

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

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K East Basin vacuuming operations in progress



Tri Nuc pump end effector/hose above the K West center bay floor. Racks have been removed and sludge is visible



Corner/crevice collection



Collection in heavy debris piles



Floor vacuum



Wide pass floor vacuum

K Basins' operators have designed unique vacuum end effectors for differing sludge conditions

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 March 2005.

Notable Accomplishments

SNF Stabilization and Disposition (PBS RL-0012)

Sludge Retrieval and Treatment: An additional 3.2 m³ sludge was collected, bringing the total collected in K East Basin to 23.7 m³ (54%). The second of four Large Diameter Containers (LDCs) containing North Loadout Pit (NLOP) sludge was shipped to T-Plant on April 4, 2005. Another 300 canisters (94% of total) and 15 racks were removed from K West Basin, and vacuuming operations in K West Basin commenced.

Multi-Canister Overpack (MCO) Welding at the Canister Storage Building (CSB): Fluor Hanford (FH) welded and "N" stamped 23 MCOs during March. As of April 13, 2005, a cumulative total of 356 MCOs were welded and "N" stamped, which leaves 45 MCOs to be welded.

Deactivation and Decommissioning: Fabrication and acceptance of the hydrolasing arm and end effectors was completed. The End Point Criteria for the K Basins remedial action was submitted to DOE-RL (RL) on April 15, 2005.

Issues

Sludge Containerization: Efforts to overcome the excessive debris and poor visibility and improve the sludge collection rate in the K East Basin continued. Activities included installation of the flocculent system, movement of canister racks and use of an eductor to remove heavy debris from the Weasel Pit. Sludge collection progress since November 2004 supports a projection of an August completion of Tri-Party Agreement Milestone M-34-33, "Containerize K East Sludge," that was due March 1, 2005. FH submitted a Baseline Change Request, RL012-S-05-004, *Impacts from Pre-Existing/Changed K Basin Conditions*, on April 1, 2005, requesting recognition of the increased work scope associated with basin cleanout conditions.

K East to K West Sludge Transfer: This subproject is experiencing delays that will impact Defense Nuclear Facility Safety Review Board (DNFSB) milestone 2001-1-CN-120E, "Complete Removal of Containerized Sludge from the K East Basin," due July 31, 2005. On April 13, 2005, vendor fabrication of transfer system equipment was put on hold pending review of the cost and schedule trends, and resolution of engineering change notices related to fabrication. Work is scheduled to resume on May 5, 2005. The project is evaluating a second delay associated with the direction received from RL to perform an Operational Readiness Review, vs. a Contractor Readiness Assessment that is planned in the baseline. A Baseline Change Request, reflecting the impacts of this direction, is being formulated for delivery to RL by April 28, 2005. The project is projecting a two-month delay to completion of this activity.

Other Waste Shipments: Additional waste streams were approved for shipment from 100K Area to the Environmental Restoration Disposal Facility. The final box of canister waste (of the original 357) continues to undergo sampling to confirm its disposition as low-level waste. Restrictions on remaining waste shipments, including all canister waste are expected by the June 2005 timeframe.

Sludge Treatment: Discussions continued between the RL and the Environmental Protection Agency (EPA) regarding the draft amendment to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Record of Decision (ROD) that provides for the treatment of K Basins sludge. As of April 20, 2005, an agreement on the amendment was reached and final comments are being incorporated. FH needs the amended ROD no later than May 3, 2005, for T Plant treatment and May 25, 2005, for the balance of sludge. A major impact will result if the amendment is significantly altered.

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 | \$ 0.9 | \$ 0.9 | \$ 0.0 |
| RL-0012 | SNF Stabilization & Disposition | \$ 130.1 | \$ 136.8 | \$ -6.7 |
| Total | | \$ 131.0 | \$ 137.6 | \$ -6.7 |

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 | \$1.2 | \$0.7 | \$0.6 | -\$0.5 | -41.6% | \$0.1 | 11.0% | \$2.6 |
| RL-0012 | SNF Stabilization & Disposition | \$57.7 | \$53.6 | \$72.3 | -\$4.1 | -7.2% | -\$18.7 | -34.9% | \$120.4 |
| Total | | \$58.9 | \$54.3 | \$72.9 | -\$4.7 | -8.6% | -\$18.6 | -34.3% | \$123.0 |

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

Schedule Performance (-\$4.7M/-8.6%): The variance is due to:

- (HQ-0012X) Work on hold pending resolution of FY 2005 funding level (-\$0.5M).
- North Loadout Pit sludge collection and treatment (-\$2.1M).
- Delays in K East basin sludge containerization (-\$0.7M).
- Delays in K West Transfer System and Fuel Retrieval (BNG America) (-\$4.0M).
- Delayed receipt of hydrolasing tools and miscellaneous D&D (-\$1.5M).

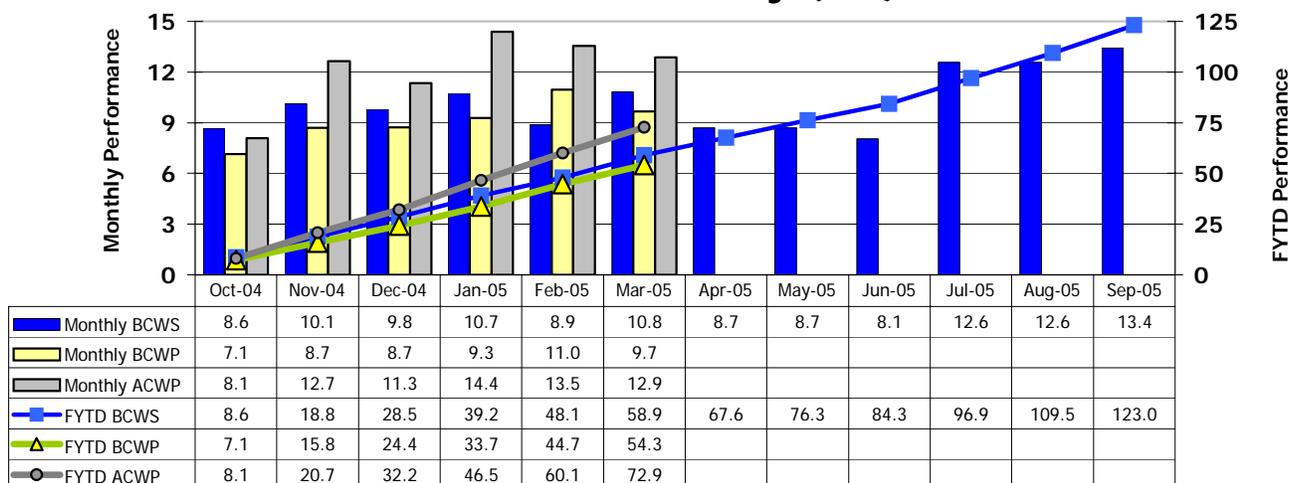
The unfavorable schedule variance is partially offset by a favorable schedule variance for completing MCO movement activities that were budgeted to be completed in FY 2004 (+\$1.6M), completing sludge carryover activities (\$+1.3M), MCO welding ahead of schedule (+\$.2M), and Sludge Treatment acceleration from FY 2006 (+\$1.0M).

Cost Performance (-\$18.6M/-34.3%): The variance is due to:

- Overruns developed in completion of fuel movement (no budget) (-\$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 (-\$3.0M).
- 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 (-\$13.7M), and D&D labor rates and technical requirements (-\$1.0M).
- Offset by efficiencies at CSB (+\$0.7M) and other miscellaneous underruns (+\$0.6M).

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-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 | | 08/10/05 | 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 | | 08/10/05 | Behind Schedule |
| S10-99-80 | Complete MCO Welding | PI | 06/30/05 | | 07/31/05 | Behind Schedule |
| DNFSB 120E (S10-05-015) | Complete K East Basin Sludge Removal | DNFSB | 07/31/05 | | 09/30/05 | Behind Schedule |
| RL-12-1.b (S10-99-082) | Transfer K East Sludge to K West Containers | PI | 07/31/05 | | 09/30/05 | 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 | | | 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 | 01/31/06 | | | On Schedule |
| RL-12-1.ch (S10-99-976) | Complete Removal of Contaminated Fuel Canisters | PI | 01/31/06 | | | On Schedule |
| 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 | | | On 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.