



Section G

Spent Nuclear Fuel

PROJECT MANAGERS

S.J. Veitenheimer, RL
(509) 373-9725

R.B. Heck, FH
(509) 373-0500

INTRODUCTION

The Spent Nuclear Fuel (SNF) Project consists of Project Baseline Summary (PBS) RL-RS03, Work Breakdown Structure (WBS) 3.2.3.

NOTE: Unless otherwise noted, all information contained herein is as of the end of May 2002.

Fiscal year (FY) to date milestone performance (EA, HQ, and RL) shows one milestone overdue.

NOTABLE ACCOMPLISHMENTS

Fuel Movement Activities — Activities included:

- During this reporting period, seven Multi-Canister Overpacks (MCOs) containing 32.65 Metric Tons of Heavy Metal (MTHM) were shipped from K West (KW) (68 MCOs and 318.46 MTHMs, cumulatively). To date, the Spent Nuclear Fuel (SNF) Project is 56 working days (27 MCOs, 126.62 MTHM) behind the baseline schedule commitment to move 720.1 MTHM by the end of fiscal year.

Fuel Transfer System (FTS) Construction — Activities included:

- Completed Integrated Factory Acceptance Test (FAT) on both K East (KE) and KW Transfer Systems.
- Received all transfer system equipment at 100K.
- Completed alignment of KE in-basin annex rails to Upper Rail Assembly (URA).
- Completed in-basin modifications at KE including: installation of limit switches for Shielded Transfer Cask (STC) Lift Table, installation of closure pieces from lower guide frame to URA, installation and rework of KE in-basin demineralization water system.
- Completed in-basin modifications at KW including: bolted the upper guide rail to the Annex Rail Assembly, routed two-inch conduit to annex panel cabinet 201, completed tie-in to the existing treated water piping, and performed critical lift and closure piece installation to the URA.

Canister Cleaner Operations — Activities included:

- Removed 68 (247 cumulatively) canisters and prepared for shipment and disposal.

100K Deactivation Activities — Activities included:

- Received Nondestructive Evaluation (NDE) equipment at the KE Basin. Awaiting completion of final paperwork before deployment.

Sludge Receipt Modifications — Activities included:

- Installed leveling frames and containment systems in Cells 3L, 10L, and 15L.
- Initiated FH review of the revision to the T Plant Safety Addendum. RL is participating informally.

Site-Wide Activities — Activities included:

- Completed receipt of Single Pass Reactor (SPR) Shipments from F Reactor Basin.
- Continued preparations for light water reactor (LWR) Spent Fuel receipt from 324 Building.
- Initiated T Plant Contractor Operational Readiness Review (ORR).

Key Integration Activities — Activities included:

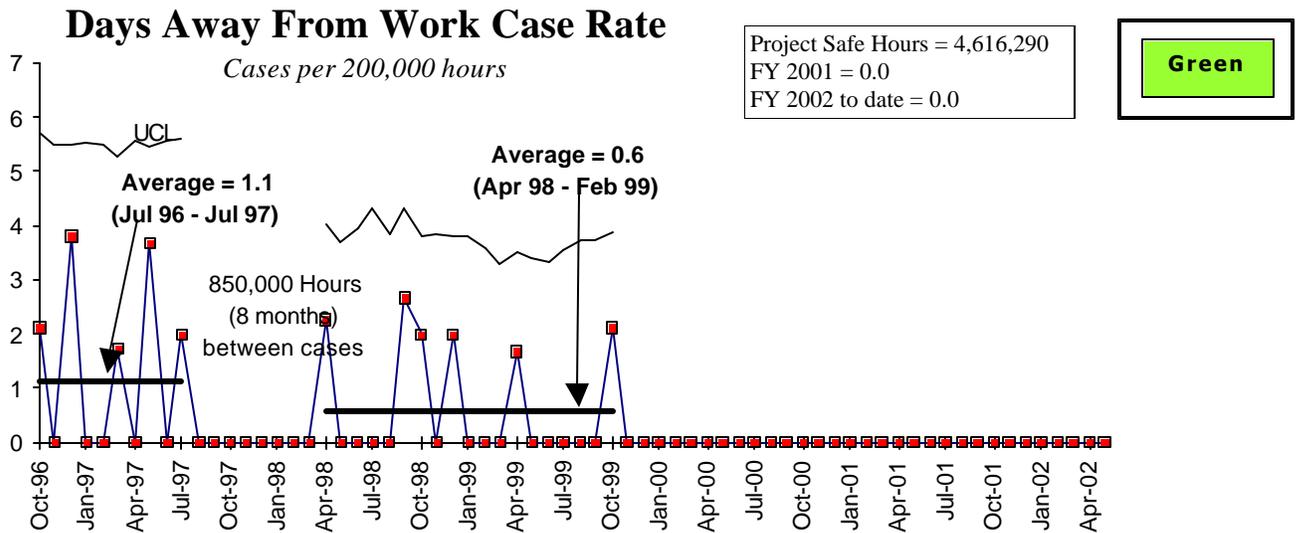
- Continued preparations with Waste Management Project for Shippingport (PA) Pressurized Water Reactor Core 2 SNF removal. Initiated T Plant Contractor ORR for fuel removal initiated.

NOTABLE ACCOMPLISHMENTS (CONTINUED)

- Continued support with the River Corridor Project on activities for 324 Building (B Cell) SNF removal.
- Completed Neutron Radiography Facility Training Research and Isotope Production General Atomics (TRIGA) and Fast Flux Test Facility (FFTF) fuel receipt dry runs at 200 Area ISA and 400 Area ISA.
- Continued activities with Bechtel Hanford, Inc. for receipt of SNF discovered during 105F and 105H reactor basins deactivation at K Basins. Received final fuel shipment from F Reactor Basin received.

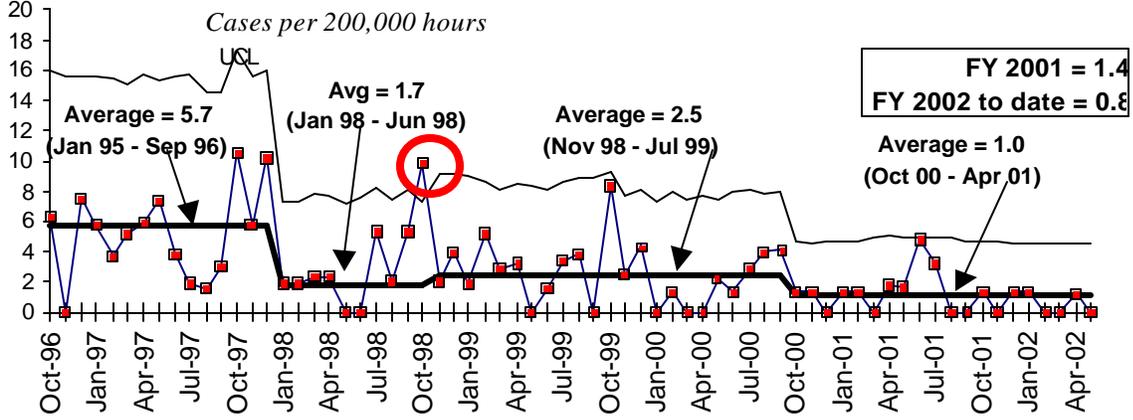
SAFETY

No Days Away from Work Case injuries were reported within the SNF Project, thus allowing an achievement of more than 4.6 million safe work hours by the end of May 2002. This performance can be attributed to the effective implementation of the Integrated Safety Management (ISM) System core functions of management commitment and worker involvement.

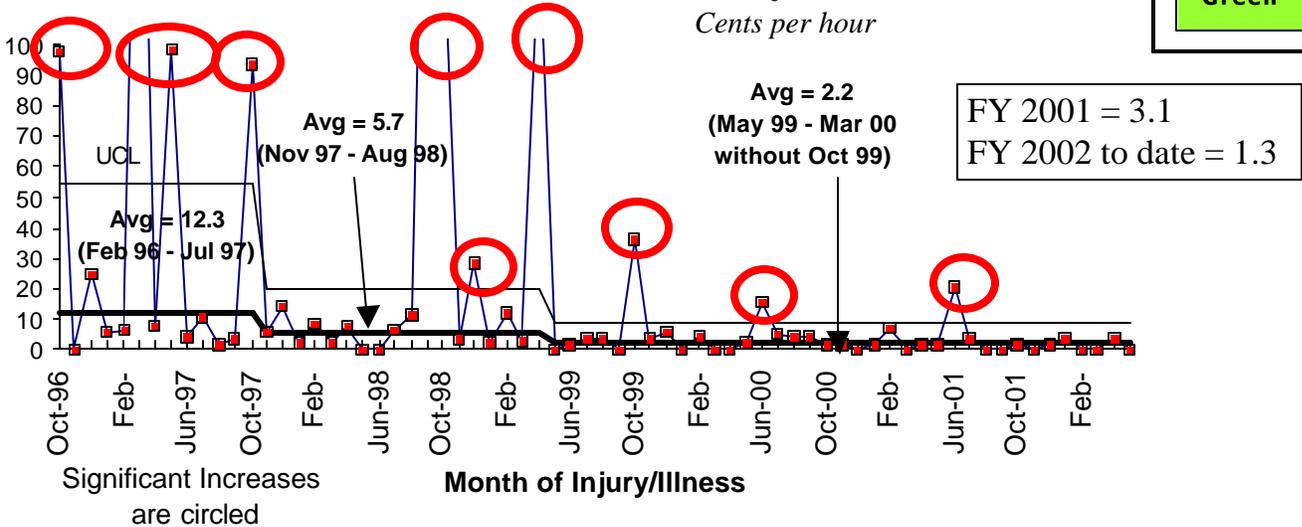


SAFETY (CONTINUED)

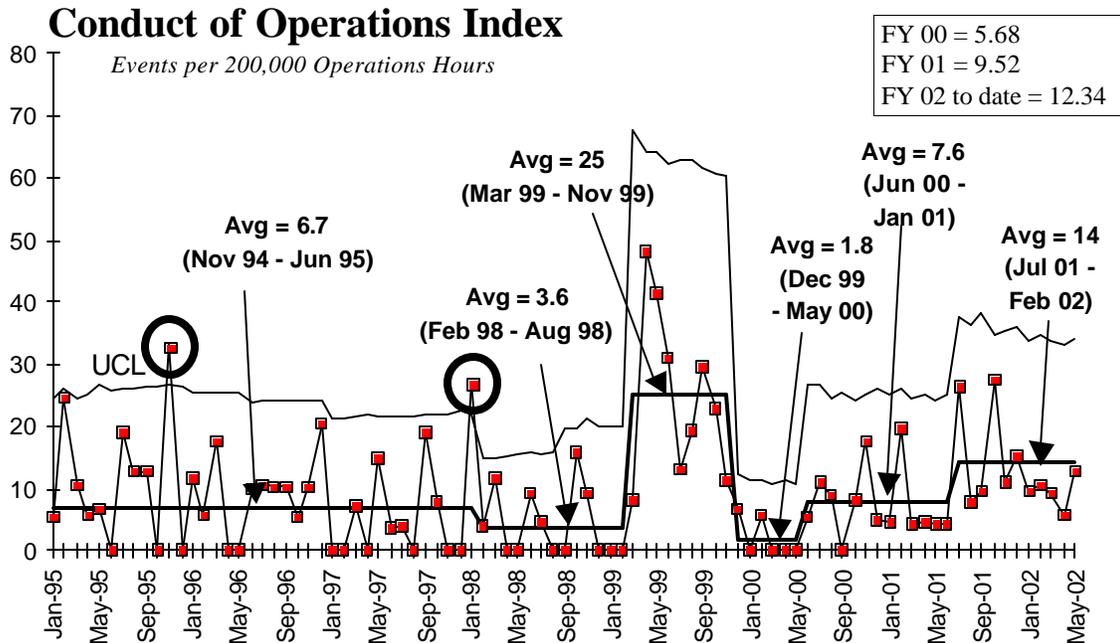
OSHA Recordable Case Rate



DOE Safety Cost Index



CONDUCT OF OPERATIONS



A CONOPs Improvement Plan with action items has been prepared. Selective senior supervisor oversight is being used in KW for complex evolutions. Procedures are being identified for improvement and progress for change incorporation has begun. Operation team reviews for each shift have been requested for review and feedback of procedure changes. Individual actions regarding non-procedure compliance are being acted on as appropriate within the Human Resources program at the site. Lessons are being shared to call attention to appropriate actions that are expected.

Maintenance lessons learned from the April outage have been prepared and recommendations for improvement are being implemented.

BREAKTHROUGHS / OPPORTUNITIES FOR IMPROVEMENT

Breakthroughs

Nondestructive Evaluation (NDE) of Contamination in the KE Basin Walls and Floors — A significant activity necessary to deactivate the 100 Area KE Basin is to characterize the level of contamination in the basin's unsealed concrete walls and floor. This characterization data will be used to help determine the methods to be applied in completing the deactivation of the basin, once fuel and sludge have been removed.

The SNF Project will be using a nondestructive (gamma scanning) technique and detector system, developed by the Pacific Northwest National Laboratory, to acquire data on the depth of radionuclide penetration in the basin's concrete walls and floors. This is the first time the NDE technique will be used

to obtain characterization data with the facility in normal operation, with its full inventory of fuel, sludge and contaminated water. If successful, the data will be used, in conjunction with other information, to determine which deactivation methods can realistically be used to remove/reduce the radiological dose/contamination, as well as to determine which basin areas are in the most need of mitigation. This detection system has been constructed, tested under laboratory conditions and is ready for deployment into the KE Basin.

Opportunities for Improvement

Witness Model — A Fluor consulting group is assisting the SNF Project reanalyzing its critical path to regain a successful production schedule. The team has been here since May 6, 2002 and is working with the SNF Project team to develop a witness model that will help predict our future rate of production based on historical information including process improvements. The model will be ready for process evaluations by the end of June 2002.

Flowmeter — The installation of a more reliable flowmeter for the P-2 pump is complete and is very stable.

UPCOMING ACTIVITIES

Fuel Movement — Continue removal and processing of SNF.

Fuel Movement — Continue implementing process improvements to decrease time necessary to load and process fuel in MCOs.

Sludge Water — Complete in-basin 100 percent design by June 14, 2002.

Sludge Water — Complete Sludge Transportation System 100 percent design by June 20, 2002.

Fuel Transfer System (FTS) — Complete installation of mechanical equipment by June 24, 2002.

FTS — Complete construction of FTS by June 28, 2002.

100K Deactivation — Obtain characterization data of KE Basin by June 30, 2002.

Site-wide Activities — Ship Neutron Radiography Facility (NRF) Training, Research and Isotope Production, General Atomics (TRIGA) fuel to 200 Area ISA by July 2002.

100K Deactivation — Complete Project Execution Plan by July 30, 2002.

Site-wide Activities — Receive initial 324 Building LWR fuel shipment at 200 Area ISA by August 2002.

Site-wide Activities — Receive initial Shippingport Fuel at the Canister Storage Building (CSB) by August 2002.

MILESTONE ACHIEVEMENT

Number	Milestone Title	Type (TPA/DNF SB/PI)	Due Date	Actual Date	Forecast Date	Status/ Comments
M-34-06-T01	Initiate KW Basin SNF Canister Cleaning Operations.	TPA	08/31/01	3/15/02		Complete
M-34-16	Initiate removal of KW Basin SNF.	ALL	11/30/00	12/7/00		Complete
M-34-29	Complete KE Basin and KW Basin facility modifications for AFTS casks transportation system.	TPA	3/31/02		06/28/02	Overdue. Received all equipment. Installation complete by June 24, 2002.
M-34-12-T01	Complete construction of SWS.	TPA	09/30/02		09/30/02	Current projection on schedule.
S10-99-950	Select K Basin Pool Decontamination Method.	TIP	09/30/02		09/30/02	On schedule. Studies are currently being performed to determine method.
M-34-17	Initiate KE to KW fuel transfer.	TPA	11/30/02		11/30/02	On Schedule
M-34-18A	Complete removal of 190 MCOs of SNF from the KW Basin.	TPA/DNFSB	12/31/02		12/31/02	Currently 27 MCOs behind schedule. Actions are being taken to recover schedule.
M-34-08	Initiate full scale KE basin sludge removal.	TPA/DNFSB	12/31/02		12/31/02	On Schedule
M-34-27-T01	Complete removal of 244 MCOs of SNF from KW Basin.	TPA	5/31/03		5/31/03	On Schedule
S09-03-010	Decide treatment path for sodium removal from FFTF.	TIP	09/30/03		09/30/03	On Schedule
M-34-28	Complete removal of 311 MCOs from the KW Basin.	TPA	12/31/03		12/31/03	On Schedule
M-34-25-T01	Complete transfer of KE Basin SNF to KW Basin.	TPA	5/31/04		5/31/03	On Schedule
M-34-18B	Complete removal of all K Basin SNF.	ALL 3	7/31/04		7/31/04	On Schedule
M-34-10	Complete sludge removal from K Basins.	ALL 3	8/31/04		8/31/04	On Schedule
M-34-23	Start KE water removal.	TPA	9/30/04		9/30/04	On Schedule

MILESTONE ACHIEVEMENT (CONTINUED)

Number	Milestone Title	Type (TPA/DNF SB/PI)	Due Date	Actual Date	Forecast Date	Status/ Comments
M-34-09-T01	Complete K Basins rack and canister removal	PI	1/31/05		1/31/05	On Schedule
M-34-24	Complete KE Basin Water removal	TPA	9/30/05		9/30/05	On Schedule
S06-06-006	Complete K Basin water removal	PI	4/30/06		4/30/06	On Schedule
M-34-22	Complete KW Basin water removal	TPA	8/31/06		8/31/06	On Schedule
S06-06-004	Complete transition activities for Cold Vacuum Drying Facility (CVDF) and other facilities	PI	9/30/06		9/30/06	On Schedule
S06-06-005	Transfer of K Basins to the River Corridor Contractor	PI	9/30/06		9/30/06	On Schedule
S20-10-010	Select technology to prepare SNF MCOs for shipment and demonstrate	TIP	12/30/10		12/30/10	On Schedule

NOTE: Above data includes all TPA/DNFSB/Performance Incentive milestones as included in the FH baseline, and provides Contract-to Date status.

Performance Objectives

Move Fuel Away from the River

EXPECTATION: Remove spent fuel from K Basins

Move 720.1 Metric Tons Heavy Metal from KW Basin by end of FY 2002.

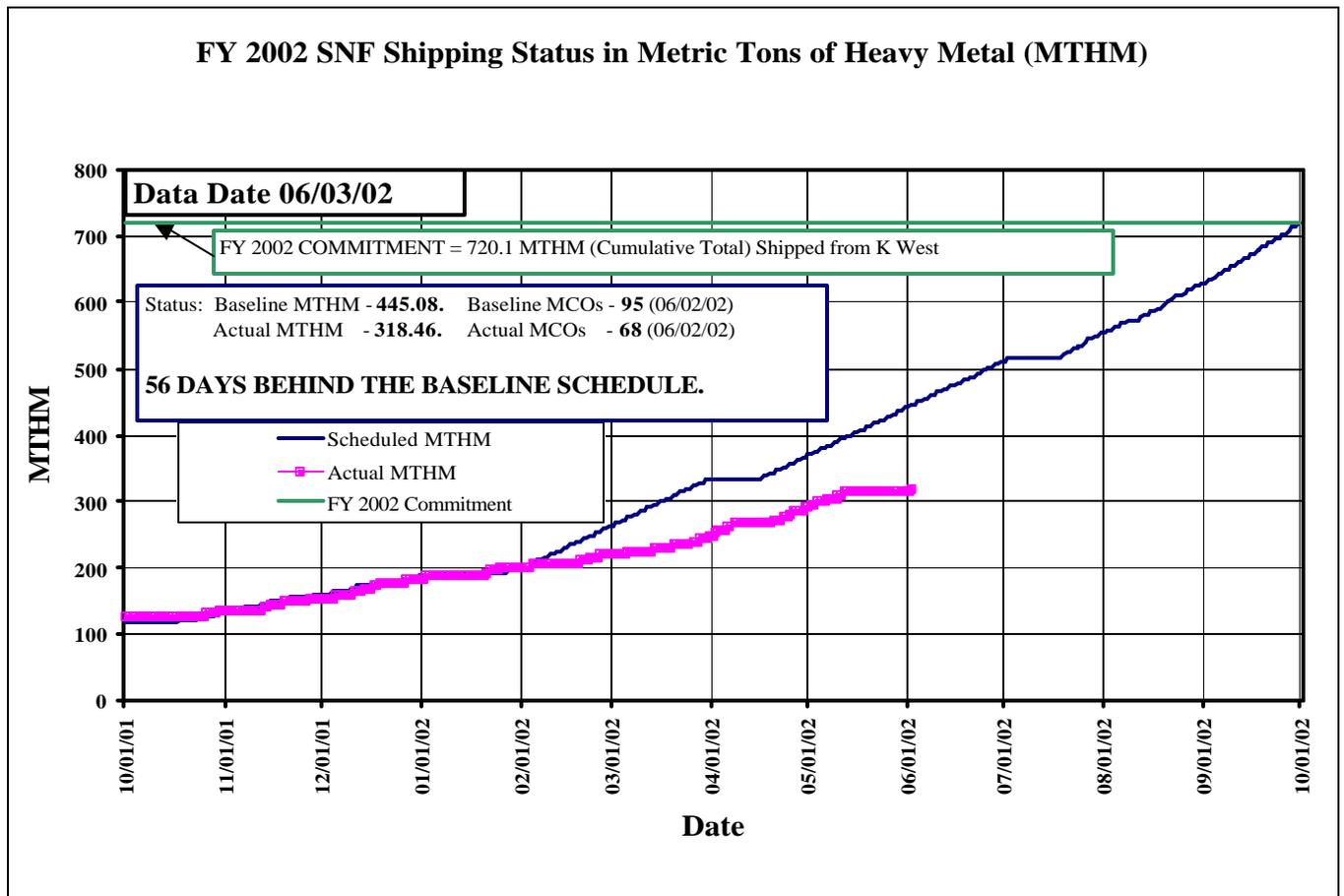
Status: A cumulative total of 68 MCOS containing 318.46 MTHM have been shipped. Currently 56 days (27 MCOS, 126.62 MTHM) behind the baseline schedule.

Complete construction on Fuel Transfer System (FTS) by March 31, 2002.

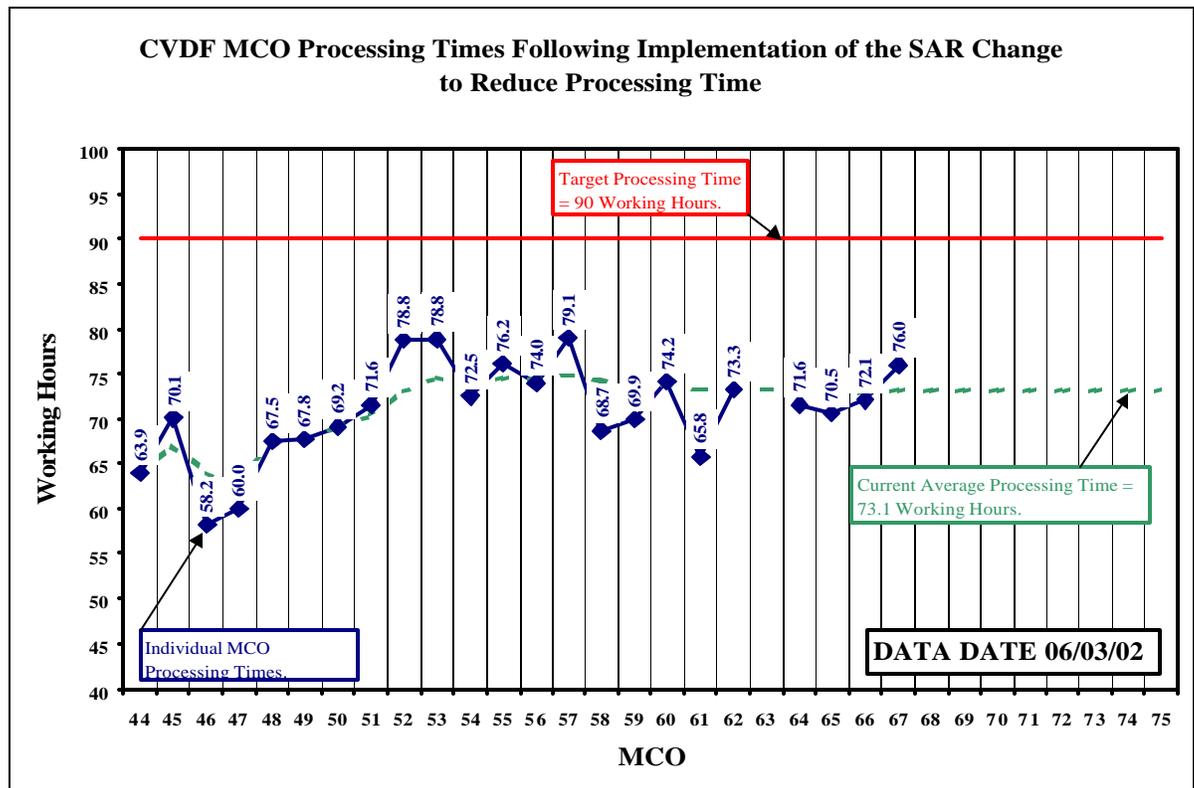
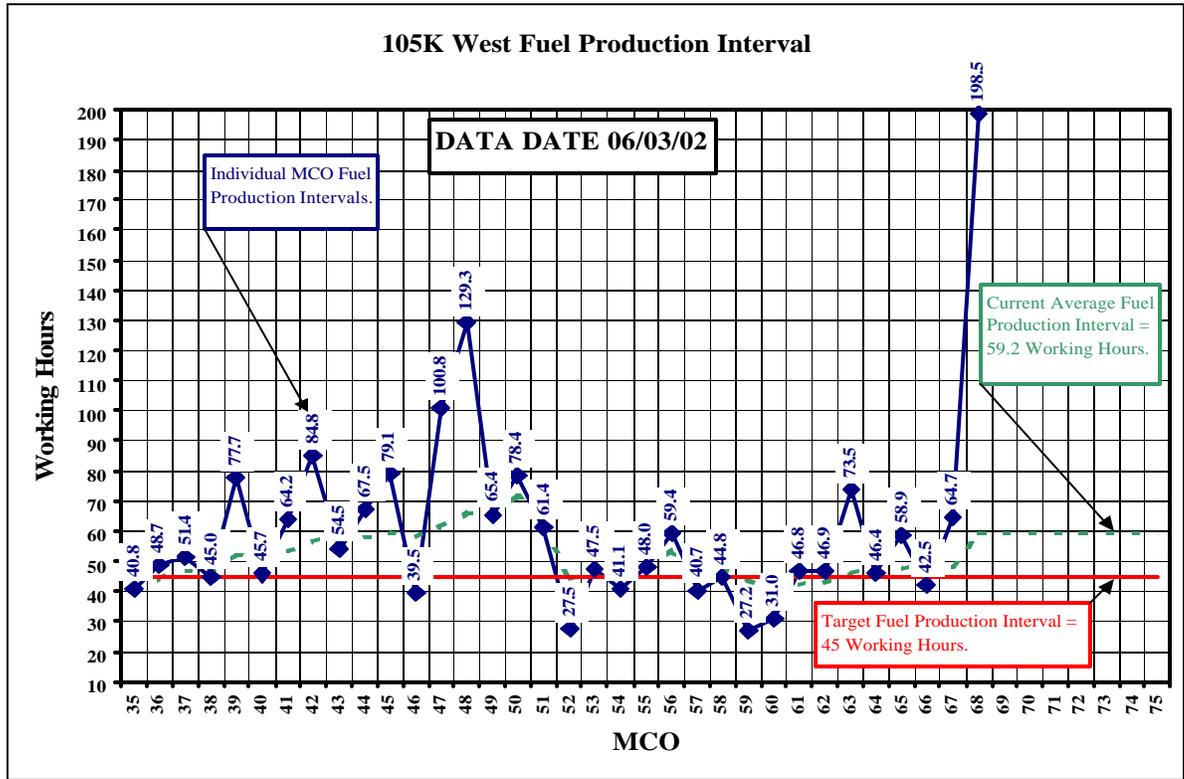
Status: Received all equipment. Installation complete by June 24, 2002. Projected completion by June 28, 2002.

Commence KE to KW Fuel Transfer by November 30, 2002.

Status: On schedule.



PERFORMANCE OBJECTIVES (CONTINUED)



PERFORMANCE OBJECTIVES (CONTINUED)

EXPECTATION: Move Sludge and Water from K Basins

Initiate Sludge Movement by December 31, 2002.

Status: KW Sludge Water construction is estimated 37 percent complete. Current projection is September 30, 2002.

EXPECTATION: Remove canisters from K Basins

Remove 600 canisters from KW by fiscal year end.

Status: A total of 247 canisters have been cleaned fiscal year to date. The SNF project is eight canisters ahead of schedule.

Consolidate Non-Production Reactor Fuel

EXPECTATION: Consolidate site-wide non-production reactor fuel in 200 Area

Move .02 MTHM in fiscal year 2002.

- **Status:** Reanalyzing Safety Analysis Report for Packaging (SARP). Forecast is August 2002. Potential to move an additional 1.6 MTHM in support of 324 Building Light Water Reactor SNF transfer stretch goal (with River Corridor).

SCHEDULE / COST PERFORMANCE – ALL FUND TYPES FY TO DATE STATUS (\$000)

By PBS	FYTD								
	BCWS	BCWP	ACWP	SV	%	CV	%	BAC	
PBS RS03 WBS 3.2.3.1	SNF Project, 100 K Basins	\$ 83,493	79,005	\$ 87,561	\$ (4,488)	-5%	\$ (8,556)	-11%	\$ 121,200
PBS RS03 WBS 3.2.3.2	Canister Storage Building (to2004)	\$ 6,297	\$ 6,429	\$ 6,538	\$ 132	2%	\$ (109)	-2%	\$ 9,388
PBS RS03 WBS 3.2.3.3	200 Intrim Storage Area (to2004)	\$ 1,846	\$ 1,092	\$ 1,023	\$ (754)	-41%	\$ 69	6%	\$ 2,935
PBS RS03 WBS 3.2.3.4	SNF Project Management and Support	\$ 25,082	\$ 25,088	\$ 24,577	\$ 6	0%	\$ 511	2%	\$ 38,692
Total		\$ 116,718	\$ 111,614	\$ 119,699	\$ (5,104)	-4%	\$ (8,085)	-7%	\$ 172,215

FY TO DATE SCHEDULE / COST PERFORMANCE

The SNF FYTD unfavorable schedule variance is primarily driven by the following areas, which are behind due to emergent work: FTS construction, SWS engineering, Canister Cleaning and Fuel Removal. The unfavorable cost variance is primarily driven by additional scope in FTS construction/engineering, SWS engineering and procurement, and Facility maintenance/operations.

For all active sub-PBSs and TTPs associated with the Operations/Field Office, FYTD Cost and Schedule variances exceeding + / - 10 percent or one million dollars require submission of narratives to explain the variance.

Schedule Variance Analysis: (-\$5.1M)

3.2.3.1 SNF Project, 100K Area (-\$4.5M)

Description /Cause: The unfavorable 5 percent schedule variance is primarily due to emergent work in FTS and SWS.

Impact: None to report.

Corrective Action: None required.

3.2.3.3 200 Area Interim Storage (-\$0.8M)

Description /Cause: The unfavorable 41 percent schedule variance is primarily due to delays in the transfer of PWR Core.

Impact: None to report.

Corrective Action: None required.

Cost Variance Analysis: (-\$8.1M)

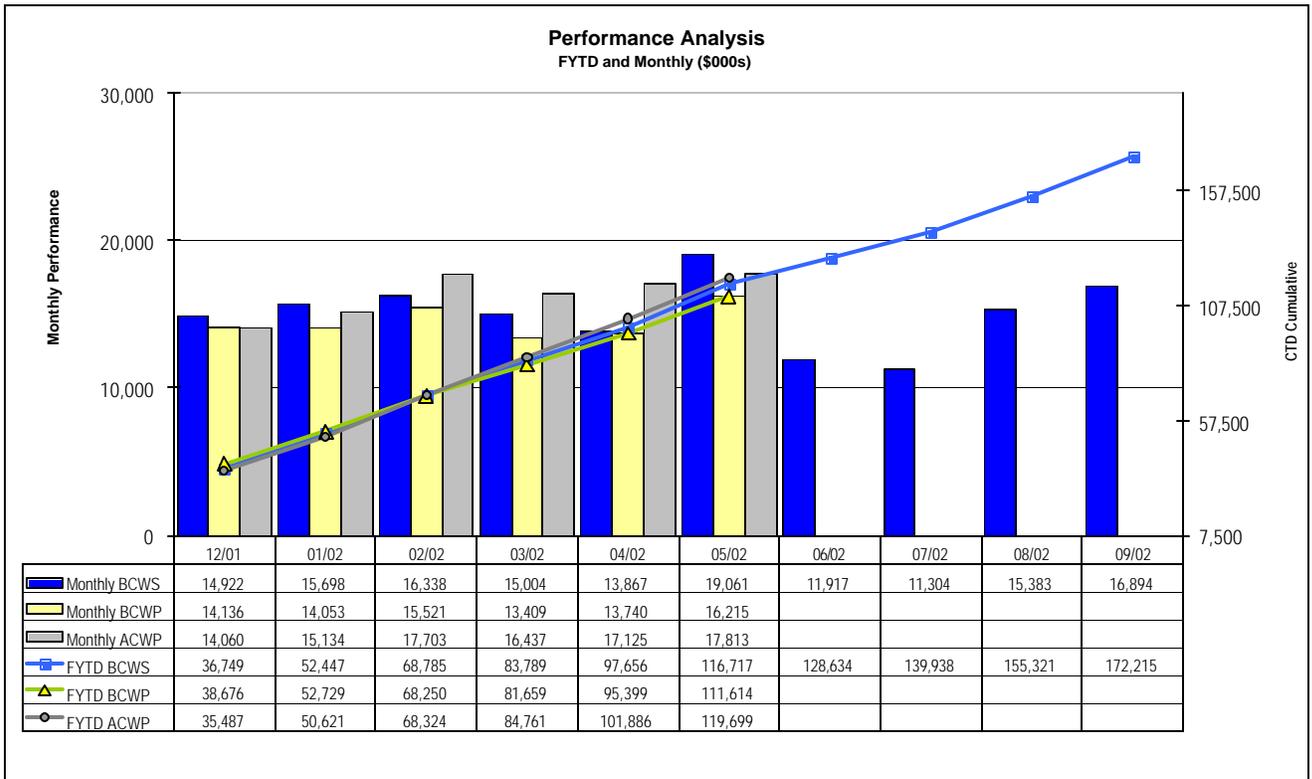
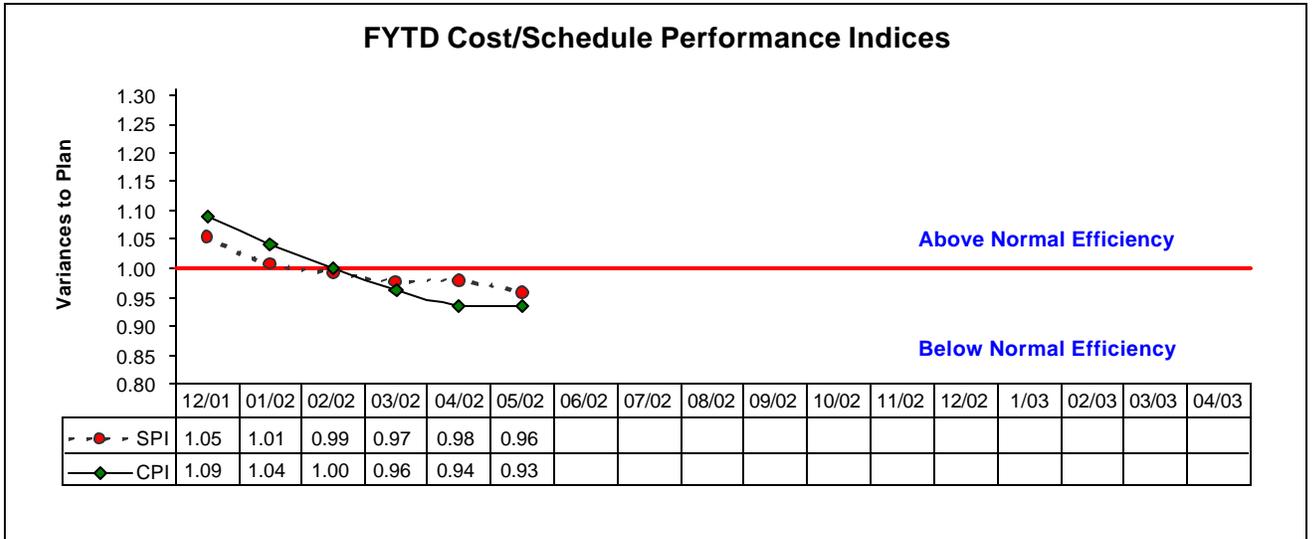
3.2.3.1 SNF Project, 100K Area (-\$8.6M)

Description /Cause: The unfavorable 11 percent cost variance is primarily due to emergent work in FTS and SWS.

Impact: None to report.

Corrective Action: None required.

Schedule / Cost Performance (Fiscal Year to Date and Monthly)



FUNDS MANAGEMENT – FY 2002 TO DATE FUNDS VS SPENDING FORECAST (\$000)

	FH Funds Reallocation	FYSF	Variance
3.2.3 Spent Nuclear Fuel			
RS03			
Project Completion - Operating	\$ 176,389	\$ 179,437	\$ (3,048)
			0
Total	\$ 176,389	\$ 179,437	\$ (3,048)

Status through 5/30/2002

ISSUES

Technical Issues

Issue: MCO number 63 did not pass its integrity test.

Impact: Path forward for final disposition of MCO number 63 has not been decided.

Corrective Actions: MCO number 63 is under surveillance in Bay two of the CVDF. Recovery plan evaluation is proceeding. Have acquired additional resources from Fluor, Inc. and Pacific Northwest National Laboratory (PNNL).

Issue: Equipment reliability continues to be a major focus for sustaining fuel movement.

Impact: Continued equipment failures may negatively impact meeting fuel movement commitments.

Corrective Actions: Major repairs are complete for the Primary Clean Machine (PCM) and manipulators. The P-1 pump replacement is complete. Fluor consulting is evaluating additional repair action items that can reduce random equipment failures.

Regulatory, External, and DOE Issues and DOE Requests

None to report.

BASELINE CHANGE REQUESTS CURRENTLY IN PROCESS

Baseline Change Log							
BCR No./ WBS	Level 4	Date Originated	Description	Impact		Date Approved	Status
				Days	Dollars (\$000s)		
RS03-02-001R1		5/14/02	USQ Training and Requirement	0	70		At RMB for consideration and approval