

# Spent Nuclear Fuel Project

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



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



## ***K West Basins***

### ***Fuel Retrieval System***



### ***Canister Cleaner Operations***



### ***Loading Cask on Trailer at K West***

## ***Sludge Transportation System – Test loading large diameter container into casks at K Basins***



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



## OVERVIEW

The Spent Nuclear Fuel (SNF) Project consists of Project Baseline Summary (PBS) RL-RS03, *Spent Nuclear Fuel*.

NOTE: Unless otherwise noted, all information contained herein is as of the end of June 2003.

## NOTABLE ACCOMPLISHMENTS

**Fuel Movement Activities:** During June, the project completed shipment of seven multi-canister over packs (MCOs) containing approximately 42.54 metric tons of heavy metal (MTHM) from the K West Basin to the Cold Vacuum Drying Facility (CVDF). As of July 21, 2003, a cumulative total of 253 MCOs containing approximately 1,353.72 MTHM have been shipped, and the project is one MCO shipment and .48 MTHM behind schedule. The project has implemented numerous production enhancements to improve its schedule. Enhancements include the implementation of a 24-hour-a-day, 7-days-a-week (24/7) shift schedule for management, transportation and maintenance personnel; equipment improvements; and enhancements to Maintenance processes and systems.

**Fuel Transfer System (FTS):** The project completed 20 FTS shipments (200 canisters) during the month. As of July 21, 2003, a cumulative total of 155 FTS shipments (1,550 canisters) have been completed and the project is one shipment (ten canisters) ahead of schedule. The project commenced 24/7 FTS operations on July 14, 2003, and continues to focus on production and equipment issues to improve its schedule. Enhancements to the FTS annex and basin cooling systems have been completed, FTS jackscrew drives are being replaced and continuously monitored, and Nuclear Chemical Operators (NCO) training continues in support of the 24/7 schedule.

**MCO Welding at Canister Storage Building (CSB):** The project welded and "N" stamped nine MCOs during June. As of July 21, 2003, the project welded a cumulative total of 55 MCOs and is three MCOs ahead of schedule.

**Sludge Water System (SWS) - K East:** The SNF Project continues to focus on the resolution of SWS technical issues and concerns associated with the operational pause of the Contractor Operational Readiness Review (ORR). Corrective actions in Operations, technical baseline verification, and Readiness Self Assessment verification are nearly complete to support the declaration of readiness to resume the Contractor ORR the week of July 21, 2003, and the commencement of sludge removal August 2003.

**SWS – K West:** The SNF Project issued the Request for Proposal for the K West Sludge Retrieval and Storage System on June 30, 2003. The contract includes the design, fabrication, and testing of systems to retrieve and package sludge from K West. There were 43 companies notified, and bids are due from prospective vendors on August 11, 2003.

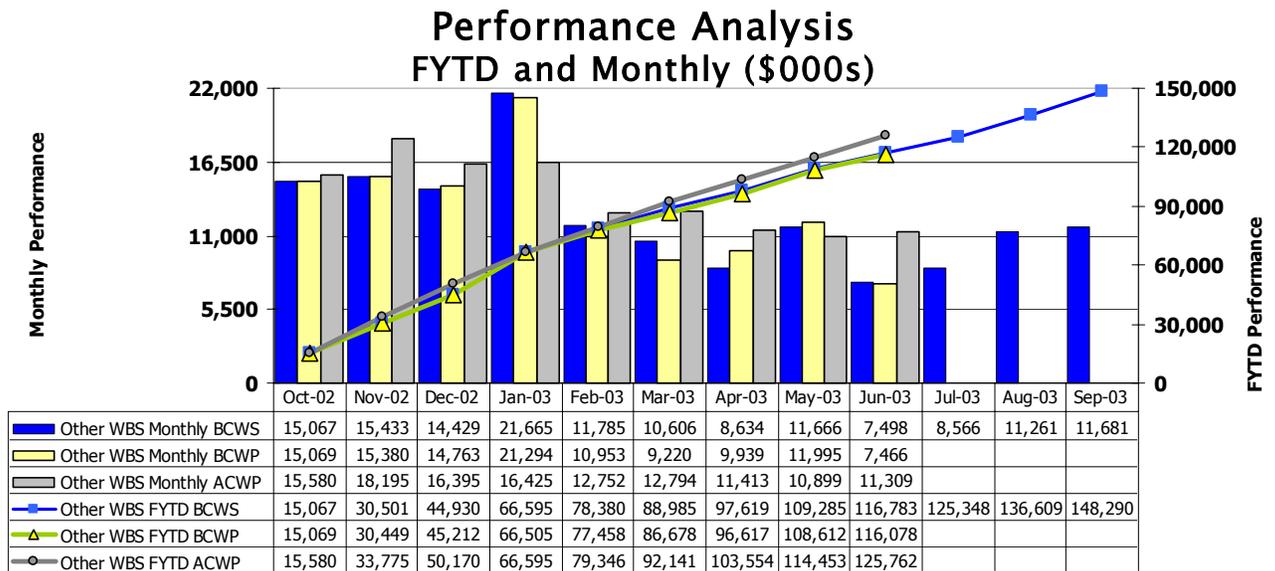
**Deactivation:** The SNF Project developed and delivered the Alternative Deactivation Plan to RL on June 30, 2003. The plan describes three alternative approaches for the deactivation and demolition of the K East and K West Basins. FH's recommended alternative is the Grout and Remove approach, which includes the encapsulation of low-level waste in cement-based grout, in lieu of the removal and cleaning of racks, debris, and equipment from the spent fuel storage basins at both K Basins. This approach accelerates the demolition of the K Basins by six years, reduces worker exposure, saves \$10M in costs under the Fluor contract, and an additional \$10M in the overall life-cycle costs. The two other alternatives are the Enhanced Baseline approach, which accelerates deactivation of basins by 18 months and is based on manual underwater move/cut of racks and debris; and the Robotics approach, which is essentially the same as the Enhanced Baseline approach, with the exception that it uses automation to replace hands-on labor. RL was requested to provide a decision to FH by August 15, 2003.

## FY 2003 SCHEDULE/COST PERFORMANCE (\$000)

**Schedule Variance Analysis (-\$705K):** The unfavorable 0.6 percent schedule variance is primarily due to schedule delays in K East SWS operations and MCO fabrication deferral.

**Cost Variance Analysis (-\$9,684K):** The unfavorable 8.3 percent variance is due to increased costs associated with MCO welding technical issues; K East to K West Fuel Transfer start-up and production; SWS Engineering, Procurement, Construction and ORR preparation; and June accelerated fuel movement costs. The budget has not been increased to reflect the schedule acceleration costs (K East moving to 24/7 Operations and changes to the CSB shift schedule). A Baseline Change Request (BCR) is being developed for the FH acceleration initiative that increases the baseline to \$164.5M; the baseline will be updated upon the BCRs approval.

	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-RS03 Spent Nuclear Fuel	116,783	116,078	125,762	-705	-1%	-9,684	-8%	148,290



## Milestone Achievement

<b>Number</b>	<b>Milestone Title</b>	<b>Type (TPA/ DNFSB/PI)</b>	<b>Due Date</b>	<b>Actual Date</b>	<b>Forecast Date</b>	<b>Status/ Comments</b>
M-34-29 (S15-02-001)	Complete K East Basin and K West Basin facility modifications for Alternate Fuel Transfer System casks transportation system	Tri-Party Agreement (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	09/30/02	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/DNFSB/PI	12/31/02	1/7/03		Complete
M-34-08 (S04-02-205)	Initiate full scale K East basin sludge removal	TPA/DNFSB/PI	12/31/02		Week of 8/10/03	Behind schedule. Forecast to begin Contractor ORR the week of 7/21/03, and initiate sludge removal the week of 8/10/03.
M-34-27-T01 (S03-03-069)	Complete removal of 1252 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 1619 MTHM from the K West Basin	TPA	12/31/03		10/2003	Accelerated schedule projected completion 10/2003
M-34-25-T01 (S03-04-001)	Complete transfer of K East Basin SNF to K West Basin	TPA/PI	5/31/04		12/2003	Accelerated schedule projected completion 12/2003
M-34-18B (S00-00-902)	Complete removal of all K Basin SNF	TPA/DNFSB/PI	7/31/04		3/2004	Accelerated schedule projected completion 3/2004

## MILESTONE ACHIEVEMENT (CONTINUED)

Number	Milestone Title	Type (TPA/ DNFSB/PI)	Due Date	Actual Date	Forecast Date	Status/ Comments
S04-00-205, CD4	Complete Operational Readiness Review sludge transfer from K Basins	PI			Week of 7/21/03	Behind schedule. Forecast to begin Contractor ORR the week of 7/21/03
M-34-10* (S04-01-215)	Complete sludge removal from K Basins	TPA/DNFSB/ PI	8/31/04		8/31/04	K East Basin sludge removal planned for completion by 8/31/2004. Possible changes for K West Basin sludge removal are under consideration due to the accelerated project schedule, and were submitted to DOE-RL 7/16/2003.
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	Potential changes to milestones due to alternate deactivation strategy submitted on 6/30/2003
M-34-24 (S10-99-954)	Complete K East Basin Water removal	TPA	9/30/05		9/30/05	* (see note below)
M-34-22 (S10-99-952)	Complete K West Basin water removal	TPA	8/31/06		8/31/06	* (see note below)
M-34-21-T01 (S10-99-951)	Initiate full-scale K West Basin water removal	TPA	10/31/05		10/31/05	* (see note below)
S06-06-005	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		7/31/07	* (see note below)

**NOTE: Milestone may be completed early, if proposed deactivation plan changes are approved.**

## FY 2003 FH FUNDS VS FORECAST (\$000)

	Expected Funds	Spend Forecast	Variance
<b>RL-RS03</b> Spent Nuclear Fuel			
<b>Project Completion - Operating</b>	\$ 164,422	\$ 164,500	\$ (78)

**NOTE:** The delta between the spend forecast and the funds allocation is due to rounding.

### ISSUES

**SNF Project SWS – K East:** TPA Milestone (M-34-08) to begin K East sludge movement by December 31, 2002, is behind schedule. The contractor ORR started April 23, 2003. An operational pause was called on April 27, 2003, due to procedural deficiencies, technical basis deficiencies, and readiness preparation. The SNF Project continues to focus on the resolution of SWS technical issues and concerns associated with the operational pause of the Contractor ORR. Corrective actions in Operations, technical baseline verification, and Readiness Self Assessment verification are nearly complete to support the declaration of readiness to resume the Contractor ORR the week of July 21, 2003, and the ultimate commencement of sludge removal in August 2003.

**Fuel Production – FTS Shipments:** Removal of all K Basin fuel by July 31, 2004, is based upon the completion of FTS shipments by January 31, 2004. As of July 21, 2003, the project is one shipment (ten canisters) ahead of schedule. The project commenced 24/7 FTS Operations on July 14, 2003, and continues to focus on production and equipment issues to regain its schedule. Enhancements to the FTS annex and basin cooling systems have been completed, FTS jackscrew drives are being replaced and continuously monitored, and NCO training continues in support of the 24/7 schedule.