



# 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 July 31, 2000. All other information is as of August 25, 2000.

A total of 32 Multi-Canister Overpacks (MCOs) were delivered to Hanford ahead of schedule. Fabrication of the MCO baskets continues at the 328 shop at the Hanford Site.

Fiscal year-to-date milestone performance (EA, DOE-HQ, and RL) shows that three out of four milestones (75 percent) were completed on or ahead of schedule and one milestone was completed late.

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

## **ACCOMPLISHMENTS**

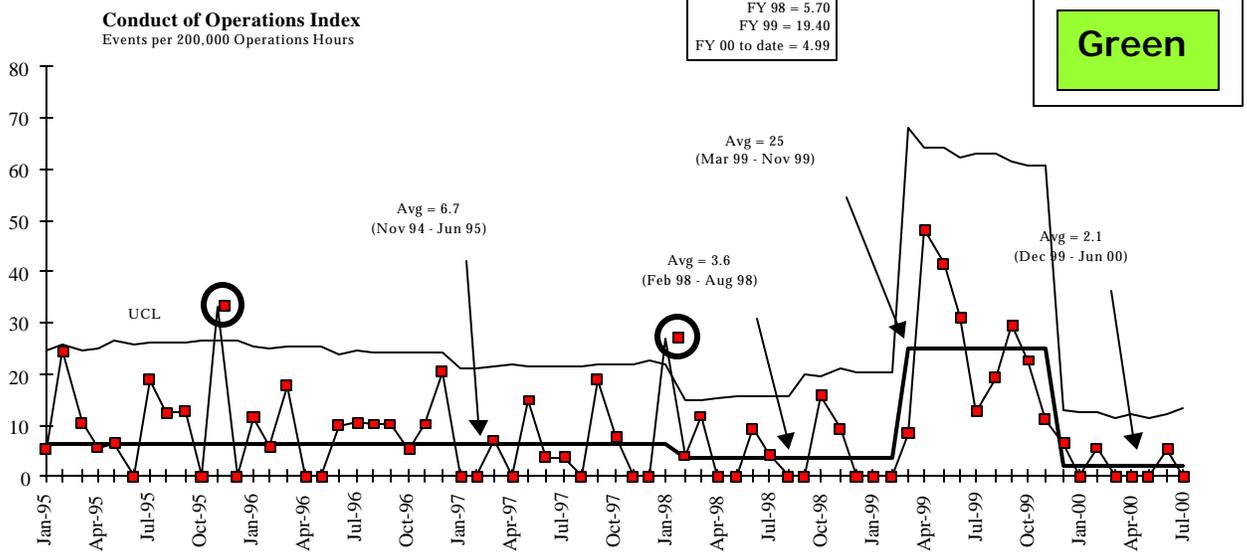
- A total of 32 MCOs were delivered to Hanford ahead of schedule. Fabrication of the MCO baskets continues at the 328 shop at the Hanford Site.
- Four MCO drying cycles using dummy fuel were completed in the Cold Vacuum Drying Facility with favorable results.
- The CSB MCO handling machine Operations are underway for training and procedure validation. Installation of lower impact absorbers was initiated at CSB.
- The Readiness Assessment team is on site and working on preparation activities. DOE Operations Readiness Review (ORR) Team Lead is on site and working with SNF Project personnel in anticipation of ORR start.

## **SAFETY**

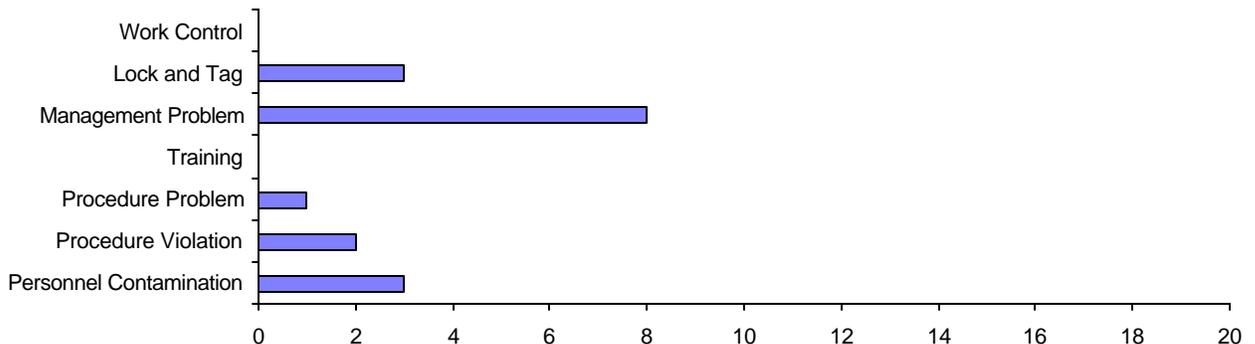
The project has achieved over 1,548,563 safe work hours. The past fourteen of fifteen months for the DOE Cost Index and Severity Rate have been below average. Although the SNF Project experienced some safety performance degradations with the start of FY 2000, performance continues to improve. October 1999 had two Restricted Workday Cases, and one Lost Away Workday Case. This was a nearly significant increase (close to but not above the UCL) on the Occupational Safety and Health Act (OSHA) Recordable Case Rate. The project's safety record is improving in both OSHA recordables and DOE Cost Index. Lostaway overall has had only one case in the past year.



## CONDUCT OF OPERATIONS / ISMS STATUS



### Number of Reports Past 12 Months



## ISMS STATUS

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- The 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 now 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. Verbal confirmation that this item is complete was received, and formal notification documenting completion is expected by September 1, 2000.

## BREAKTHROUGHS / OPPORTUNITIES FOR IMPROVEMENT

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### Breakthroughs

- Baseline Change Request SNF-2000-009, 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, was implemented.

### Opportunities for Improvement

Nothing to report.

## UPCOMING ACTIVITIES

**Cold Vacuum Drying (CVD) Facility Testing** — Testing at the CVD Facility continues to remain on the critical path. Completion of testing is scheduled for the end of September 2000. The date was changed to incorporate resolution of equipment operational problems identified in integrated process testing.

**Cask Loadout System (CLS) Testing** — Complete startup testing by mid-September 2000. The date was changed to correct equipment component failures and design issues associated with the integrated test phase.

**Phased Startup Initiative (PSI)** — Complete PSI Phases I and II in order to support start of Hot Testing by mid-September 2000. The date was changed to correct equipment component failures. This was completed on September 5, 2000.

**Fuel Removal Activities** — Begin DOE Operations Readiness Review by early October 2000. Begin K West Basin fuel removal, drying and storage operations by November 30, 2000.

## COST PERFORMANCE (\$M):

	BCWP	ACWP	VARIANCE
Spent Nuclear Fuel	\$163.9	\$170.3	- \$6.3

The unfavorable cost variance of \$6.3 million (four 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
<b>Spent Nuclear Fuel</b>	\$163.9	\$165.8	- \$1.8

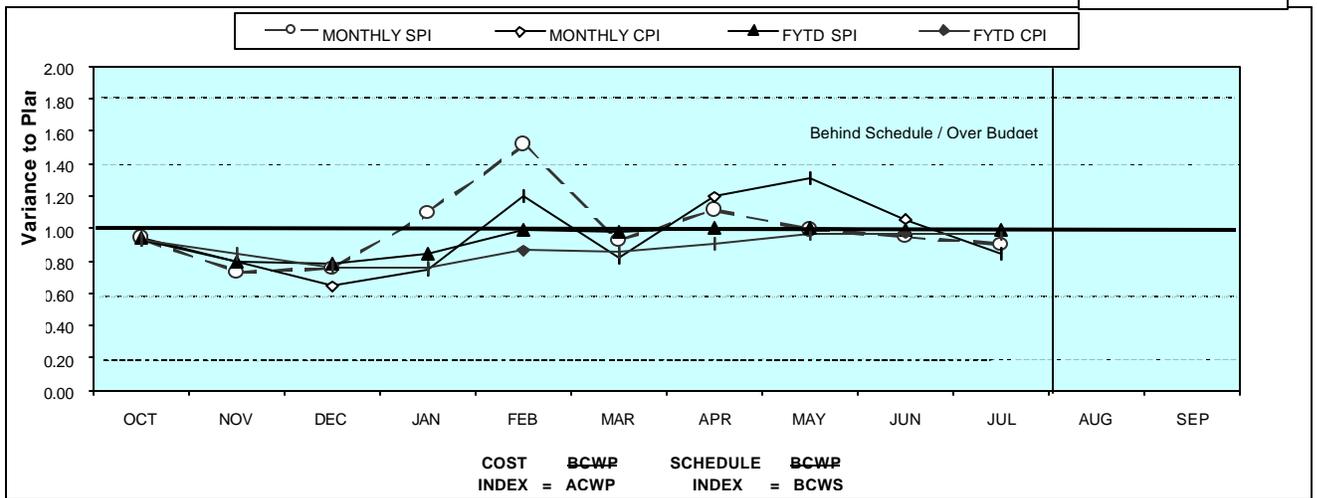
The unfavorable schedule variance of \$1.8 million (one percent) is due to workscope being slightly behind in the following areas: K East Integrated Water Treatment System, Sludge Retrieval, Sludge Loadout, Impact Limiters, and K West Canister Cleaning.

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

By PBS		FYTD								
		BCWS	BCWP	ACWP	SV	%	CV	%	PEM	EAC
PBS WM01	Spent Nuclear	\$ 165,788	\$ 163,939	\$ 170,253	\$ (1,849)	-1%	\$ (6,314)	-4%	\$ 197,222	\$ 204,613
WBS 1.3	Fuel Project									
<b>Total</b>		<b>\$ 165,788</b>	<b>\$ 163,939</b>	<b>\$ 170,253</b>	<b>\$ (1,849)</b>	<b>-1%</b>	<b>\$ (6,314)</b>	<b>-4%</b>	<b>\$ 197,222</b>	<b>\$ 204,613</b>

## COST/SCHEDULE PERFORMANCE INDICES (MONTHLY AND FYTD)

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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		
MONTHLY CPI	0.93	0.79	0.64	0.74	1.20	0.82	1.19	1.31	1.06	0.85		
FYTD SPI	0.94	0.79	0.78	0.85	0.99	0.98	1.00	1.00	1.00	0.99		
FYTD CPI	0.93	0.84	0.76	0.75	0.86	0.85	0.90	0.96	0.97	0.96		
MONTHLY BCWS	\$8,574	\$19,209	\$15,681	\$17,081	\$15,753	\$20,085	\$19,582	\$28,731	\$14,312	\$11,781	\$15,217	\$16,217
MONTHLY BCWP	\$8,049	\$13,968	\$11,770	\$13,221	\$23,909	\$18,511	\$21,838	\$28,517	\$13,561	\$10,596		
MONTHLY ACWP	\$8,626	\$17,581	\$18,370	\$17,831	\$19,906	\$22,611	\$18,286	\$21,703	\$12,818	\$12,521		
FYTD BCWS	\$8,574	\$27,783	\$43,463	\$55,544	\$71,297	\$91,382	\$110,963	\$139,694	\$154,007	\$165,788	\$181,005	\$197,222
FYTD BCWP	\$8,049	\$22,016	\$33,786	\$47,008	\$70,917	\$89,478	\$111,265	\$139,783	\$153,344	\$163,939		
FYTD ACWP	\$8,626	\$26,207	\$44,577	\$62,408	\$82,314	\$104,925	\$123,210	\$144,913	\$157,731	\$170,253		

## COST VARIANCE ANALYSIS: (- \$6.3M)

### WBS/PBS

### Title

#### 1.3.1/WM01

#### Spent Nuclear Fuel Project

**Description/Cause:** The unfavorable cost variance of \$6.3 million (3.9 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.

**Impact:** The unanticipated site cost impacts, i.e., Corrective Action Management, Hanford Security, and fee allocation, are being compensated with appropriate site actions. In addition, Baseline Change Requests (BCRs) have been developed and reviewed and are on hold pending source availability for engineering, testing and administrative support. A \$10.9 million fiscal year end expense funding shortfall has been identified to FH and RL budget staff. A \$5.0 million Environmental Management internal budget reprogramming in August reduced this deficit to \$5.9 million.

**Corrective Action:** Approve pending BCRs.

## SCHEDULE VARIANCE ANALYSIS: (- \$1.8M)

### WBS/PBS

### Title

#### 1.3.1/ WM01

#### Spent Nuclear Fuel Project

**Description /Cause:** The unfavorable schedule variance of \$1.8 million (1.1 percent) is due to workscope being slightly behind in the following areas: K East Integrated Water Treatment System, Sludge Retrieval, Sludge Loadout, Impact Limiters, and K West Canister Cleaning.

**Impact:** None. Variance percentage threshold is not in jeopardy.

**Corrective Action:** None. The impacts on FY 2001 have been reviewed and are deemed negligible.

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

	Project Completion *			Post 2006 *			Line Items *		
	Expected Funds	FYSF	Variance	Expected Funds	FYSF	Variance	Expected Funds	FYSF	Variance
The River 1.3 Spent Nuclear Fuel WM01 Operatina Line Item	\$ 176,075	\$ 181,944	\$ (5,869)				\$ 22,669	\$ 22,669	\$ -
<b>Total Spent Nuclear Fuel Operating</b>	<b>\$ 176,075</b>	<b>\$ 181,944</b>	<b>\$ (5,869)</b>						
<b>Total Spent Nuclear Fuel Line Item</b>							<b>\$ 22,669</b>	<b>\$ 22,669</b>	<b>\$ -</b>

## ISSUES

There are no technical, DOE, Regulator or external issues identified at this time. However, an internal DOE budget reprogramming of \$5.0 million will be allocated in August to remedy SNF's projected FY 2000 expense funding shortage.

## BASELINE CHANGE REQUESTS CURRENTLY IN PROCESS (\$000)

PROJECT CHANGE NUMBER	DATE ORIGIN.	BCR TITLE	FY00 COST IMPACT \$000	SCH	TECH	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	2816	Y	Y				AWA approved for \$1,116K. BCR in preparation.
SNF-2000-001	6/13/00	CAM/DTS Cost Allocation	1311	N	Y		7/12/00	8/3/00	Approved
SNF-2000-020	6/14/00	Safeguards & Security Support at KE/KW Basins and CVD Facility	415	Y	Y				In preparation
SNF-2000-021	7/27/00	SNF Project FY2001 MYWP Rate Impacts		Y	Y				In review
<b>ADVANCE WORK AUTHORIZATIONS</b>									
SNF-2000-019	8/10/00	FRS/IWTS Phased Startup Initiative - Adding Hot Testing	1116	Y	Y	8/11/00	8/11/00	8/11/00	Approved

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## 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	0	1	1	0	0	1	0	3
<b>Total Project</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>5</b>

**STATUS AS OF 8/24/2000**

**Tri-Party Agreement / EA Milestones**

Number	Milestone Title	Status
<b>M-34-14A (S06-97-009)</b>	<b>“Complete K West Basin Cask Facility Modifications”</b>	<b>Due 2/29/00</b> — Completed on schedule.
<b>M-34-04 (S01-99-124)</b>	<b>"Submit Remedial Design Report/Remedial Action Work Plan for the K Basins"</b>	<b>Due 3/31/00</b> – Completed over one month early (February 10, 2000).
<b>M-34-05 (T01)</b>	<b>"Submit Report on Quantities, Character, and Management of K Basins Debris"</b>	<b>Due 5/31/00</b> – Completed on schedule.
<b>M-34-16 (S00-01-900)</b>	<b>"Initiate removal of K West Basin Spent Nuclear Fuel"</b>	<b>Due 11/30/00</b> - On schedule.
<b>M-34-06-T01</b>	<b>"Initiate K West Basin Spent Nuclear Fuel Canister Cleaning Operations"</b>	<b>Due 12/31/00</b> - On schedule.

**DNFSB Commitments**

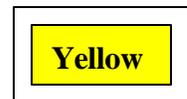
	Nothing to report.	
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**MILESTONE EXCEPTION REPORT**

Nothing to report.

**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 on track to meet November due date.

**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 is behind schedule due to hardware and control system problems with the IWTS. Accelerated non-critical path testing activity continues to allow KW Basin system problems to be uncovered and fixed much earlier than the baseline schedule. This activity is scheduled for completion by mid-September 2000.

**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).

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**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).

- This PI has been missed and is not being renegotiated.

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## **KEY INTEGRATION ACTIVITIES**

- Spent Nuclear Fuel (SNF) final disposition interface activities, including Office of Civilian Radiation Waste Management (OCRWM) Quality Assurance (QA) Program Implementation, is ongoing with the National SNF Program. The final Disposition Compliance Plan for Hanford SNF inventories were submitted to the National SNF Program and DOE-HQ for review and approval. The SNF Project's implementation of OCRWM QA Program was deemed "effective" by the National SNF Program.
- K Basins' sludge removal and Shippingport (PA) Pressurized Water Reactor Core 2 SNF removal acceptance criteria and conceptual design reviews are ongoing with the Waste Management Project.
- The 324 Building (B Cell) SNF removal acceptance criteria and conceptual design reviews are ongoing with the River Corridor Project.
- Neutron Radiography Facility Training Research and Isotope Production General Atomics (TRIGA), and Fast Flux Test Facility (FFTF) SNF relocation planning is ongoing with FFTF Project.
- Input provided to Bechtel Hanford, Incorporated (BHI) on recovery actions required if Spent Nuclear Fuel SNF is discovered during upcoming 105F and 105H reactor basins deactivation.