

Spent Nuclear Stabilization and Disposition (RL-0012)

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**K East Basins - Fuel
Transfer System Operations**



K West Basins

**Fuel Retrieval
System**



**Canister Storage Building –
Multi-Canister Overpack Welding**



**Canister Cleaner
Operations**



**Loading Cask on
Trailer at K West**

Sludge Retrieval and Disposition
- Test loading large diameter
container into casks at K Basins



**Cold Vacuum
Drying Facility –
Multi-Canister
Overpack Processing**

Overview

This section addresses work in Project Baseline Summary RL-0012, *Spent Nuclear Fuel Stabilization and Disposition*.

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

Notable Accomplishments

Sludge Disposition Alternatives: A review of progress and path forward was conducted with the Defense Board in June. Review of the T-Plant option for interim storage of the North Load Out Pit (NLOP) sludge has been completed. The first two containers for sludge isolation have been received. Pumping sludge into the first Large Diameter Container has commenced. In addition, the Request for Interest for Sludge Stabilization System was published.

Tri-Party Agreement (TPA) Milestones: RL and Fluor Hanford (FH) have successfully negotiated proposed changes for the TPA milestones associated with sludge retrieval and basin disposition. The negotiated milestones reflect contract changes associated with the accelerated sludge disposition approach and the basins grout and remove approach. The milestone change packages have been issued for public review and comment prior to final approval by the three parties (the United States Environmental Protection Agency [EPA], the State of Washington Department of Ecology, and RL).

Fuel Transfer System (FTS): Spent Nuclear Fuel (SNF) completed 37 FTS shipments (366 canisters) during the month of June. As of July 19, 2004, a cumulative total of 370 FTS shipments (3,686 canisters) have been completed. FTS is now 100 percent complete.

Fuel Movement Activities: SNF completed 14 multi-canister overpack (MCO) shipments containing 74 metric tons of heavy metal (MTHM) from the K West Basin to the Cold Vacuum Drying Facility during June. As of July 19, 2004, a cumulative total of 365 MCOs containing an estimated 1,986 MTHM have been shipped.

MCO Welding at the Canister Storage Building (CSB): SNF welded and "N" stamped 13 MCOs during June. As of July 19, 2004, a cumulative total of 215 MCOs were welded and "N" stamped, which is 19 MCOs ahead of the baseline schedule.

Deactivation: Test pours to validate grout mix properties for the K East (KE) Discharge Chute have been completed at the vendor's facilities. Testing and analysis of the resulting grout matrix is in progress. Documentary evidence to confirm that the KE Discharge Chute meets accepted waste disposal criteria has been issued. Revision to the K Basins Remedial Design Report/Remedial Action to incorporate the planned actions for the Discharge Chute have been approved by DOE-RL.

Issues

Fuel Production: As of July 19, 2004, SNF is approximately one week behind the revised MCO production schedule. FH has obtained approval to revise its overly-conservative airborne radiological control limits to be 30 percent of the DOE limit. This will enable most remaining underwater work in the basins to be performed without respiratory protection, thus improving the current FTS production rates. FH revised the shift schedule for MCO workers which should result in improved MCO production rates.

FY 2004 FH Funds vs. Spend Forecast (\$000)

	FY 2004 Anticipated Funding w/Carryover	FY 2004 Fiscal Year Spend Forecast	Variance
SNF Stabilization & Disposition	\$ 180,531	\$ 192,686	\$ (12,155)

The current funding allocation includes \$2M for moving the Fast Flux Test Facility (FFTF) un-irradiated fuel from the Plutonium Finishing Plant (PFP) to the CSB. It has now been determined that the FFTF un-irradiated fuel will be stored at PFP and shipped directly from PFP to the DOE Savannah River Plant. The FY 2004 funds associated with FFTF fuel movement will be reallocated to other Hanford work priorities.

SNF will utilize the projected under run within the 2012 Accelerated Completion Control Point to offset the forecasted overrun above.

FY 2004 Schedule/Cost Performance (\$000)

	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
SNF Stabilization & Disposition	118,966	92,448	143,586	-26,518	-22%	-51,138	-55%	161,739

Schedule Performance (-\$26,518K/-22%): The unfavorable schedule variance is due to:

- FTS and MCO shipment delays (-\$2,855K);
- Ceasing deactivation work not required for the grout and remove option (-\$4,820K);
- Ceasing work associated with the baseline sludge retrieval plan that is inconsistent with the accelerated sludge retrieval and disposition approach (-\$18,015K);
- Value of general support activities that are apportioned to the overall project progress for earned value measurement purposes (i.e., surveillance and maintenance, engineering, project management, etc.) (-\$828K); and
- The unfavorable schedule variance is partially offset by a favorable performance for MCO welding (+\$278K).

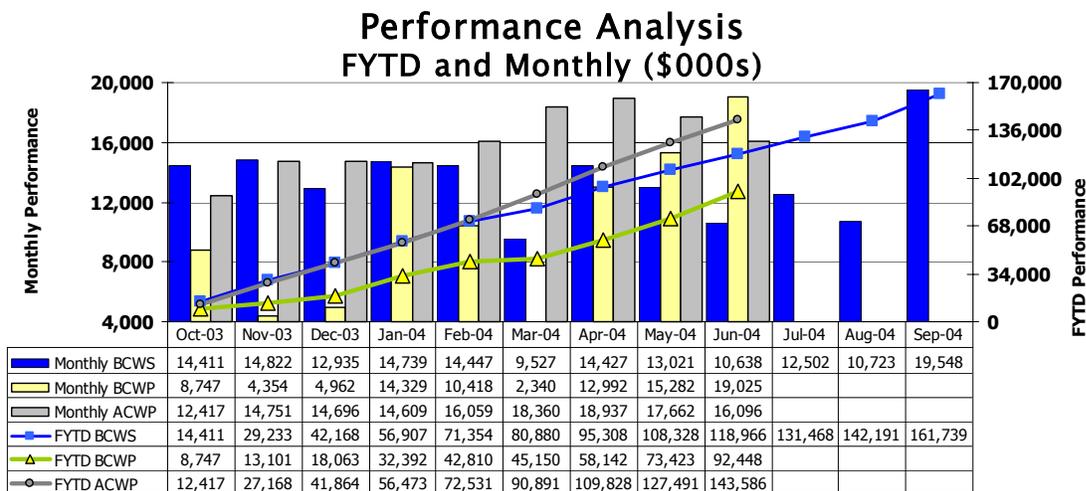
The schedule variance for the spent nuclear fuel portion will self-correct as the fuel continues to be moved.

FY 2004 Schedule/Cost Performance, continued

Cost Variance (-\$51,138K/55%): The unfavorable cost variance is due to:

- FTS and MCO shipment delays, i.e., staffing requirements remain unchanged regardless of fuel production levels until fuel production is complete (-\$20,475,K);
- Implementation of the grout and remove option per RL direction pending completion of contract negotiations and implementation of the baseline adjustment (-\$935K);
- Implementation of the accelerated sludge disposition path per RL direction pending completion of contract negotiations and implementation of adjusted baseline (-\$24,625K); and
- Value of general support activities that are apportioned to the overall project progress for earned value measurement purposes (i.e., surveillance and maintenance, engineering, project management, etc.) (-\$5,103K).

The expected cost variance upon completion of fuel is expected to be about \$30.2 million, which is directly attributable to the additional six months to support completion of the fuel movement. The majority of the sludge and deactivation variances will be resolved once a baseline change to incorporate the revised scope and schedule is implemented, currently planned for July 2004.



Milestone Achievement

Number	Milestone Title	Type (TPA/PI/DNFSB)	Due Date	Actual Date	Forecast Date	Status/Comments
M-34-29 (S15-02-001)	Complete K East Basin and K West Basin facility modifications for Alternate Fuel Transfer System casks transportation system	TPA	3/31/02	9/12/02		Complete
M-34-12-T01 (S15-02-001)	Complete construction of SWS (Construction Completion Document Section IIA)	TPA	9/30/02	3/4/03		Complete
M-34-17 (S00-02-901)	Initiate K East to K West fuel transfer	TPA/Performance Incentive (PI)	11/30/02	11/25/02		Complete
M-34-18A (S03-03-068)	Complete removal of 957 MTHM of SNF from the K West Basin	TPA/PI/DNFSB	12/31/02	1/7/03		Complete
M-34-08 (S04-02-205)	Initiate full scale K East Basin sludge removal	TPA/PI/DNFSB	12/31/02		8/1/04	Deleted. See note below
M-34-27-T01 (S03-03-069)	Complete removal of 1,252 MTHM of SNF from K West Basin	TPA	5/31/03	5/28/03		Completed 5/28/03, 3 days ahead of schedule
M-34-28 (S03-03-070)	Complete removal of 1,619 MTHM from the K West Basin	TPA	12/31/03	1/13/04		Complete
M-34-25-T01 (S03-04-001)	Complete transfer of K East Basin SNF to K West Basin	TPA/PI	5/31/04	7/1/04	6/30/04	Complete
M-34-18B (S00-00-902)	Complete removal of all K Basin SNF	TPA/PI/DNFSB	7/31/04		8/31/04	Working to complete by 8/31/04
S04-00-205, CD4	Complete ORR for sludge transfer from K Basins		12/31/02	6/02/04	5/15/04	Missed. See note below
M-34-10 (S04-01-215)	Complete sludge removal from K Basins	TPA/PI/DNFSB	8/31/04		TBD	Deleted. See note below

NOTE: Milestones and due dates are derived from the proposed Tri-Party Agreement Change Request M-34-04-01, which were based on the tentative agreement on Negotiations for Accelerations of K Basin Sludge Treatment and Disposal, Basin Remediation, and Delay in Sludge Retrieval signed by DOE-RL and EPA on April 29, 2004.

Milestone Achievement, continued

Number	Milestone Title	Type (TPA/PI/ DNFSB)	Due Date	Actual Date	Forecast Date	Status/ Comments
M-34-23 (S10-99-953)	Start K East water removal	TPA	9/30/04		9/30/04	On schedule.
S07-04-005	Consolidate spent fuel in the 200 Area	PI	9/30/04		9/30/04	On schedule
M-34-09-T01 (S04-05-516)	Complete K Basins rack and canister removal	TPA	1/31/05		1/31/05	Deleted. See note below
M-34-24 (S10-99-954)	Complete K East Basin water removal	TPA	6/30/05		9/30/05	Deleted. See note below
M-34-22 (S10-99-952)	Complete K West Basin water removal	TPA	9/30/05		8/31/06	Deleted. See note below
M-34-21-T01 (S10-99-951)	Initiate full-scale K West Basin water removal	TPA	2/1/05		12/31/05	Date change. See note below
S04-06-005	Transfer of K Basins to the River Corridor Contractor	PI	10/30/05		10/30/05	On schedule
M-34-00A (S10-99-955)	Complete removal of K Basin fuel/sludge/debris/water from K Basins	TPA (Major)	7/31/07		3/31/09	Scope change. See note below
M-34-30	Initiate Sludge treatment	TPA	2/28/07			Added. See note below
M-34-31	Complete Sludge treatment	TPA	10/31/07			Added. See note below
M-34-32	Complete removal of K East Basin Structure	TPA	3/31/07			Added. See note below
M-34-33	Containerize K East Sludge Sludge containerization initiation Sludge containerization complete	TPA	10/31/04 3/1/05			Added. See note below
M-34-34	Complete removal of K East Sludge	TPA	1/31/06			Added. See note below
M-34-35	Containerize K West Sludge	TPA	6/30/06			Added. See note below

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