and draft schedule for work scope to achieve Critical Decision (CD)-1.
- Supported RL deliverable to Federal Budget Update reflecting Alternative Path Technology and implementation.
- Performed failure-mode effects analysis (FMEA) on usable STP designed systems.
- Conducted Technology Readiness Assessment (TRA) against STP project systems (first project in FH).
- Conducted anaerobic uranium metal conditioning testing at the Pacific Northwest National Laboratory (PNNL).

## Issues

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

- **K Basins Closure Project**
  - Personnel Transfers: potential impacts to remaining work through loss of qualified people
    - o Opportunity being provided to KBC employees to move to other projects.
    - o Optimize use of subcontracted resources.
  - Opportunity: Implementation of less complex approaches to K East D&D identified in VE Session.
- **STP received a draft letter from RL providing additional direction for the disposition of KOP sludge, to be handled as spent nuclear fuel.**
  - Mitigation In Progress:
    - o Alternative treatment analysis underway.
    - o Meetings with Waste Isolation Pilot Program (WIPP) representatives to understand waste acceptance criteria.
    - o Assessing overall PBS RL-0012 priorities.

### FY 2007 Funds vs. Spend Forecast (\$M)

	Projected FY 2007 Funding	FY 2007 Fiscal Year Spend Forecast	Variance
RL-0012 SNF Stabilization & Disposition	\$ 137.5	\$ 123.5	\$ 14.0

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

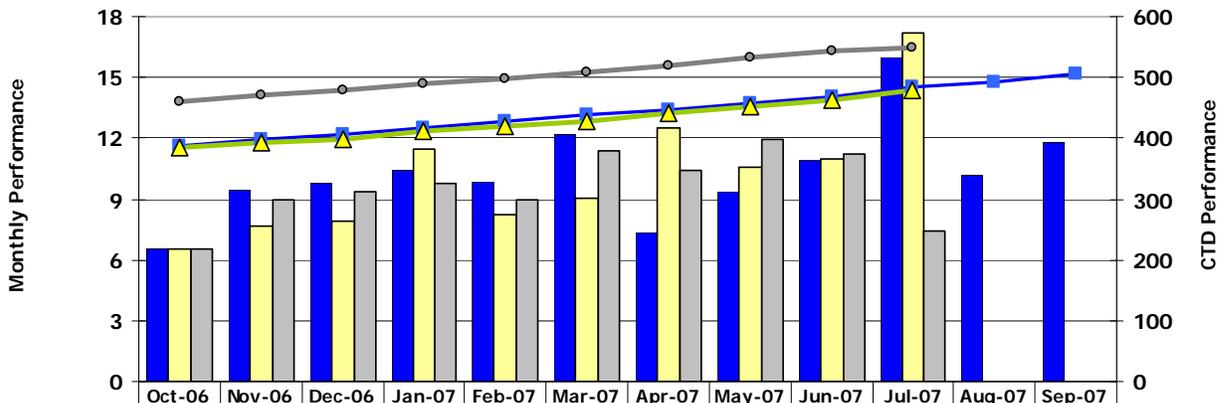
SNF Stabilization & Disposition	Budgeted Cost of Work Scheduled	Budgeted Cost of Work Performed	Actual Cost of Work Performed	Schedule Variance \$	Schedule Variance %	Cost Variance \$	Cost Variance %	Budget At Completion (FY07/CTD)
Current Period (Month)	\$16.0	\$17.2	\$7.4	\$1.2	7.6%	\$9.7	56.7%	\$123.8
Cumulative-to-Date (FY 2004 - Present)	\$483.5	\$479.5	\$550.2	-\$4.0	-0.8%	-\$70.7	-14.8%	\$582.3

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

- **CTD Schedule Performance (-\$4.0M/-0.8%):** Unfavorable SV is due to delays in Legacy Fuel work scope and K West Floor and Pit Sludge Retrieval (FPSR) system operations; delays are due to additional debris removal activities in the basins and difficulties experienced in HIH transfer. Delays in the STP in design review, procurement and construction activities are due to decision to implement the Critical Decision process into design requirements.
- **CTD Cost Performance (-\$70.7M/-14.8%):** The unfavorable CV is primarily due to problems encountered in design, implementation, startup, and operation of spent fuel removal, sludge containerization, transfer, and treatment systems. System complexity and requirements were underestimated. Most of the cost variances were incurred prior to FY 2006.

## Schedule/Cost Performance (\$M)

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



	Oct-06	Nov-06	Dec-06	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07
Monthly BCWS	6.5	9.5	9.8	10.4	9.8	12.2	7.4	9.4	10.9	16.0	10.1	11.8
Monthly BCWP	6.6	7.7	7.9	11.5	8.2	9.0	12.5	10.6	10.9	17.2		
Monthly ACWP	6.5	9.0	9.4	9.8	9.0	11.4	10.4	12.0	11.2	7.4		
CTD BCWS	388.1	397.6	407.3	417.8	427.6	439.8	447.2	456.6	467.5	483.5	493.6	505.4
CTD BCWP	383.9	391.6	399.5	411.0	419.2	428.2	440.7	451.3	462.3	479.5		
CTD ACWP	460.7	469.7	479.0	488.8	497.8	509.2	519.5	531.5	542.7	550.2		

## Milestone Achievement

Number	Milestone Title	Type (TPA/PI/DNFSB)	Due Date *	Actual Date	Forecast Date	Status / Comments
M-034-33B (S10-05-018)	Complete K East Sludge Containerization	TPA	03/01/05	10/20/06		Complete
DNFSB 119E (S10-05-014)	Complete K East Bulk Sludge Consolidation	DNFSB	10/31/06	10/20/06		Complete
M-034-34 (S10-05-010)	Complete Removal of K East Sludge	TPA	05/31/07	05/31/07		Complete
DNFSB 120E (S10-05-015)	Complete K East Basin Containerized Sludge Removal	DNFSB	05/31/07	05/31/07		Complete
DNFSB 122E	K East Final Pass Sludge Removed	DNFSB	05/31/07	05/31/07		Complete
M-034-35a (S10-05-011)	Containerize K West Bulk Sludge	TPA	07/31/07	07/03/07		Complete
DNFSB 119W (S10-05-016)	Complete K West Bulk Sludge Containerization	DNFSB	07/31/07	07/03/07		Complete
M-034-35b (S10-05-011)	Complete K West Final Pass	TPA	01/31/08		12/26/07	Ahead of Schedule

\* DNFSB dates reflect Implementation Plan update, TPA dates reflect change package M-34-05-04, forecast dates are current working level schedules.