



Section G

Spent Nuclear Fuel

PROJECT MANAGERS

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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 June 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, ten Multi-Canister Overpacks (MCOs) containing 55.78 Metric Tons of Heavy Metal (MTHM) were shipped from K West (KW) (78 MCOs and 374.24 MTHM, cumulatively). To date, the Spent Nuclear Fuel (SNF) Project is 61 working days (31 MCOs, 135.76 MTHM) behind the baseline schedule commitment to move 720.1 MTHM by the end of fiscal year (FY) 2002.

Facility Activities — Activities included:

- The Canister Storage Building (CSB) completed all MCO Sampling dry runs.

Fuel Transfer System (FTS) Construction — Activities included: Continued construction KE and KW FTS Annexes (nearly complete).

- In-basin modifications and equipment installation at KE and KW nearly complete.

Sludge Water System (SWS) — Activities included:

- Modified procurement and incorporated self-performed construction of in-basin equipment to accommodate schedule requirements.
- Resolved all technical issues related to nuclear safety.
- Completed large diameter containers (LDC) initial proof of principle tests.
- Completed 90 percent design packages for KE in-basin modifications.
- Completed 90 percent design packages for sludge transfer system.

Sludge Handling Modification Activities — Activities included:

- Completed cleanout of all process cell work for all four cells. Leveling frames, containment assemblies, leak detectors, sump pump wiring, and video ports are all installed.

Site-Wide Activities — Activities included:

- Continued preparing for receipt of Neutron Radiography Facility (NRF) Training, Research and Isotope Production, General Atomics (TRIGA) fuel by August 2002.
- Continued preparation for Shippingport Pressurized Water Reactor Core 2 SNF removal with the Waste Management Project
- Received Startup Authorization from RL for 200 Area Interim Storage Area (ISA) operations.
- Completed T Plant Contractor Operational Readiness Review (ORR) for Shippingport fuel removal.
- Completed light water reactor fuel receipt dry run at 200 Area ISA.

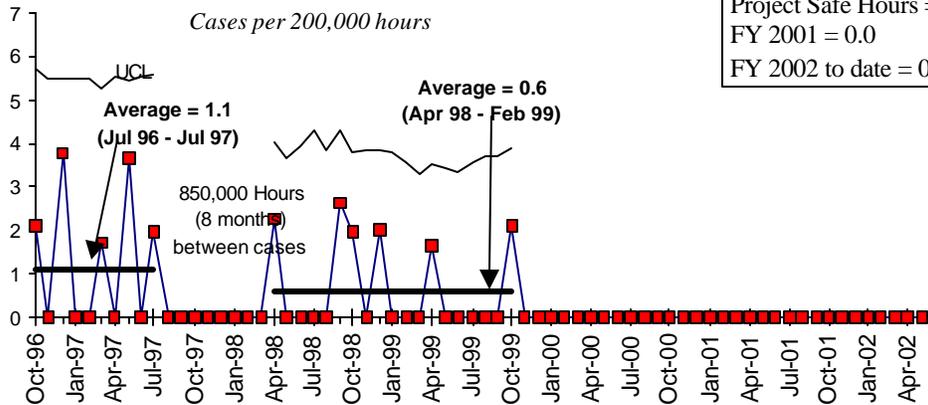
Canister Cleaner Operations — Activities included:

- Removed 264 (511 cumulatively) canisters and prepared for shipment and disposal. A cumulative total of 427 canisters have been shipped to the Environmental Restoration Disposal Facility (ERDF).

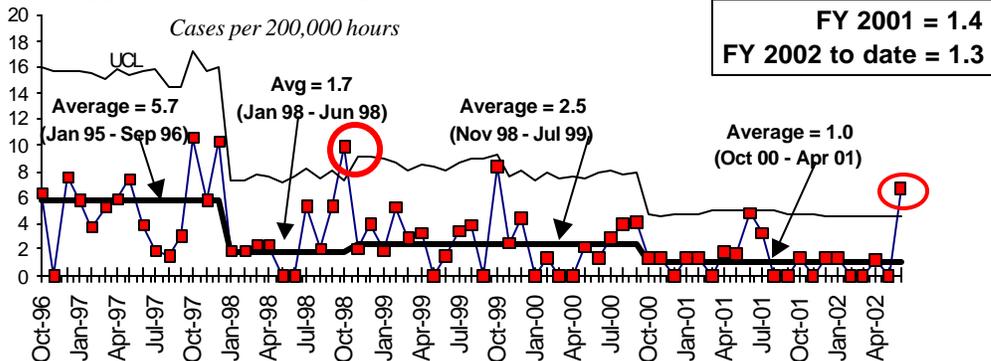
Safety

No Lost Away Workday injuries were reported within the SNF Project, thus allowing an achievement of over 4.7 million safe work hours by the end of June 2002. The project experienced five OSHA Recordable cases during the month, and an increase in the DOE Safety Cost Index. This has been discussed at SNF Project staff meetings, and emphasis is being placed on management commitment and worker involvement utilizing the Integrated Safety Management (ISM) System.

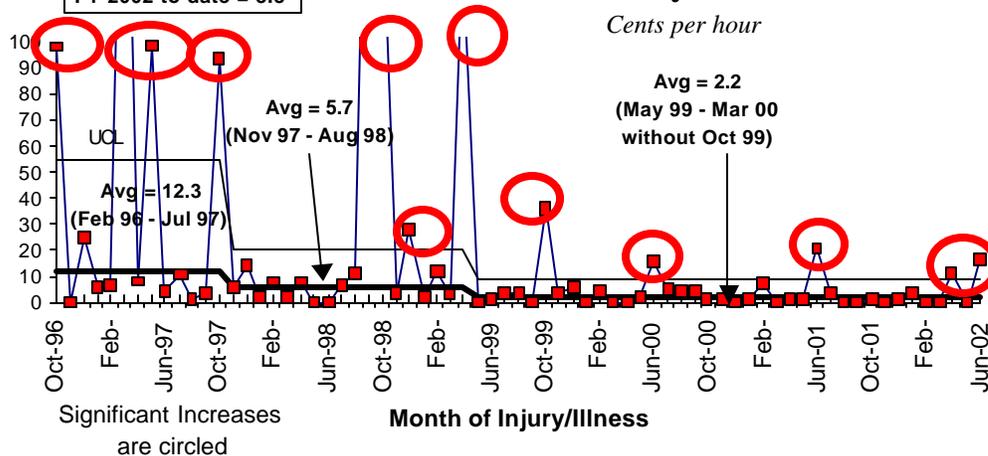
Days Away From Work Case Rate



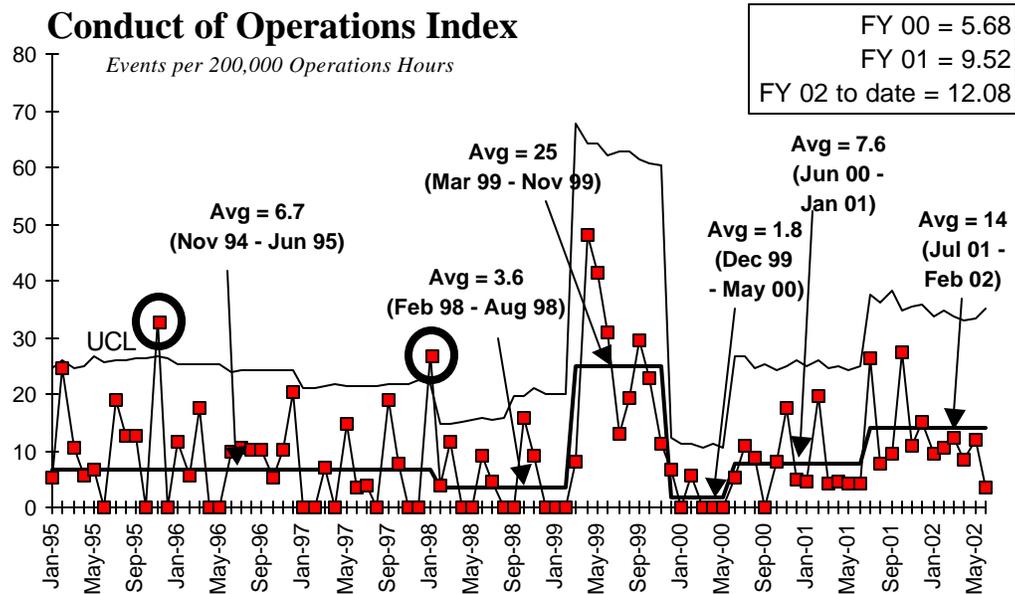
OSHA Recordable Case Rate



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. Management in the Field (MIF) reviews started in June. "Six tools" training has been initiated.

BREAKTHROUGHS / OPPORTUNITIES FOR IMPROVEMENT

Breakthroughs

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 greatest 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 in 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 July 2002.

UPCOMING ACTIVITIES

SWS — Award SWS contract for in-basin equipment by July 19, 2002.

SWS — Complete Sludge Transportation System 100 percent design in July 2002.

Site-Wide Activities — Perform light water reactor (LWR) SNF standard startup review in July 2002.

FTS — Complete Construction Acceptance Testing (CAT) by July 31, 2002.

FTS — Begin Acceptance Test Procedures (ATP) by August 1, 2002.

Site-Wide Activities — Ship NRF TRIGA fuel to 200 Area ISA in August 2002.

Site-Wide Activities — Receive initial Shippingport Fuel at CSB in August 2002.

FTS — Complete contractor ORR in August 2002.

SWS — Complete construction by September 30, 2002 (M-34-12-T01).

FTS — Complete DOE ORR in September 2002.

SWS — Receive cask and container for sludge in September 2002.

SWS — Complete construction of SWS by September 30, 2002 (M-34-12-T01).

FTS — Begin KE to KW fuel transfer scheduled for mid-October 2002 (M-34-17) by November 30, 2002.

Sludge Retrieval System (SRS) — Complete ORR in November/December 2002.

SRS — Operational by December 31, 2002 (M-34-08).

Fuel Movement — Complete removal of 957 MTHM from KW Basin by December 31, 2002 (M-34-18A).

MCO Welding — Begin welding of MCOs at CSB by February 3, 2003.

MILESTONE ACHIEVEMENT

Number	Milestone Title	Type (TPA/DNFSB/PI)	Due Date	Actual Date	Forecast Date	Status/Comments
M-34-06-T01	Initiate K West (KW) Basin Spent Nuclear Fuel (SNF) Canister Cleaning Operations	TPA	08/31/01	3/15/02		Complete
M-34-29	Complete K East (KE) Basin and KW Basin facility modifications for AFTS casks transportation system	TPA	3/31/02		08/05/02	Behind schedule. CAT will complete 7/31/02. Acceptance Test Procedures (ATP) will start 8/1/02 and go for a minimum of 4 days (schedule very challenging)
M-34-12-T01	Complete construction of SWS	TPA	09/30/02		09/30/02	On schedule (schedule very challenging)
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 957 MTHM of SNF from the KW Basin	TPA/DNFSB	12/31/02		12/31/02	Currently 63 days behind schedule. Taking actions to recover schedule.
M-34-08	Initiate full scale KE basin sludge removal	TPA/DNFSB	12/31/02		12/31/02	On schedule (schedule very challenging)
M-34-27-T01	Complete removal of 1252 MTHM 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 1619 MTHM 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

MILESTONE ACHIEVEMENT (CONTINUED)

Number	Milestone Title	Type (TPA/DNF SB/PI)	Due Date	Actual Date	Forecast Date	Status/ Comments
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
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 CVD 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

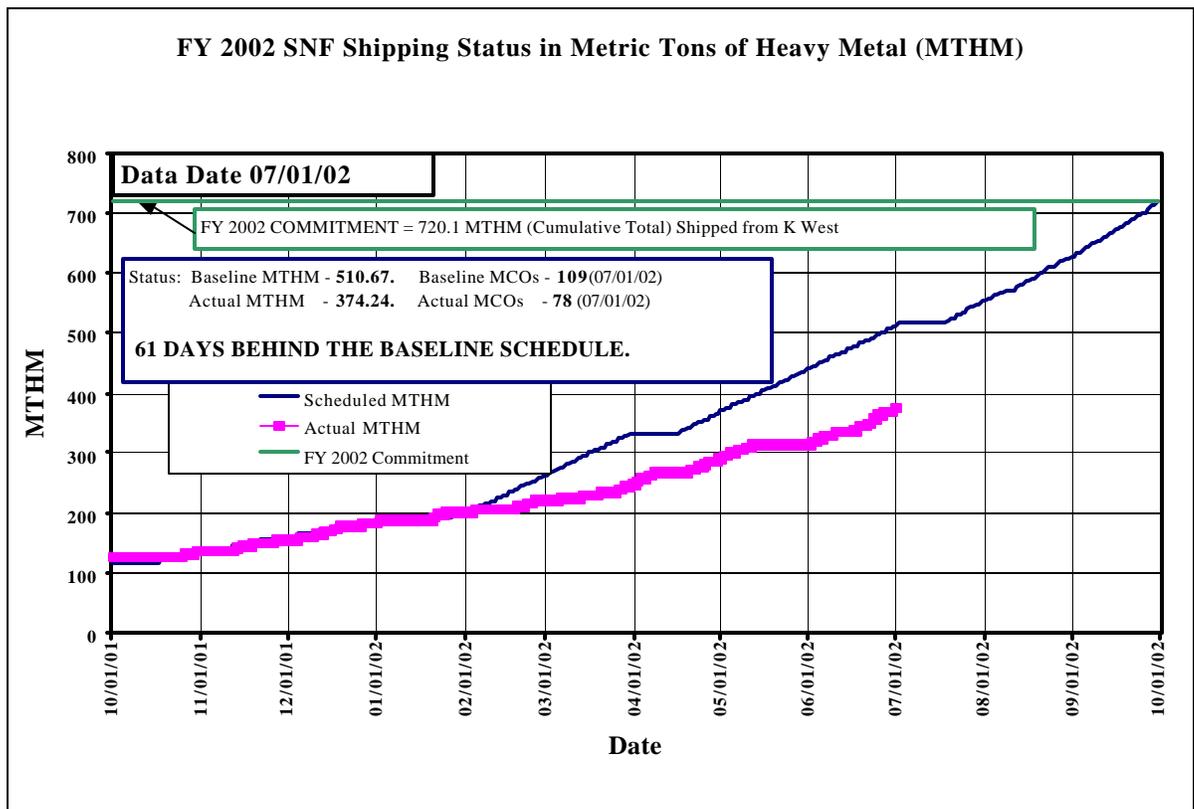
Status: A cumulative total of 78 MCOS containing 374.24 MTHM have been shipped. Currently 61 days (31 MCOS, 135.76 MTHM) behind the baseline schedule.

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

Status: KW and KE equipment CAT will complete July 31, 2002. ATP will start August 1, 2002 and go for a minimum of four days (schedule very challenging)

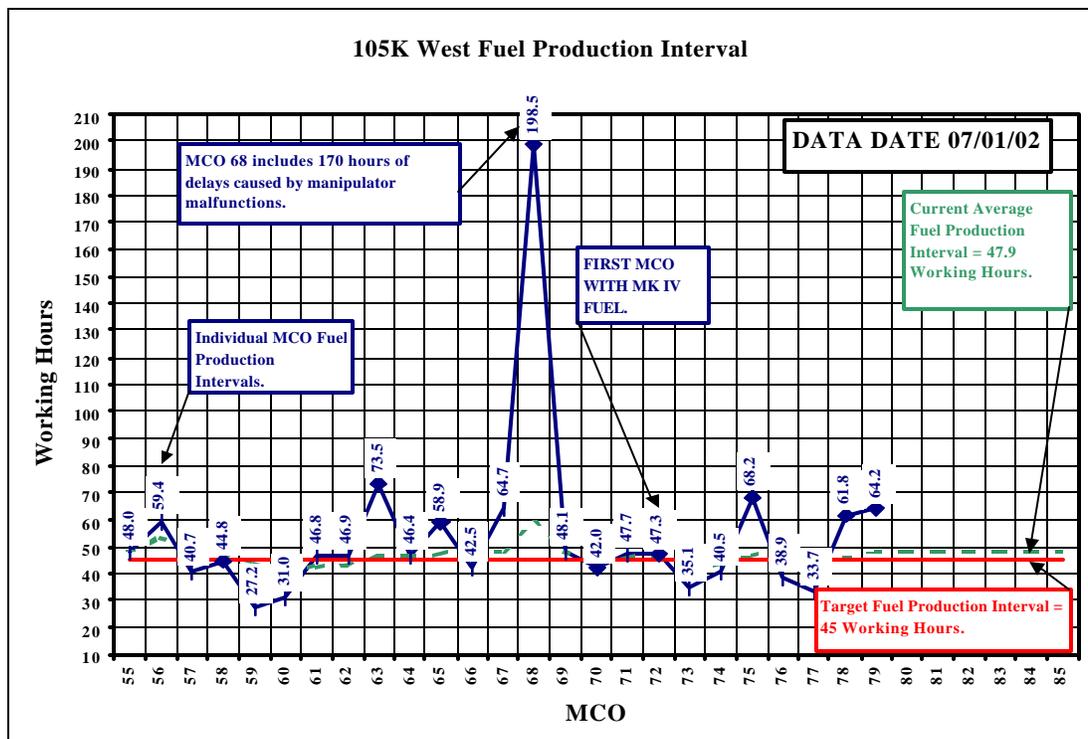
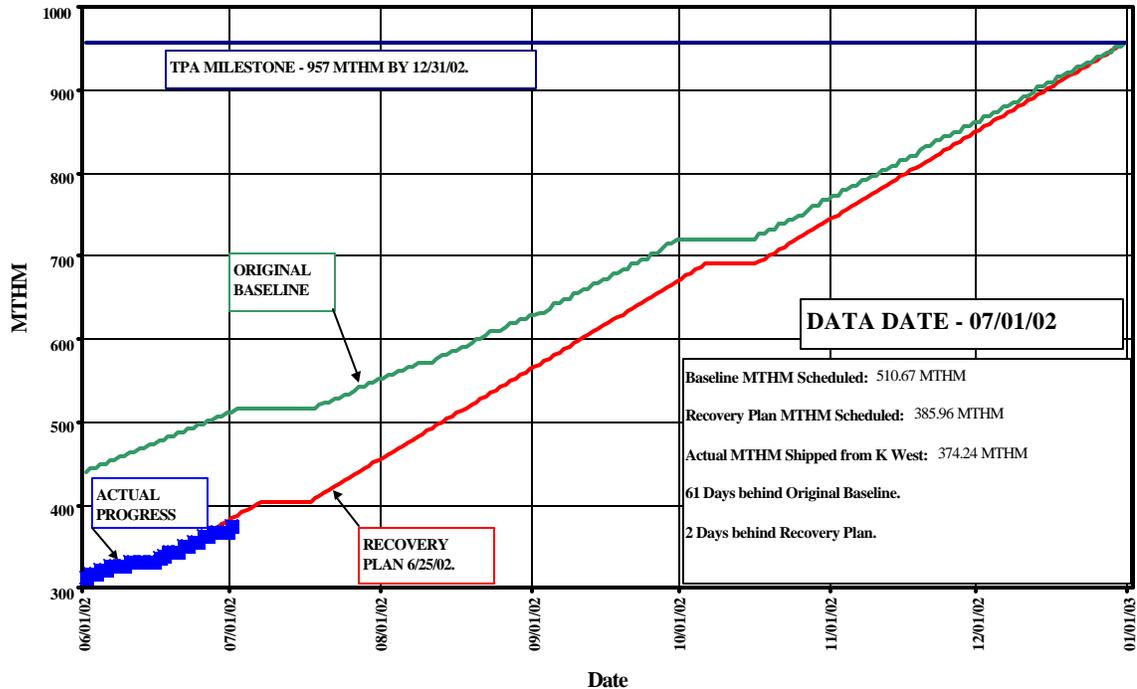
Commence KE to KW Fuel Transfer by November 30, 2002

Status: On schedule.

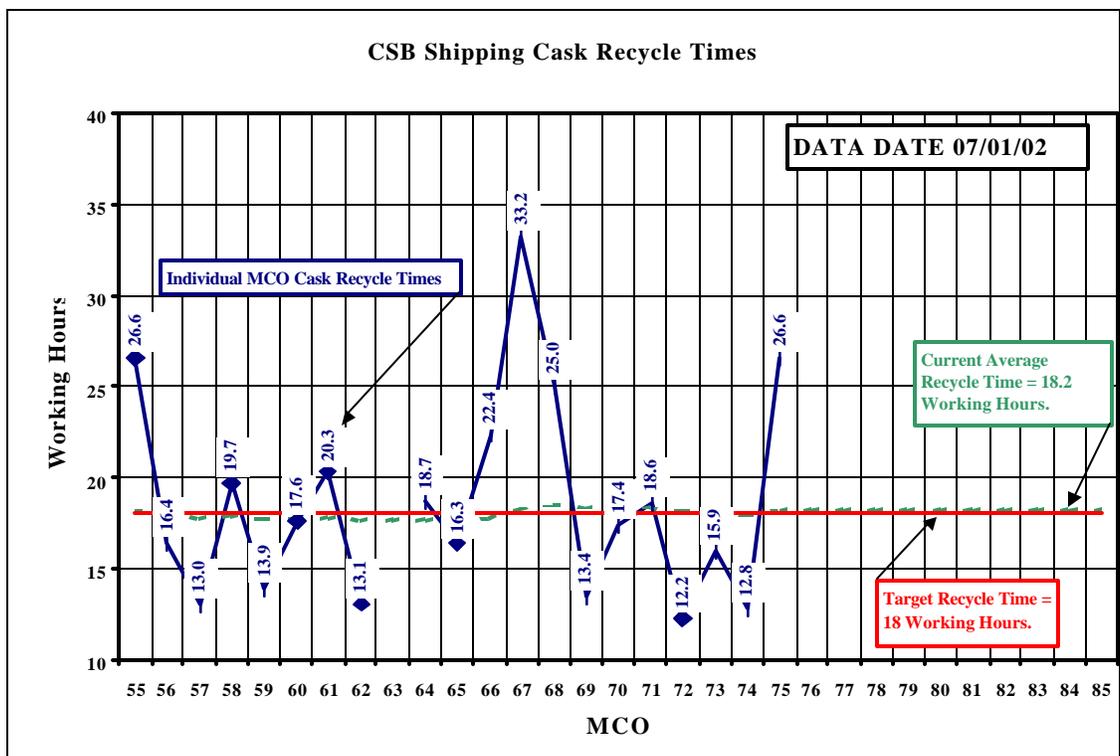
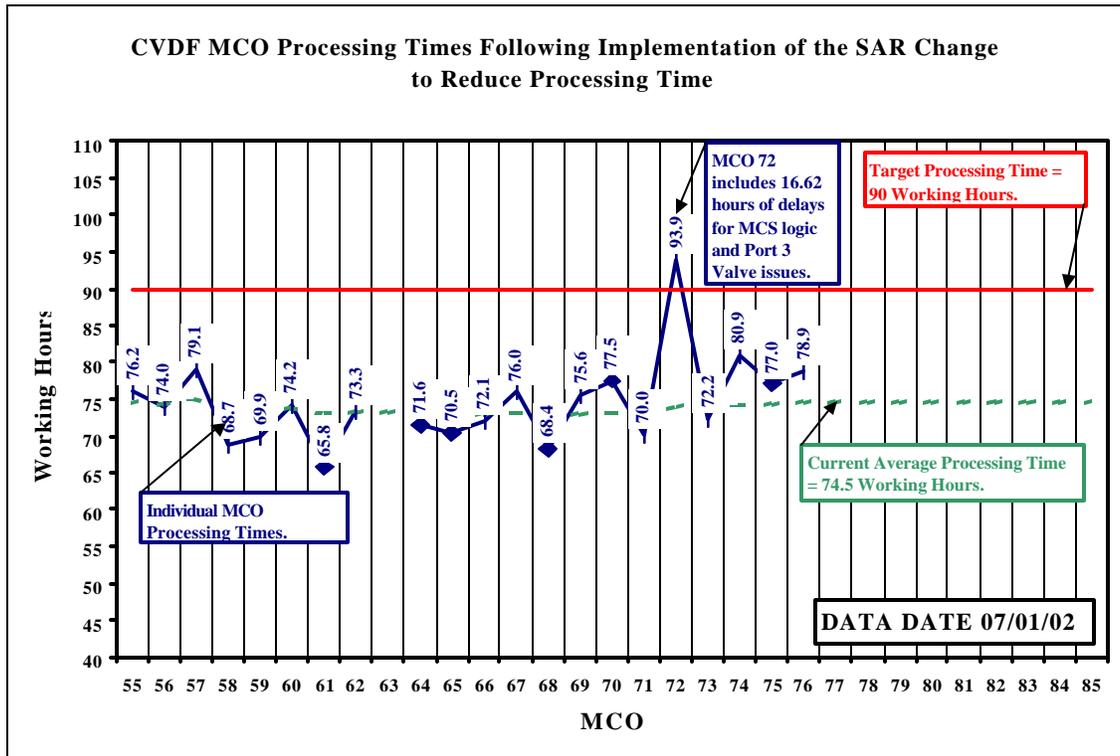


PERFORMANCE OBJECTIVES (CONTINUED)

Metric Tons Heavy Metal (MTHM) Shipment Recovery Plan



PERFORMANCE OBJECTIVES (CONTINUED)



PERFORMANCE OBJECTIVES (CONTINUED)

EXPECTATION: Move Sludge and Water from K Basins

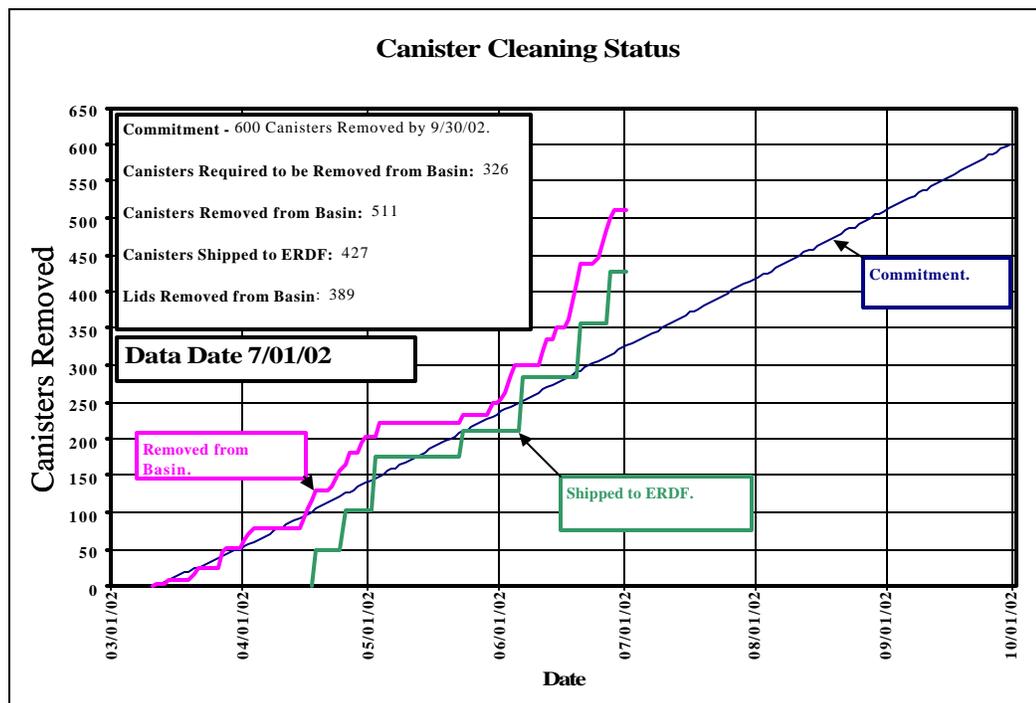
Initiate Sludge Movement by December 31, 2002

Status: Modified procurement and incorporated self-performed construction of in-basin equipment to accommodate schedule requirements. Resolved all technical issues related to nuclear safety. Completed large diameter containers (LDC) initial proof of principle tests. Completed 90 percent design packages for KE in-basin modifications and sludge transfer system. Forecast to initiate sludge movement is December 31, 2002. Schedule is very challenging.

EXPECTATION: Remove canisters from K Basins

Remove 600 canisters from KW by fiscal year end.

Status: A total of 511 canisters have been cleaned fiscal year to date and 427 canisters were shipped to ERDF. The SNF project is 185 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:** Awaiting approval of 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)

		FYTD							
By PBS		BCWS	BCWP	ACWP	SV	%	CV	%	BAC
PBS RS03 WBS 3.2.3.1	SNF Project, 100 K Basins	\$ 91,739	86,397	\$ 98,693	\$ (5,342)	-6%	\$ (12,296)	-14%	\$ 121,396
PBS RS03 WBS 3.2.3.2	Canister Storage Building (to2004)	\$ 6,964	\$ 7,093	\$ 7,181	\$ 129	2%	\$ (88)	-1%	\$ 9,388
PBS RS03 WBS 3.2.3.3	200 Intrim Storage Area (to2004)	\$ 2,142	\$ 1,154	\$ 1,166	\$ (988)	-46%	\$ (12)	-1%	\$ 2,935
PBS RS03 WBS 3.2.3.4	SNF Project Management and Support	\$ 27,985	\$ 27,950	\$ 26,599	\$ (35)	0%	\$ 1,351	5%	\$ 38,692
Total		\$ 128,830	\$ 122,594	\$ 133,639	\$ (6,236)	-5%	\$ (11,045)	-9%	\$ 172,411

FY TO DATE SCHEDULE / COST PERFORMANCE

The SNF FYTD unfavorable schedule variance is primarily driven by the following areas, which are behind: FTS construction, SWS engineering/procurement, Canister Cleaning, Fuel Removal and Deactivation. The unfavorable cost variance is primarily driven by additional scope in FTS construction/engineering, SWS engineering and procurement, Facility maintenance/operations and actual labor rates being higher than planned.

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: (-\$6.2M)

3.2.3.1 SNF Project, 100K Area (-\$5.3M)

Description /Cause: The unfavorable 6 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 (-\$1.0M)

Description /Cause: The unfavorable 46 percent schedule variance is primarily due to delays in the transfer of PWR Core, KE wall/floor decontamination system and Deactivation.

Impact: None to report.

Corrective Action: None required.

FY TO DATE SCHEDULE / COST PERFORMANCE (CONTINUED)

Cost Variance Analysis: (-\$11.0M)

3.2.3.1 SNF Project, 100K Area (-\$12.3M)

Description /Cause: The unfavorable 14 percent cost variance is primarily due to emergent work in FTS and SWS and actual labor rates being higher than planned.

Impact: None to report.

Corrective Action: None required.

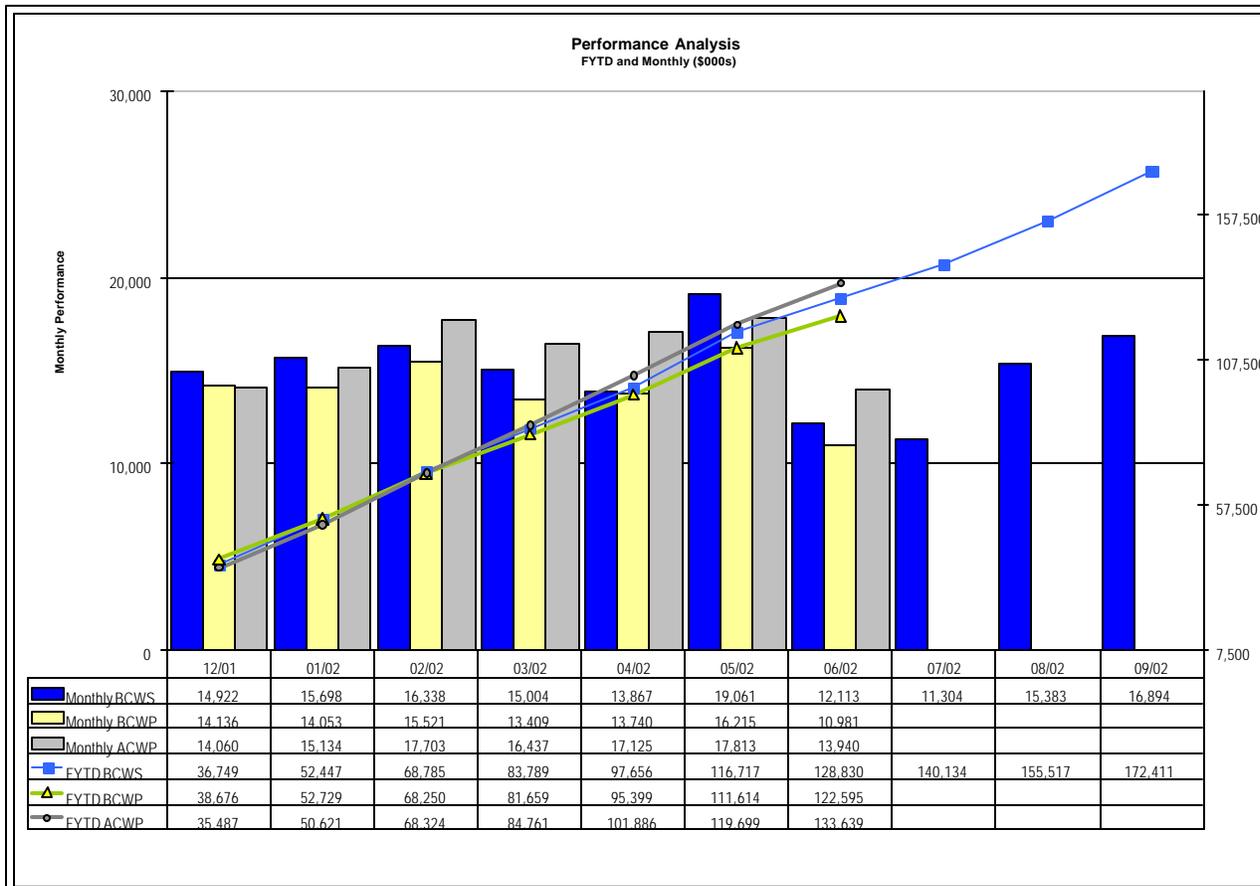
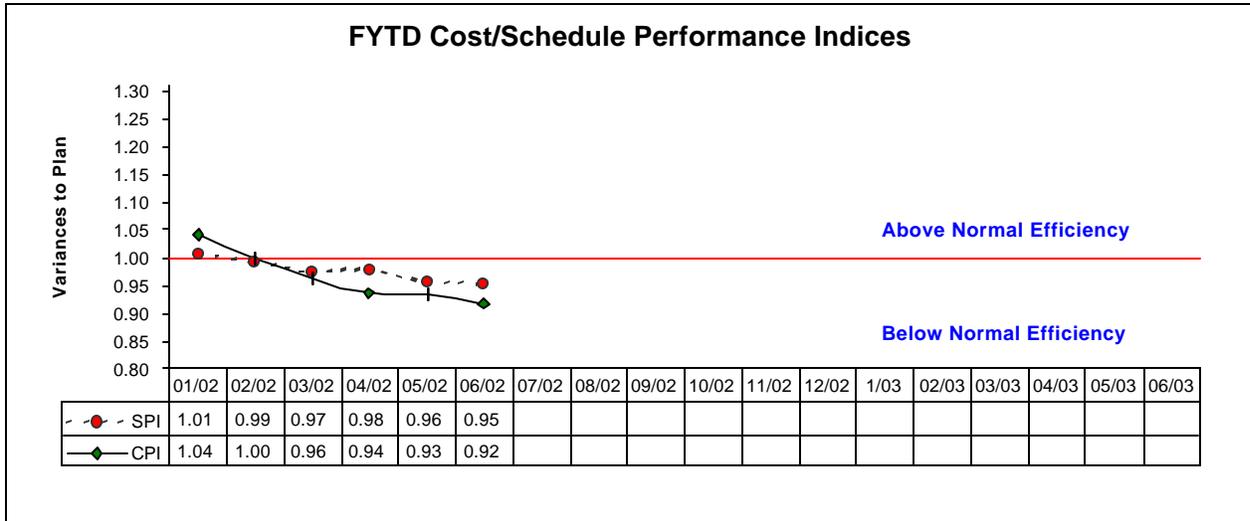
3.2.3.4 SNF Project Management and Support (+\$1.4M)

Description/Cause: The favorable 5 percent cost variance is due to FY 2001 underruns in the infrastructure support account and project direction.

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	\$ 181,211	\$ (4,822)
			0
Total	\$ 176,389	\$ 181,211	\$ (4,822)

Status through 6/30/2002

ISSUES

Technical Issues

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

Corrective Actions: Develop path forward for final disposition of MCO number 63

Impact: MCO number 63 is under surveillance in Bay two of the CVDF. A report has been prepared and issued by Pacific Northwest National Laboratory (PNNL) and recommendations to reduce the potential for future leaks are under evaluation. The overall recommended disposition for the MCO is to send it to the CSB in preparation for welding. Activities to move the MCO to the CSB are underway.

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

Corrective Actions: Fluor consulting is continuing to evaluate additional repair action items that can reduce random equipment failures.

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

Issue: Production schedule improvement

Corrective Actions: Increase MCO production. A "Witness" model is being developed to 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 July 2002. Evaluating additional "breakthroughs" for production improvements.

Impact: The SNF Project's maximum production rate is required to meet December 30, 2002 fuel movement milestone date.

Issue: FTS construction completion

Corrective Actions: KW and KE equipment CAT will complete July 31, 2002. Acceptance Test Procedures will start August 1, 2002 and go for a minimum of four days.

Impact: FTS milestone scheduled for completion March 31, 2002, is forecast to for completion by August 5, 2002.

Issue: Sludge and Water System Schedule Delays

Corrective Actions: Evaluation of recent information regarding vendor delivery dates for trailers, casks, and LDC. Complete the design of physical sampling process. Evaluate bids for in-basin design. Bids are in and will be awarded July 23, 2002.

Impact: The September 30, 2002 milestone date is still possible for construction completion, however, vendor dates have been difficult to maintain.

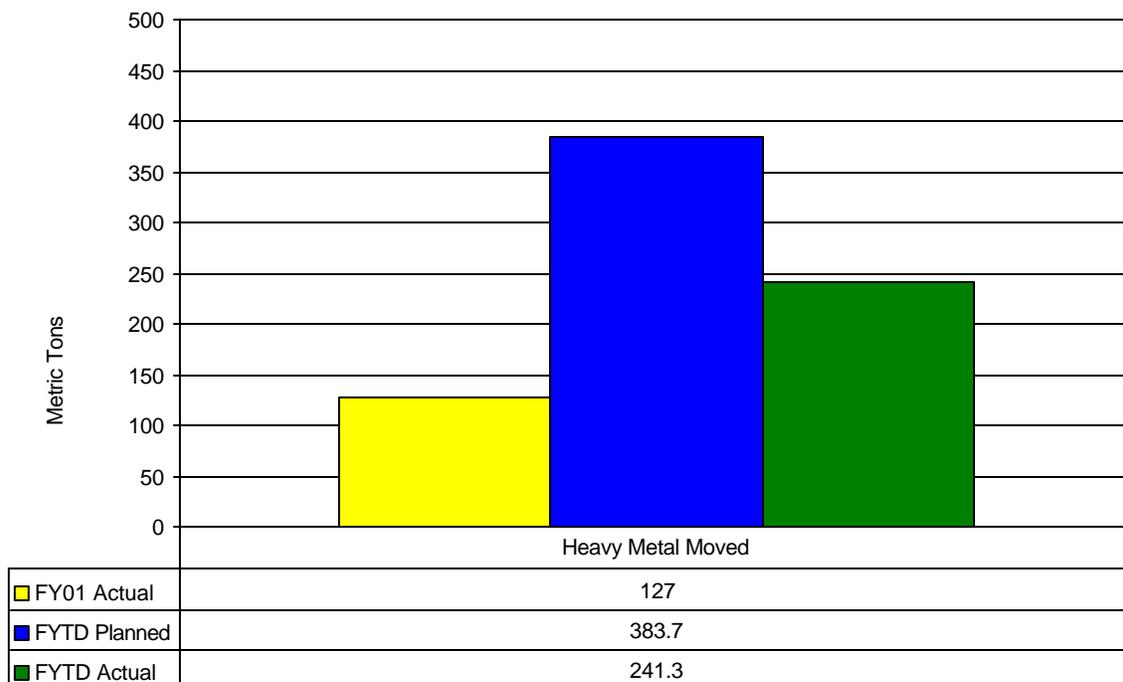
Regulatory, External, and DOE Issues and DOE Requests

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 Qualification Requirement	0	70		At RMB for consideration and approval
RS03-02-010		6/28/02	KE Rad Con FY2003 Baseline Plan	0	2,308		At RMB for consideration and approval

HEAVY METAL MOVED



Heavy Metal Moved: Equipment problems continue to cause lower than expected production rates. Several efforts are underway and others are being studied to improve equipment reliability and maintainability as well as operational efficiency.