



Section D

Spent Nuclear Fuel

PROJECT MANAGERS

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SUMMARY

The Spent Nuclear Fuel (SNF) mission consists of the Spent Nuclear Fuel Project WBS 1.3.1.1 (Project Baseline Summary [PBS] WM01) and the subsequent Canister Storage Building (CSB) Operations Project WBS 1.3.2.1 (PBS WM02), which does not start until FY 2004.

NOTE: Unless otherwise noted, the Safety, Conduct of Operations, Milestone Achievement, and Cost/Schedule data contained herein is as of September 30, 2000. All other information is as of October 19, 2000.

Top 5 Accomplishments for FY 2000

Phased Startup Initiative (PSI) – Implemented a strategy to conduct early testing of the K West (KW) Fuel Retrieval System (FRS) and the Integrated Water Treatment System (IWTS). This reduced the schedule risk to fuel movement from KW basin by validating the fuel cleaning process, provided early identification of problems to provide maximize time available for correction, and accelerated personnel training and procedure preparation to maximize readiness preparations. Results from the PSI are expected to improve the fuel production rates in FY 2001 (Progress).

Sludge Strategy – Successfully implemented a Baseline Change Request, which accelerates the completion of sludge removal by one year from August 2005 to August 2004 and reduces total project life cycle cost by \$16 million (Momentum).

Construction Projects – Completed construction and testing on 2 facilities; Canister Storage Building (CSB) and Cold Vacuum Drying Facility (CVDF). These facilities were subsequently turned over to the Operations organizations. Also completed major renovations on KW Basin in preparation for fuel movement activities. Completed construction of the Interim Storage Area (ISA) adjacent to the CSB to facilitate storage of Hanford Site SNF on 200 Area Plateau (Progress).

Safety – The SNF Project twice achieved one million safe manhours worked during a time when construction was at a peak (Progress).

SNF Storage Projects – Completed integrated testing of the Cask Transport System (CTS) with other key components of the fuel-removal process and formally turned over to CSB Operations. Fabrication and testing activities for MCOs continues. To date, a total of 38 MCOs have been delivered ahead of schedule. Fabrication of the MCO baskets continues at the 328 shop at the Hanford Site. Assembly is complete on 216 Mark 1A baskets (with the exception of the outside posts). Delivery of the completed baskets is expected in December 2000 (Progress).

Additional FY 2000 Accomplishments

Progress

Safety Analysis Documentation – Obtained DOE approval of over 4,000 pages of safety documentation crucial to Project operations, including final safety analyses for the Canister Storage Building (CSB), the Cold Vacuum Drying Facility (CVDF), work in the K Basins, and Project transportation systems. Authorization basis documents have been implemented for CSB, CVDF, and Project transportation systems.

HANSF analysis tool – The HANSF analysis tool has been used effectively to consider a wide variety of phenomena inside a Multi-Canister Overpack such as fuel oxide type, convective and radiant heat transfer, and the potential for fission product release.

Fiscal year-to-date milestone performance (EA, DOE-HQ, and RL) shows that three out of five milestones (60 percent) were completed on or ahead of schedule, one RL milestone (20 percent) was completed late and one RL milestone (20 percent) is overdue.

The Milestone Achievement details, found following the cost and schedule variance analysis, provide further information on all milestone types.

ACCOMPLISHMENTS THIS REPORTING PERIOD

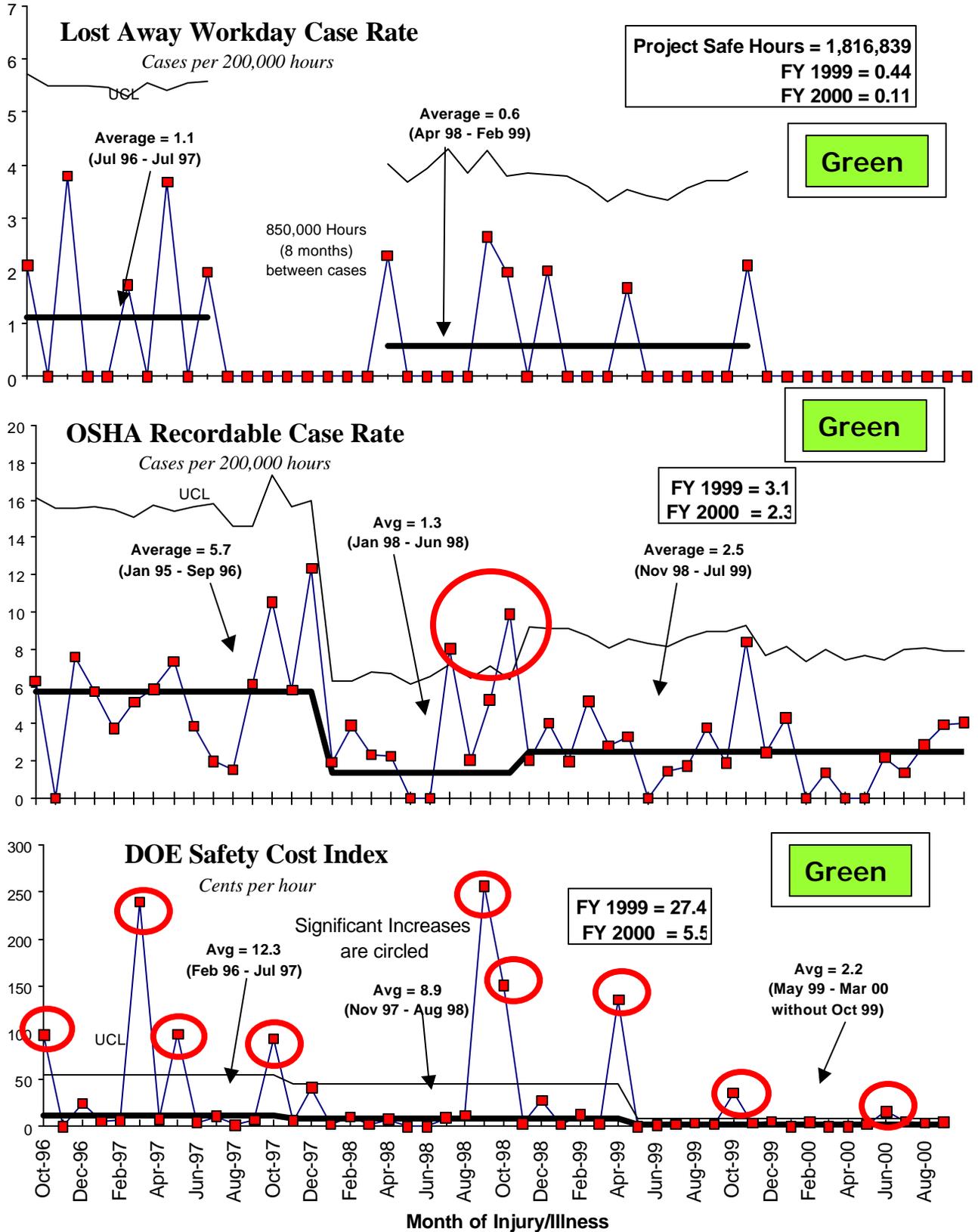
- Successfully completed Contractor Operations Readiness Review (ORR) on CSB, K West Basin, and Project transportation systems.
- Commenced Contractor ORR for the CVDF.
- Completed cold testing in the K West Basin with pieces of pipe designed to resemble irradiated, or spent, fuel.
- Initiated hot testing on September 30 by decapping a select number of actual canisters containing spent fuel, washing the fuel, and sorting the fuel utilizing the Fuel Retrieval System (FRS) and the Integrated Water Treatment System (IWTS).
- Began DOE Operational Readiness Review.

SAFETY

The project has achieved over 1,800,000 safe work hours, and no Lost Away Workday Cases have been reported in the last eleven months. The number of safe hours has significantly improved over FY 1999. Although the SNF Project experienced some safety performance degradations with the start of FY 2000, performance continues to improve.

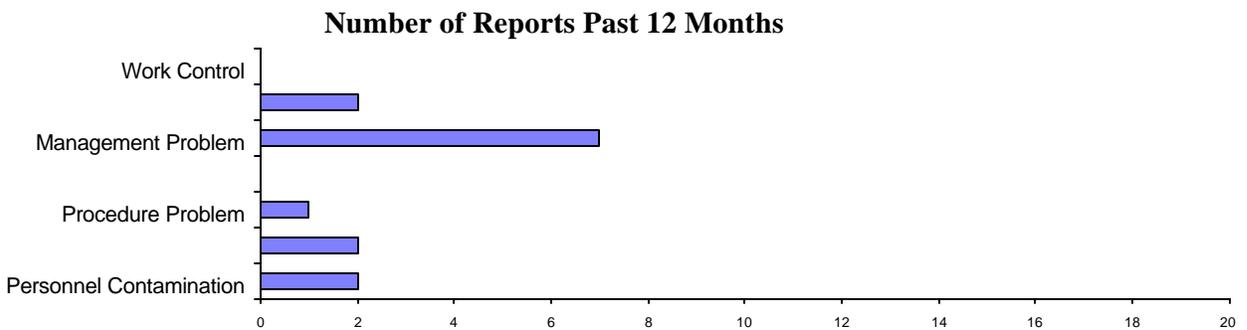
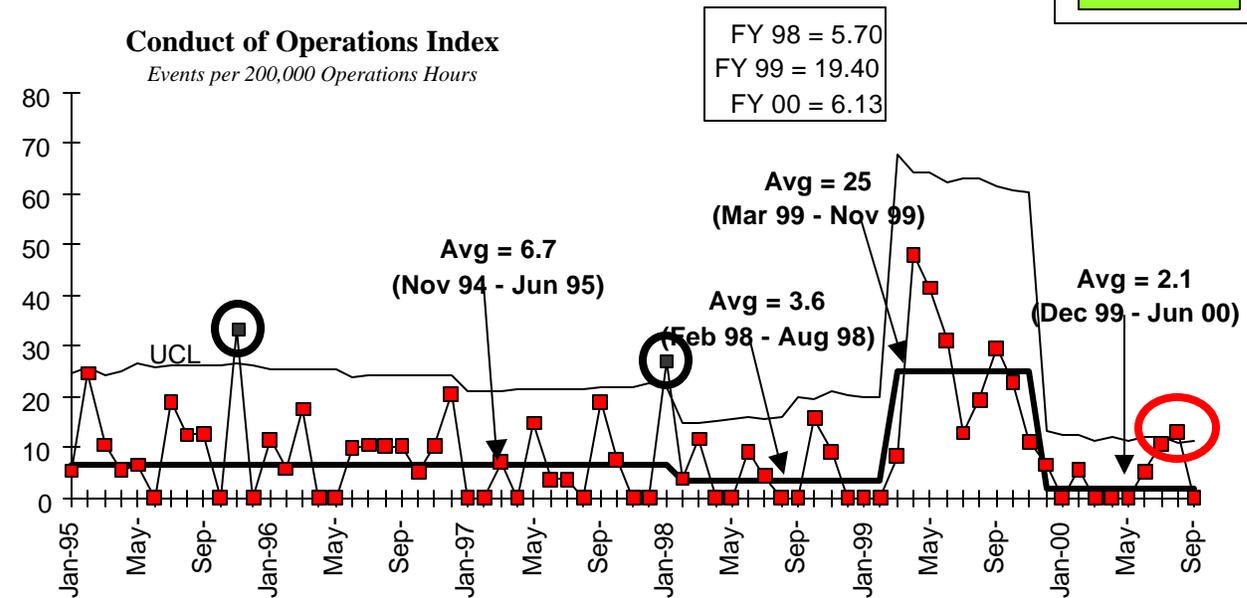
Two OSHA cases in July raised the trend above the average. The project continues to monitor the rising trend over the last four months. However, the case rate has improved 25 percent in FY 2000 over FY 1999.

The past fifteen of seventeen months for the DOE Cost Index have been below average.



CONDUCT OF OPERATIONS / ISMS STATUS

Green



From June through September, there were six Conduct of Operations incidents reported: four Management Problems, one Lock and Tag, and one Procedure Problem.

ISMS STATUS

Green

- The Integrated Safety Management System (ISMS) Phase I/II verification for the SNF Project was completed on November 19, 1999.
- The Corrective Action Plans for the “Opportunities for Improvement” were developed and transmitted to RL on January 10, 2000.
 - The actions required to enable ISMS implementation to be declared March 31, 2000 are complete. Documentation packages were transmitted to the Environmental, Safety and Health organization. Three of the four packages were reviewed as part of the Project Hanford Management Contract (PHMC) Phase I verification. These items are now complete. The one remaining item needing RL verification (dealing with Chemical Management Implementation) was reviewed by RL on August 11, 2000.

On September 7, 2000, FH received a letter from Keith Klein, DOE-RL, indicating all corrective action packages were sufficient and considered closed. The letter stated, "FHI can now consider the ISMS verification successfully completed."

BREAKTHROUGHS / OPPORTUNITIES FOR IMPROVEMENT

Breakthroughs

Green

Baseline Change Request SNF-2000-009, which documents acceleration of the completion of sludge removal by one year from August 2005 to August 2004 and reduction in total project life cycle cost by \$16 million, was implemented.

Opportunities for Improvement

Operational Readiness Review Sequence – In collaboration with DOE, FH has developed a sequenced ORR process. The initial contractor ORR commenced September 28 covering KW Basin, CSB and CTS. The second contractor ORR kickoff was October 17 at the CVD. In parallel, the DOE ORR starts at KW, CSB and CTS in November.

UPCOMING ACTIVITIES

- Complete Contractor Operational Readiness Review in October 2000.
- Continue receipt of MCO shipments.
- K Basins Projects
 - Begin K West Basin fuel removal drying and storage operations in November 2000.
 - Complete K East Basin Sludge Loadout conceptual design January 2001.
 - Complete K East Basin IWTS definitive design April 2001.
- Initiate K West Basin canister cleaning December 2000.
- Submit Annual Debris Report to Department of Ecology/EPA in May 2001.

COST PERFORMANCE (\$M):

	BCWP	ACWP	VARIANCE
Spent Nuclear Fuel	\$198.2	\$201.7	- \$3.5

The unfavorable cost variance of \$3.5 million (2 percent) is primarily due to Hanford Site assessments higher than baseline and additional facility start up and engineering required as a result of first-of-a-kind equipment issues at K Basins and the CVD Facility.

SCHEDULE PERFORMANCE (\$M):

	BCWP	BCWS	VARIANCE
Spent Nuclear Fuel	\$198.2	\$201.8	- \$3.6

The unfavorable schedule variance of \$3.6 million (2 percent) is primarily a result of the following: fabrication and installation of the KE floor sludge retrieval system postponed until FY01; the KW canister cleaning work scope has been placed on hold pending a path forward decision; KE IWTS design behind schedule due to rebid for competitive price evaluation and integrated sludge/fuel strategy; and the procurements of the CSB impact absorbers and some MCO plugs have been postponed until FY01.

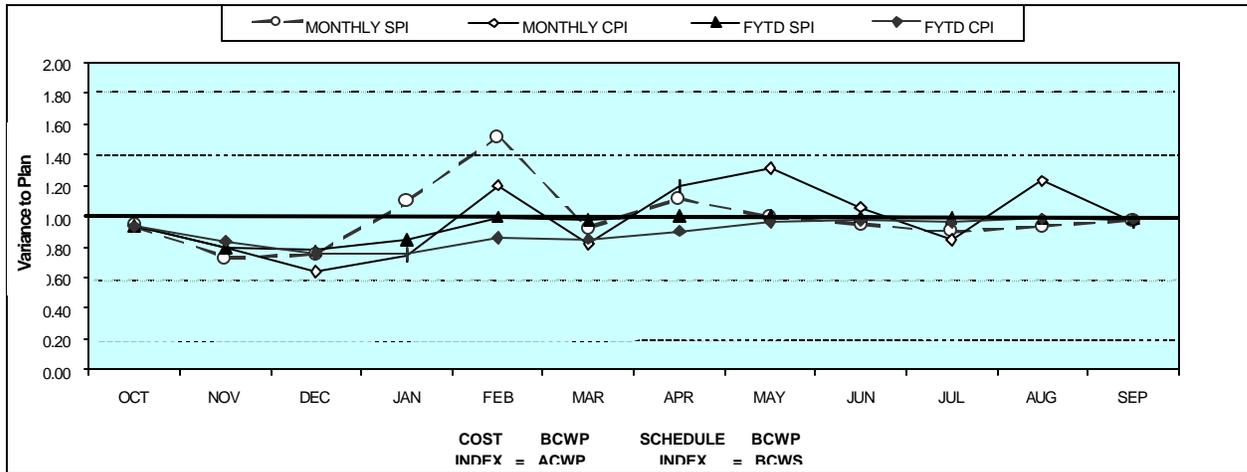
FY 2000 COST/SCHEDULE PERFORMANCE – ALL FUND TYPES CUMULATIVE TO DATE STATUS – (\$000)

By PBS	FYTD						
	BCWS	BCWP	ACWP	SV	%	CV	%
PBS WM01 Spent Nuclear WBS 1.3 Fuel Project	\$ 201,764	\$ 198,178	\$ 201,710	\$ (3,586)	-2%	\$ (3,533)	-2%
Total	\$ 201,764	\$ 198,178	\$ 201,710	\$ (3,586)	-2%	\$ (3,533)	-2%

Authorized baseline as per the Integrated Planning Accountability, and Budget System (IPABS) Project Execution Module (PEM)

COST/SCHEDULE PERFORMANCE INDICES (MONTHLY AND FYTD)

Green



FY 2000	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MONTHLY SPI	0.94	0.73	0.75	1.09	1.52	0.92	1.12	0.99	0.95	0.90	0.93	0.97
MONTHLY CPI	0.93	0.79	0.64	0.74	1.20	0.82	1.19	1.31	1.06	0.85	1.23	0.96
FYTD SPI	0.94	0.79	0.78	0.85	0.99	0.98	1.00	1.00	1.00	0.99	0.98	0.98
FYTD CPI	0.93	0.84	0.76	0.75	0.86	0.85	0.90	0.96	0.97	0.96	0.98	0.98
MONTHLY BCWS	\$8,574	\$19,209	\$15,681	\$12,081	\$15,753	\$20,085	\$19,582	\$28,731	\$14,312	\$11,781	\$19,330	\$16,646
MONTHLY BCWP	\$8,049	\$13,968	\$11,770	\$13,221	\$23,909	\$18,511	\$21,838	\$28,517	\$13,561	\$10,596	\$18,066	\$16,172
MONTHLY ACWP	\$8,626	\$17,581	\$18,370	\$17,831	\$19,906	\$22,611	\$18,286	\$21,703	\$12,818	\$12,521	\$14,689	\$16,769
FYTD BCWS	\$8,574	\$27,783	\$43,463	\$55,544	\$71,297	\$91,382	\$110,963	\$139,694	\$154,007	\$165,788	\$185,118	\$201,764
FYTD BCWP	\$8,049	\$22,016	\$33,786	\$47,008	\$70,917	\$89,428	\$111,265	\$139,783	\$153,344	\$163,939	\$182,006	\$198,178
FYTD ACWP	\$8,626	\$26,207	\$44,577	\$62,408	\$82,314	\$104,925	\$123,210	\$144,913	\$157,731	\$170,253	\$184,942	\$201,710

COST VARIANCE ANALYSIS: (- \$3.5M)

WBS/PBS

Title

1.3.1/WM01 Spent Nuclear Fuel Project

Description/Cause: Ended fiscal year 2000 within threshold.

Impact: None.

Corrective Action: None.

SCHEDULE VARIANCE ANALYSIS: (- \$3.6M)

WBS/PBS

Title

1.3.1/ WM01 Spent Nuclear Fuel Project

Description /Cause: Ended fiscal year 2000 within threshold.

Impact: None.

Corrective Action: None.

FUNDS MANAGEMENT FUNDS VS SPENDING FORECAST (\$000) FY TO DATE THROUGH SEPTEMBER 2000 (FLUOR HANFORD, INC. ONLY)

	Project Completion *			Post 2006 *			Line Items *		
	Funds	Actual Cost	Variance	Funds	Actual Cost	Variance	Funds	Actual Cost	Variance
The River									
1.3 Spent Nuclear Fuel WM01 Operating Line Item	\$ 179,045	\$ 178,640	\$ 405				\$ 22,669	\$ 22,653	\$ 16
Total Spent Nuclear Fuel Operating	\$ 179,045	\$ 178,640	\$ 405						
Total Spent Nuclear Fuel Line Item							\$ 22,669	\$ 22,653	\$ 16

* Control Point

Above chart reflects FH Project structure, which divides certain PBS's between projects (e.g., TP12 – NMS and the River Corridor project). Consequently, these figures may differ from those shown elsewhere in this report (as generated in the PEM system).

ISSUES

None.

BASELINE CHANGE REQUESTS CURRENTLY IN PROCESS (\$000)

Green

PROJECT CHANGE NUMBER	DATE ORIGIN.	BCR TITLE	FY00 COST IMPACT \$000	S	C	H	T	E	C	H	DATE TO CCB	CCB APR'VD	RL APR'VD	CURRENT STATUS
SNF-2000-019	5/9/00	FRS/IWTS Phased Startup Initiative - Adding Hot Testing	\$2,816	Y	Y						8/21/00	8/24/00	9/19/00	Approved
SNF-2000-021	7/27/00	SNF Project FY 2001 MYWP Rate Impacts		Y	Y						8/1/00	8/30/00	9/29/00	Approved
FH-2001-002	9/25/00	FY2001 Fee Reduction to 90%	-\$1,030											Draft Prepared
ADVANCE WORK AUTHORIZATIONS														
		Nothing to report at this time.												

MILESTONE ACHIEVEMENT

MILESTONE TYPE	FISCAL YEAR-TO-DATE				REMAINING SCHEDULED			TOTAL FY 2000
	Completed Early	Completed On Schedule	Completed Late	Overdue	Forecast Early	Forecast On Schedule	Forecast Late	
Enforceable Agreement	1	1	0	0	0	0	0	2
DOE-HQ	0	0	0	0	0	0	0	0
RL	1	0	1	1	0	0	0	3
Total Project	2	1	1	1	0	0	0	5

Only TPA/EA milestones and all FY2000 overdue and forecast late milestones are addressed in this report. Milestones overdue are deleted from the Milestone Exception Report once they are completed. The following chart summarizes the FY2000 TPA/EA milestone achievement and a Milestone Exception Report follows. The last milestone table summarizes the first six months of FY2001 TPA/EA milestones.

STATUS AS OF 9/30/2000

FY 2000 Tri-Party Agreement / EA Milestones

Number	Milestone Title	Status
M-34-14A (S06-97-009)	“Complete K West Basin Cask Facility Modifications”	Due 2/29/00 — Completed on schedule.
M-34-04 (S01-99-124)	"Submit Remedial Design Report/Remedial Action Work Plan for the K Basins"	Due 3/31/00 – Completed over one month early (February 10, 2000).
M-34-05 (T01)	"Submit Report on Quantities, Character, and Management of K Basins Debris"	Due 5/31/00 – Completed on schedule.

DNFSB Commitments

	Nothing to report at this time.	
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MILESTONE EXCEPTION REPORT

<u>Number/WBS</u>	<u>Level Milestone Title</u>	<u>Baseline Date</u>	<u>Forecast Date</u>
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OVERDUE – 1

S03-98-602	RL Contractor Operational Readiness Review	09/07/00	11/15/00
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1.3.1

Cause: Unforeseen delays in construction and testing brought on from technical issues within the facilities.

Impact: None.

Corrective Action: Complete construction and testing to allow conducting the ORRs.

FY 2001 Tri-Party Agreement / EA Milestones

Number	Milestone Title	Status
M-34-16 (S00-01-900)	"Initiate removal of K West Basin Spent Nuclear Fuel"	Due 11/30/00 – On schedule.
M-34-06-T01	"Initiate K West Basin Spent Nuclear Fuel Canister Cleaning Operations" TPA Change request in preparation to extend due date.	Due 12/31/00 – TPA Change request in preparation to extend due date.

DNFSB Commitments

Nothing to report at this time.

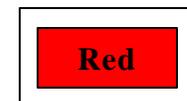
PERFORMANCE OBJECTIVES

Readiness for Fuel Movement (RC-1-1.a-I) — Contractor completion of construction and operational testing, Management Self-Assessment (MSA), and Independent Operational Readiness Review (ORR) by September 14, 2000, to begin moving fuel by November 30, 2000.



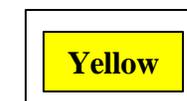
- Start of fuel movement is currently behind schedule to the November due date. The Contractor ORR started on September 28, 2000

Phased Startup Initiative (PSI) (RC-1-1.a-II) — Complete PSI Phases 1 and 2 by April 15, 2000. Includes successful Cold Testing of Integrated Water Treatment System (IWTS) & Fuel Retrieval System (FRS).



- This activity was completed late.

Accelerate Fuel Movement (RC-1SS-1) — Accelerate start of fuel movement.



- Pre-positioning of fuel processed in PSI Phase III will allow early loading of Multi-Canister Overpacks (MCOs).

Phased Startup Initiative (PSI) (RC-1SS-2) — Complete Phases 3 and 4 by August 15, 2000. Includes completion of FRS/IWTS system testing using SNF (real fuel) and Completion of Construction Documentation Phase 2 (CCD2).



- Hot testing began October 18, 2000.

KEY INTEGRATION ACTIVITIES

- Spent Nuclear Fuel (SNF) final disposition interface activities, including Office of Civilian Radiation Waste Management (OCRWM) Quality Assurance (QA) Program implementation, are ongoing with the National SNF Program. The SNF Project submitted eight Corrective Action Closure packages to RL for National SNF Program approval.
- The SNF Project and Waste Management Project continued preparations for K Basins' sludge removal and Shippingport (PA) Pressurized Water Reactor Core 2 SNF removal.
- The Programmatic Agreement between the River Corridor Project and the SNF Project for 324 Building (B Cell) SNF removal was approved.
- Neutron Radiography Facility Training Research and Isotope Production General Atomics (TRIGA) and Fast Flux Test Facility (FFTF) SNF relocation planning is ongoing with the FFTF Project.
- Bechtel Hanford, Inc. transmitted the transfer plan for SNF discovered during upcoming 105F and 105H reactor basins deactivation for SNF Project review and approval.