

SNF Stabilization and Disposition (RL-0012)

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*New Hose-in-Hose
Inlet Strainer*

*Workers in Booster
Station #2 for the Hose-
in-Hose System*



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 January 2007.

Notable Accomplishments

SNF Stabilization and Disposition (PBS RL-0012)

- **K East Containerization:** Completed final pass vacuuming of 226 cubicles in the center bay and completed demonstration of the Qualified Process (Center Bay was completed on February 11, 2007). The Decontamination and Decommissioning (D&D) group completed the Authorization Basis review for grouting hazards and issued a white paper on remaining sludge characterization (favorable effect on endpoint).
- **K West Retrieval:** Completed vacuuming in the Dummy Elevator Pit channel, completed removal of Canister Cleaning Station equipment, and suspended all drain valve covers and east bay racks in preparation for removal.
- **Hose-in-Hose (HIH) Transfer:** Recovered from high vibration shutdown and installed in-line strainers and restarted on January 25, 2007. Developed and implemented investigation and additional recovery actions with re-start date of February 21, 2007.
- **Sludge Treatment Project (STP):**
 - Control Systems
 - Safety Class Programmable Logic Controller (PLC) Programming – 0 percent complete
 - General Service PLC Programming – 20 percent complete
 - Hardwired Safety Class Control System Design – 33 percent complete
 - Equipment Installation Packages – 11 percent complete
 - Performance Incentive (PI) Facility Modification Packages (FMPs)
 - Completed HNF-FMP-06-30300, "Remove CVDF Bay PWC Equipment"
 - 15 PI FMPs were 12 percent complete at time of RL directed hold on new starts
 - Nuclear Safety
 - RL approved Volume 2, Revision 0, of the Preliminary Document Safety Analysis (PDSA) addressing Corrosion System, Assay System, and Mobile Solidification System (MOSS). Approval included direction to hold all new procurements and Cold Vacuum Drying Facility (CVDF) construction starts until successful Critical Decision (CD)-3, "Readiness to Start Construction," review.
 - HIH Lessons Learned
 - Continued temporary assignment of STP staff to support HIH recovery actions and to identify HIH Lessons Learned that may be applicable to STP.

Issues

SNF Stabilization and Disposition (PBS RL-0012)

- **Completion of final pass and post transfer vacuuming is trending behind schedule due to delays in HIH transfers.**

Actions in Progress:

- Re-sequencing of vacuuming activities has improved the completion of final pass vacuuming to April (previously pushed to May).
- Continued debris removal has improved effectiveness of vacuuming rate and cleanliness of result. Very little re-depositing of sludge measured to date.
- Maintaining spare pumps and hose inventory to facilitate quick recovery from debris plugging or pump failure.
- Working to minimize the amount of "post-transfer" vacuuming required by using the additional characterization and actual basin condition information to show less residual curie content at completion of final pass.

- **HIH transfers have been suspended while troubleshooting/recovering booster pumps for high vibration condition. A recovery plan has been formulated, delivered to RL on February 13, 2007, and includes:**

Actions in Progress:

- Determination of root cause and initiation of actions required to return the system to operation as soon as possible, with appropriate modifications.
- System modifications include installation of duplex strainer, additional dilution water at tank outlet, vibration monitoring equipment, modified operating procedures (suction pressure trips), pump seal pressure recharge system. Recovery team established to provide 24/7 coverage that will ensure implementation of recovery plan.
- Obtaining all necessary technical resources to diagnose system performance problems and generate repair actions.
- Contingency planning includes pump replacement with modified impeller design and retrieval of sludge via alternative methods.
- Revised working schedule to incorporate transfer duration and coordinate with K East and K West activities to maintain progress to milestones.
- Replenishing spares inventory to facilitate continued quick repair cycle.
- Provided status notification to RL regarding Tri-Party Agreement (TPA) and Defense Nuclear Facilities Safety Board (DNSFB) milestones at risk on February 8, 2007.

- **FH notified RL on February 8, 2007, that due to the delays in sludge transfer, TPA milestone M-34-34, "Complete Removal of K East Sludge", due May 31, 2007, is at risk. A recovery plan for returning the transfer system to service was submitted to RL on February 13, 2007. This notification also applied to DNFSB milestones 2001-1-120E, "Complete Transferring Containerized Sludge from the K East Basin," and 2001-1-122E, "Complete Transferring Final Pass Sludge from the K East Basin," both due May 31, 2007.**

- **Revisions to the K East, K West, and HIH activities in response to emerging risks/mitigation actions will increase the utilization of Project Management Reserve (PMR) and project funds. (Specific discussion of sludge treatment risks/cost increases included in later section of brief.)**

Actions in Progress:

- Have identified sources of additional funds and or scope adjustments that provide sufficient margin to repair and recover HIH system. Includes the tracking of deferrals and carryover liability.
- Close coordination with K Basins Closure (KBC) functional leads in order to identify all personnel and material expenditures.
- Continuous discussion with RL regarding scope deferrals or additional funds (several direct discussions/meetings).

Issues, continued

Sludge Treatment:

- **Impact of RL's January 29, 2007, directed hold on new procurements and CVDF construction starts until successful RL CD-3, "Readiness to Start Construction" review.**

Actions in Progress:

- o Dialog with RL to reach agreement on requirements and schedule for successful CD-3 review.
- o Planning initiated for preparation of baseline update required for RL CD-3 review.
- o Impact of RL-directed changes (use of Design Basis Accident [DBA] analysis for safety basis; reduction in T Plant FY 2007 support for readiness to receive drums; final Remote Handled Transuranic Waste Authorized Methods for Payload Control [RH-TRAMPAC]; delayed RL approval of Volume 2, Revision 0 of STP PDSA; and December 2006 construction halt, etc.).
- o Impacts will be addressed in baseline update required for CD-3 review.
- o Impacts from need to revise British Nuclear Group America (BNGA) Control System design concept to comply with DOE CRD 420.1A requirements for Safety Class/Safety Significant control systems redundancy, independence, and separation.
- o BNGA design of hardwired Safety Class/Safety significant control systems in parallel to Safety Class PLC on schedule for April 2007 completion.
- o Impacts from STP resources diverted to support HIH recovery efforts.
- o Impacts will be addressed in baseline update required for CD-3 review.

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

	Projected FY 2007 Funding	FY 2007 Fiscal Year Spend Forecast	Variance
RL-0012 SNF Stabilization & Disposition	\$ 134.0	\$ 130.3	\$ 3.7

FY 2007 Schedule/Cost Performance (\$M)

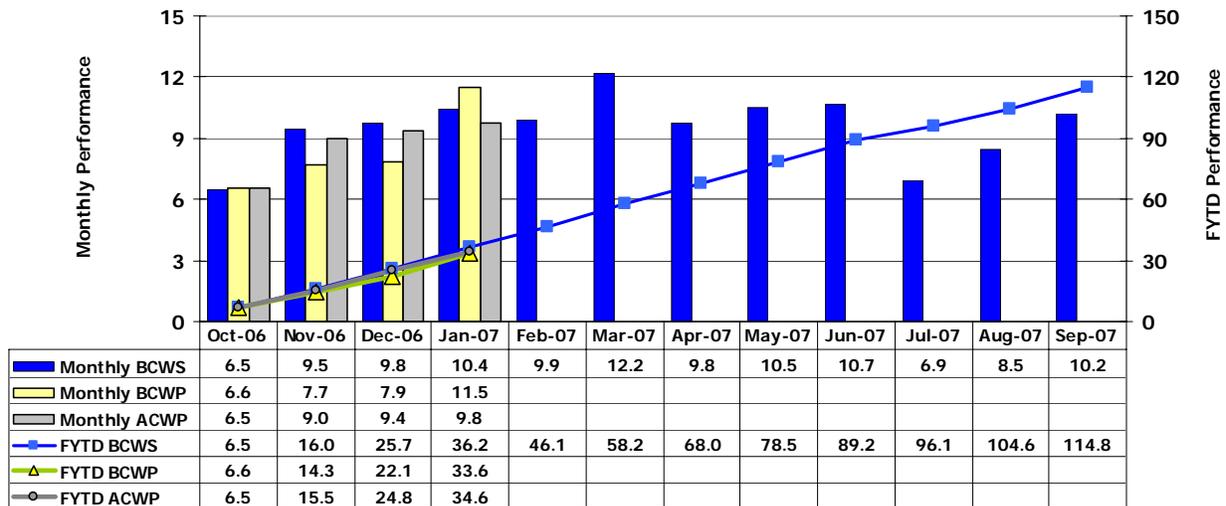
	Budgeted Cost of Work Scheduled	Budgeted Cost of Work Performed	Actual Cost of Work Performed	Schedule Variance \$	Schedule Variance %	Cost Variance \$	Cost Variance %	Budget At Completion
RL-0012 SNF Stabilization & Disposition	\$36.2	\$33.6	\$34.6	-\$2.5	-7.0%	-\$1.0	-2.9%	\$114.8

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

- **Schedule Performance (-\$2.5M/-7.0%):** Delays occurred in the following activities: Sludge Treatment design review, procurement and construction mobilization activities due to impact of change to DBA approach, K West sludge containerization due to decision to perform additional debris removal activities and shift of labor resources to support HIH. In addition, K East D&D activities as labor resources were shifted to higher priority sludge work scope.
- **Cost Performance (-\$1.0M/-2.9%):** The unfavorable CV was primarily due to overruns in K West Basin activities as a result of additional debris removal activities and impact of HIH operational issues; HIH operations/maintenance/engineering due to difficulties encountered in pumping; and STP BNGA design and engineering due to DBA impact.

FY 2007 Schedule/Cost Performance (\$M), 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-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 11 days ahead of milestone
M-034-34 (S10-05-010)	Complete Removal of K East Sludge	TPA	05/31/07		06/13/07	Behind schedule; recovery plan in place/progress
DNFSB 120E (S10-05-015)	Complete K East Basin Containerized Sludge Removal	DNFSB	05/31/07		05/30/07	On Schedule
DNFSB 122E	K East Final Pass Sludge Removed	DNFSB	05/31/07		06/13/07	Behind schedule; recovery plan in place/progress
M-034-35a (S10-05-011)	Containerize K West Bulk Sludge	TPA	07/31/07		06/29/07	Ahead of Schedule
DNFSB 119W (S10-05-016)	Complete K West Bulk Sludge Containerization	DNFSB	07/31/07		06/29/07	Ahead of Schedule
M-034-35b (S10-05-011)	Complete K West Final Pass	TPA	01/31/08		01/31/08	On Schedule

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