



# **Section J**

## ***200 Area Materials & Waste Management***

### **PROJECT MANAGERS**

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## SUMMARY

The 200 Area Materials and Waste Management consists of Project Baseline Summary (PBS) RL-CP02, Work Breakdown Structure (WBS) 3.3.2, except for ERDF.

Fiscal year milestone performance (EA, DOE-HQ, RL) shows one milestone completed early.

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

## TOP 5 ACCOMPLISHMENTS FOR FY 2002

**Accelerate Readiness to Receive Spent Nuclear Fuel (SNF) K Basin Sludge** — Significant progress was made in FY 2002 to ready T Plant for receipt of K Basin Sludge. Cell modifications required for sludge receipt were completed. Three shipments of Shippingport fuel were made to the Canister Storage Building in FY 2002.

**Transuranic (TRU) Production** — Completed two shipments to the Waste Isolation Pilot Plant (WIPP) in FY 2002. The Hanford TRU Project was successfully recertified by WIPP in FY 2002.

**Mixed Low Level Waste (MLLW) Treatment** — Completed disposal of 27 Cat-3 powder drums from 200 LEF, one macroencapsulated debris package from T Plant, disposition of the EC-1 Condenser via metal recycling, four macroencapsulated debris packages from ATG, and one drum of direct disposal waste from T Plant into the MW Disposal Unit. This makes a total of 310 m<sup>3</sup> toward the MLLW Performance Incentive in FY 2002. Evaluated ATG treatment to date and have elected to exercise the option in the non-thermal treatment contract.

**Liquid Waste Processing** — Processed over 24 million gallons of radioactive wastewater through the 200 Area Effluent Treatment Facility (ETF) in FY 2002, providing essential support to a wide variety of site cleanup activities.

**Project Support to the DOE Cleanup Mission** — Waste Management provided key support to numerous on-site and off-site cleanup projects. On-site support was provided to the Plutonium Finishing Plant, tank farms, and the 324 and 327 facility deactivation. Off-site wastes were accepted from a wide variety of generators, including the receipt of wastes from Parks Township, an effort initiated in 1999.

## ADDITIONAL FY 2002 ACCOMPLISHMENTS

**Plutonium Finishing Plant (PFP) Support** — One shipment of 15 drums of Sand, Slag and Crucible (SS&C) waste was received for storage in support of the Residues Project during September 2002. During the fourth quarter for FY 2002, 90 SS&C pipe overpack containers were received for storage. Security upgrades were initiated at a second CWC Storage Building, 2402WI, to provide storage space for approximately 800 additional POCs. A total of 394 POCs were received during FY 2002, supporting completion of TPA Milestone M-83-09. Additionally, 68 Direct Discard drums were received during FY 2002, supporting completion of TPA Milestone M-83-10.

**300 Area Cleanup Support** <sup>3</sup>/<sub>4</sub> Completed revisions and submissions of transportation and facility safety basis documents to support fuel removal at 324. Continued support for removal of legacy wastes at both 324 and 327 buildings. Personnel at 324 completed all legacy waste removals except for one box containing a prohibited item. Approval was also obtained for shipment of fuel load #4, which exhibited higher dose rates.

**Transuranic (TRU) Waste Retrieval** — Initiated construction of a mock-up TRU Retrieval trench that will be used to demonstrate retrieval techniques and to train personnel. Waste retrieval is planned to start in FY 2003.

**Low Level Waste (LLW) Disposal** — Disposed of over 4,000 m<sup>3</sup> in FY 2002, from a wide variety of waste generators.

**Waste Encapsulation and Storage Facility (WESF)** — Completed several significant projects in FY 2002, including the K-1 filter change, capsule identification number re-etching, pool cell cleaning system installation, and electrical equipment removal from the service gallery.

**T Plant Complex Part A** — Ecology approved the revision to the T Plant Complex Part A. The revision to the Part A establishes a miscellaneous unit designation that resolves a potential compliance issue and enhances the large scale treatment activities that can be performed at T Plant. The T Plant Complex Part B permit application was certified by FH and RL and transmitted to Ecology.

## SAFETY

Dave Van Leuven recognizes Jim Van Vliet and Waste Management for reaching four million safe work hours in FY 2002.



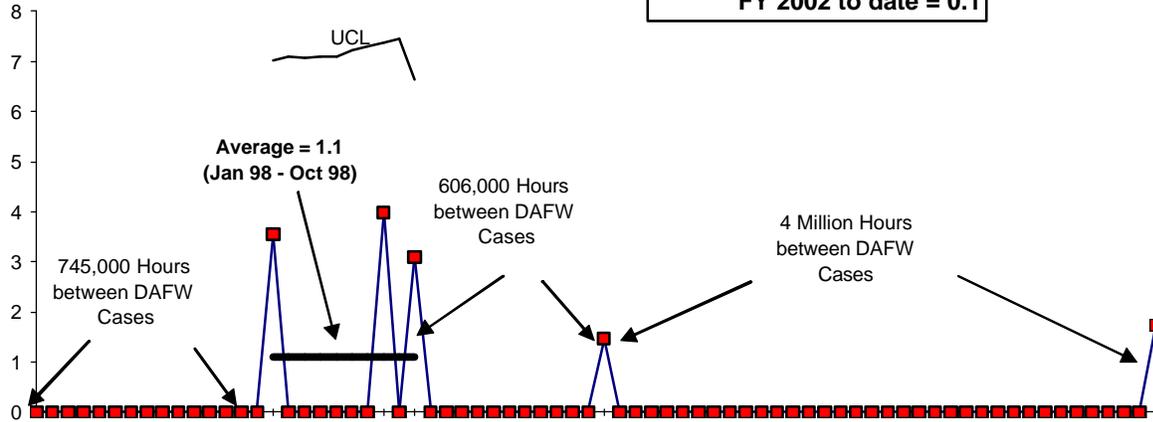
## SAFETY (CONTINUED)

### Days Away From Work Case Rate

Cases per 200,000 hours

Project Safe Hours = 26,922  
FY 2001 = 0.0  
FY 2002 to date = 0.1

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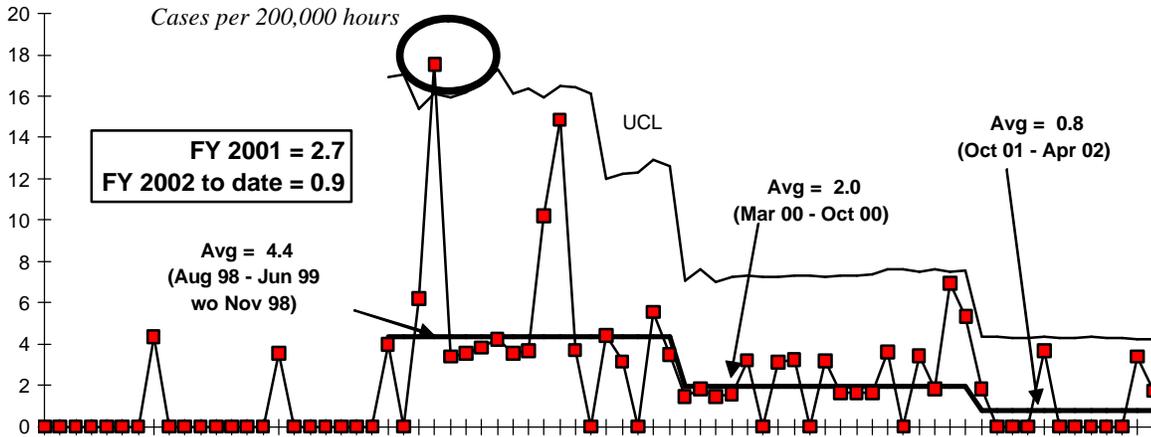


### OSHA Recordable Case Rate

Cases per 200,000 hours

FY 2001 = 2.7  
FY 2002 to date = 0.9

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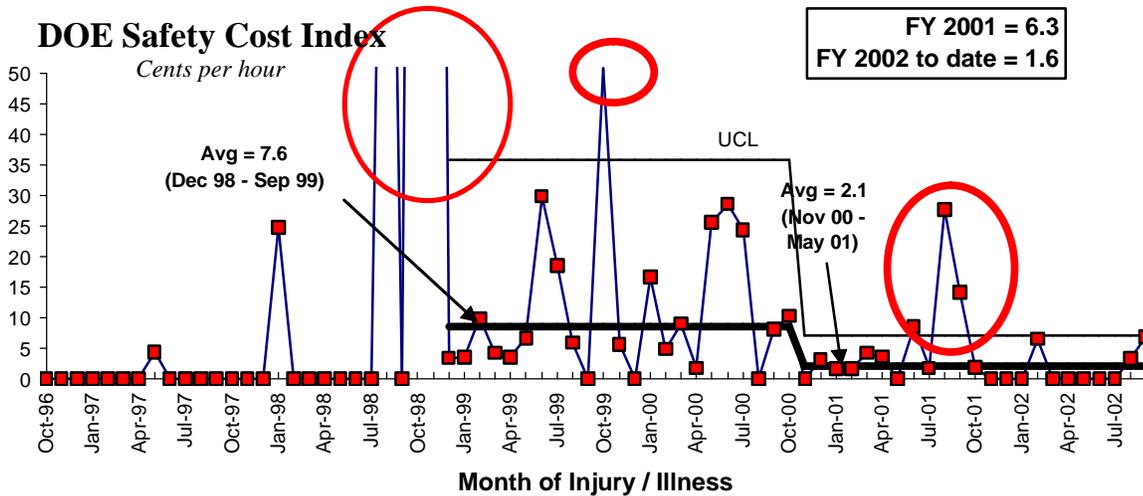


### DOE Safety Cost Index

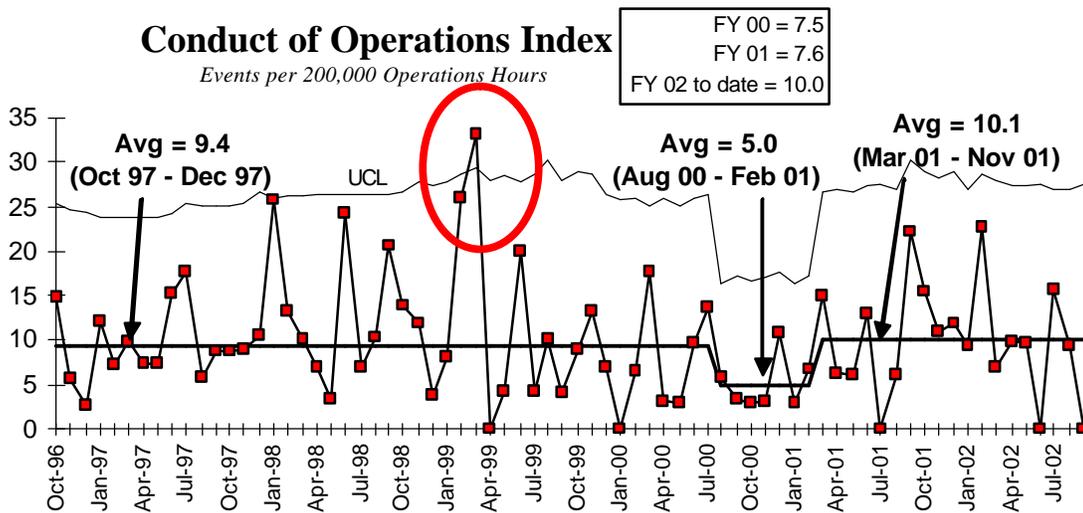
Cents per hour

FY 2001 = 6.3  
FY 2002 to date = 1.6

Green



## CONDUCT OF OPERATIONS



## BREAKTHROUGHS / OPPORTUNITIES FOR IMPROVEMENT

### Breakthroughs

Waste Management representatives are participating in a series of meetings, facilitated by RL and ORP, which are intended to identify and pursue opportunities for integrated disposal operations. In particular, integration of Waste Management lined disposal facility operations with ILAW disposal operations is being explored.

### Opportunities for Improvement

183-H Basin waste, consisting of approximately 12,000 containers of mixed low-level waste stored at the CWC, are planned for treatment then disposal in the mixed waste disposal trench. Treatment and disposal is estimated to cost approximately \$11M and four years to accomplish. An alternate disposal of the waste to ERDF proposed by the C3T is being pursued. CERCLA documentation is being developed to obtain approval for disposal of 183-H basin waste to the Environmental Restoration and Disposal Facility (ERDF). If successful, the cost and time required to treat and dispose of this waste is expected to be reduced by about half.

## UPCOMING ACTIVITIES

**Accelerate Readiness to Receive SNF K Basin Sludge** — 1) Complete movement of Shippingport (PA) fuel, 2) Support activities to receive and store K Basin sludge, and 3) Accelerate T Plant Canyon cell cleanout.

**Waste Encapsulation and Storage Facility (WESF) Operations** — Complete K-1 exhaust fan repairs. Perform annual inner capsule movement test. Complete K-3 duct modification.

**MLLW Treatment** — Receive treated waste from ATG. Prepare for FY 2003 shipments to ATG under the option. Establish a contract with Perma-Fix to perform the thermal desorption technology demonstration. Begin shipping waste that requires thermal treatment to Perma-Fix for the demonstration.

**Plutonium Finishing Plant Support** — Continue to support residues processing with shipment of the new Sand, Slag and Crucible waste stream through CY 2003, followed by receipt of the alloys waste stream. Complete security upgrades to 2402 WI, which will house the majority of POCs shipped during FY03. The first CWC Material Balance Area (MBA) inventory is scheduled to begin at 2402WK in early November. The annual inventory is under Material Control for any Material Balance Area housing POCs.

**Transuranic (TRU) Waste Retrieval** — Continue preparations for the TRU Retrieval mockup. Plan to backfill and excavate to demonstrate excavation techniques. A new contractor is being brought on board in October to complete the revisions to the Documented Safety Analysis (DSA).

**TRU Waste Shipments** — The first shipment of TRU waste to WIPP for FY 2003 is planned in November 2002. The Hanford Waste Certification Plan was submitted in September for Carlsbad Field Office review and approval. Several efficiencies in controlling and obtaining nondestructive assay data have been realized since the May 2002 implementation of the new WIPP Waste Acceptance Criteria requirements. Upon Carlsbad Field Office approval, additional efficiencies can be completed in early FY 2003.

**TRU Recertification and PFP Audits** — Support the Richland Office of Inspector General audit of Hanford's TRU shipments to Carlsbad.

**Liquid Waste Processing** — The ETF was restarted due to increasing LERF levels after being shutdown in anticipation of an Evaporator campaign, which CHG was later, unable to support. The Evaporator campaign has been re-scheduled to November. Expect to continue wastewater processing to reduce LERF volumes.

**300 Area Cleanup Support** — Continue support to the 324 Fuels Removal Project, 327 Facility Cleanout, and the 300 Area Accelerated Closure Project.

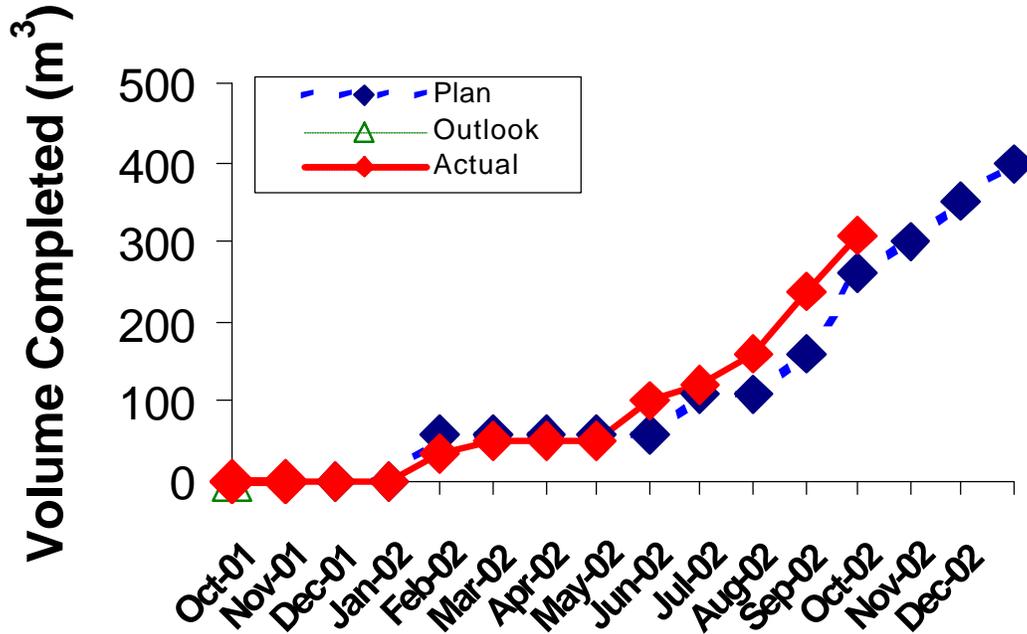
## MILESTONE ACHIEVEMENT

Number	Milestone Title	Type	Due Date	Actual Date	Forecast Date	Status / Comment
M-19-00	Complete Treat/Disp 1,644 CM of CH-LLMW	TPA Enforceable	09-30-02	10-23-00	10-23-00	COMPLETE
M-7-1E	Complete T Plant preparation for storage of K Basins sludge	PI Base	10-30-02		TBD	In progress.
M-7-2A	Complete Readiness Assessment for K Basins Sludge Receipt	PI Base	10-30-02		TBD	Working safety analysis issues with SNF.
M-91-12A	Treat 240 Cubic Meters by 12/31/2002	TPA Enforceable	12-31-02		TBD	TPA renegotiation ongoing.
M-91-20	T Plant ready to rec. canister of K Basin floor pit sludge	TPA Enforceable	12-31-02		TBD	Working safety analysis issues with SNF.
M-26-05J	Prep Biennial Tritium Treatment Tech Evaluation Report	TPA Enforceable	08-31-03		08-31-03	ON SCHEDULE
M-7-2B	Complete Readiness Assessment K Basins Canister & Fuel Sludge Receipts	PI Base	01-01-04		01-01-04	
M-7-3B	De-Post T Plant Canyon as Airborne Radiation Area	PI Stretch	01-01-04		01-01-04	ON SCHEDULE
M-91-22	T Plant ready to rec. Canister & fuel wash sludge from K Basin	TPA Enforceable	02-29-04		02-29-04	ON SCHEDULE
M-91-07	Complete W-113 for Post 1970 CH TRU / TRUM Retrieval	TPA Enforceable	09-30-04		TBD	TPA renegotiation ongoing.
M-1-2	Consolidate Sitewide SNF in 200 A Dry Storage	PI Base	02-28-05		02-28-05	ON SCHEDULE
M-26-05L	Prep Biennial Tritium Treatment Tech Evaluation Report	TPA Enforceable	08-31-05		08-31-05	ON SCHEDULE
M-5-2	Complete Thermal Treatment 600 m <sup>3</sup> MLLW by 12/31/05	PI Base	12-31-05		12-31-05	ON SCHEDULE
M-5-1B	Complete Treatment / Disposal 9820 m <sup>3</sup> of MLLW	PI Stretch	06-30-06		06-30-06	ON SCHEDULE
M-7-3C	Clear Remaining Stored Equipment from T Plant Canyon Deck	PI Stretch	06-30-06		06-30-06	ON SCHEDULE

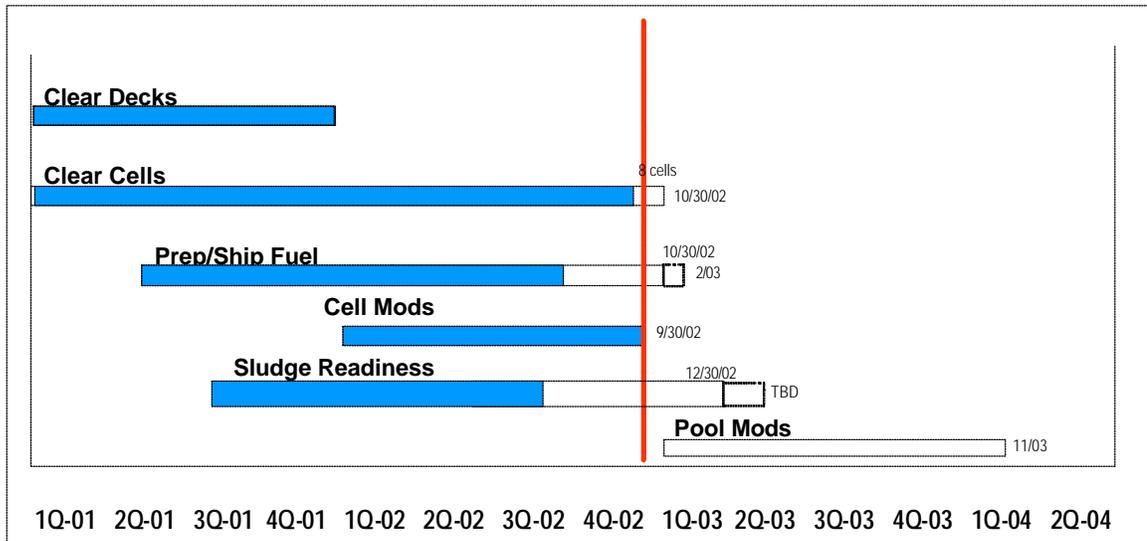
M-4-1D	Retrieve 15,200 Suspect TRU Waste	PI Stretch	09-30-06		09-30-06	ON SCHEDULE
M-6-1A	Certify 580 m <sup>3</sup> of TRU waste	PI Stretch	09-30-06		09-30-06	ON SCHEDULE
M-6-1B	Complete 68 TRU Waste Shipments to WIPP	PI Stretch	09-30-06		09-30-06	ON SCHEDULE

## PERFORMANCE OBJECTIVES

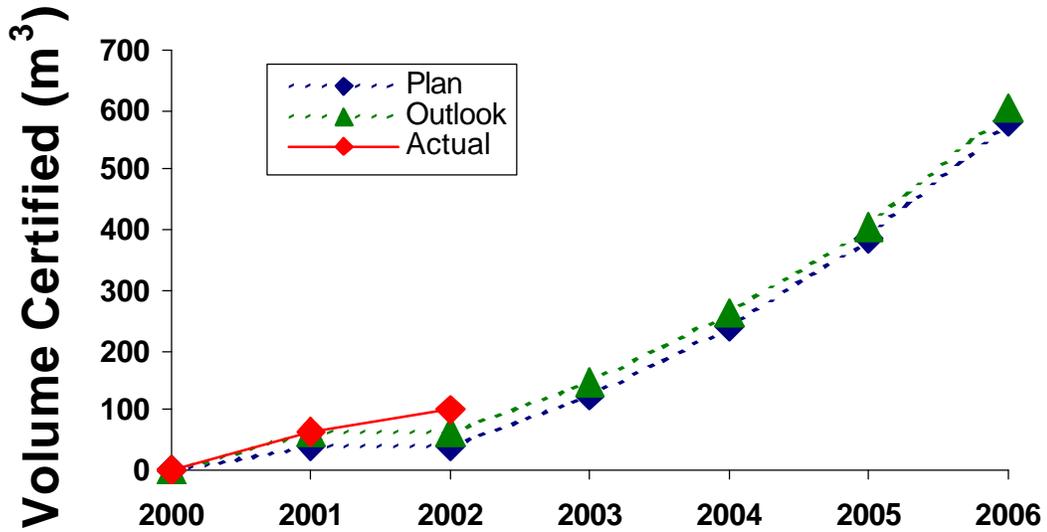
### TREAT AND DISPOSE MLLW (FHI-M5)



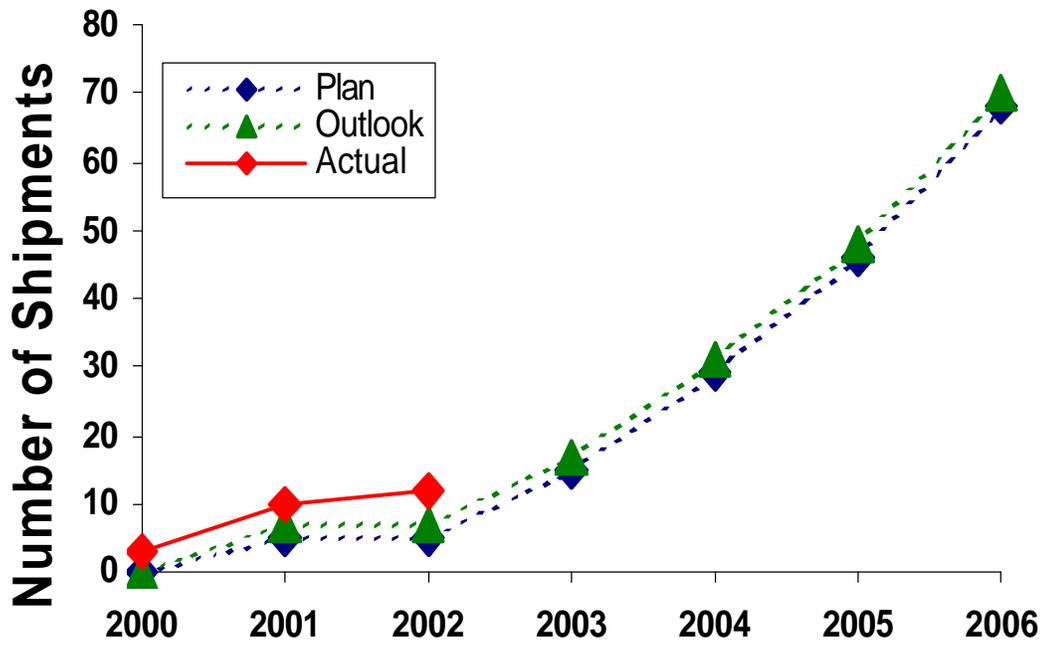
### ACCELERATE READINESS TO RECEIVE K-BASIN SLUDGE (FHI-M7)



### CERTIFY TRU WASTE (FHI-M6)



### SHIP TRU WASTE (FHI-M6)



## FY 2002 SCHEDULE / COST PERFORMANCE – ALL FUND TYPES (\$000)

		FYTD								
		BCWS	BCWP	ACWP	SV	%	CV	%	BAC	
PBS CP02	SW Storage & Disposal	\$ 11,529	11605	\$ 10,858	\$ 75	1%	\$ 746	6%	\$ 11,529	
WBS 3.3.2.1										
PBS CP02	MLLW Treatment	\$ 1,458	\$ 1,012	\$ 1,003	\$ (446)	-31%	\$ 9	1%	\$ 1,458	
WBS 3.3.2.2										
PBS CP02	Treatment	\$ 11,463	\$ 10,086	\$ 15,084	\$ (1,377)	-12%	\$ (4,999)	-50%	\$ 11,463	
WBS 3.3.2.3										
PBS CP02	TRU Program	\$ 13,579	\$ 13,011	\$ 11,717	\$ (567)	-4%	\$ 1,294	10%	\$ 13,579	
WBS 3.3.2.4										
PBS CP02	WESF	\$ 7,633	\$ 7,544	\$ 6,841	\$ (89)	-1%	\$ 703	9%	\$ 7,633	
WBS 3.3.2.5										
PBS CP02	200 A LWPF	\$ 15,836	\$ 15,395	\$ 14,106	\$ (441)	-3%	\$ 1,289	8%	\$ 15,836	
WBS 3.3.2.6										
PBS CP02	Project Management	\$ 18,819	\$ 18,479	\$ 18,050	\$ (340)	-2%	\$ 429	2%	\$ 18,819	
WBS 3.3.2.9										
<b>Total</b>		<b>\$ 80,318</b>	<b>\$ 77,131</b>	<b>\$ 77,659</b>	<b>\$ (3,187)</b>	<b>-4%</b>	<b>\$ (528)</b>	<b>-1%</b>	<b>\$ 80,318</b>	

## FISCAL YEAR SCHEDULE / COST PERFORMANCE

The \$3.2 million unfavorable schedule variance is primarily due to the T Plant Shippingport Fuel removal being delayed to resolve Operational Readiness Review corrective actions. These delays have also delayed the start of sludge receipt readiness activities. MLLW treatment has been limited while ATG is under Chapter 11. The \$0.5 million unfavorable cost variance was primarily due to increased costs for the T Plant spent fuel removal ORR preparation and assessment corrective actions. This is offset by the favorable variance from the FY 2001 carryover workscope costing less than planned, cost efficiencies, credit taken for the TRU Program for work completed in FY 2001, and favorable year-end passbacks.

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

### Schedule Variance Analysis: (-\$3.2M)

#### MLLW Treatment — 3.3.2.2/CP02

**Description/Cause:** The unfavorable schedule variance is a result of treatment production being limited at ATG while under Chapter 11.

**Impact:** The TPA milestone M-91-12A is unachievable.

**Corrective Action:** Some non-thermal activities have been identified and are proceeding. Formal notification to RL that TPA milestone M-91-12A is unachievable was submitted February 11, 2002.

#### Treatment — 3.3.2.3/CP02

**Description/Cause:** The unfavorable schedule variance is a result of the T Plant fuel removal ORR not completed and fuel shipments not started.

**Impact:** Completion of fuel removal from T Plant will be delayed.

**Corrective Action:** Initiated fuel removal from T Plant in September.

## Cost Variance Analysis: (-\$0.5 M)

### **Treatment — 3.3.2.3/CP02**

**Description/Cause:** The unfavorable cost variance is due to the increased costs for the T Plant fuel removal Readiness Assessment preparation and assessment corrective actions.

**Impact:** T Plant over-ran at year end.

**Corrective Action:** Actions have been implemented to resolve cost impacts to the WM Project.

### **TRU Program — 3.3.2.4/CP02**

**Description/Cause:** The favorable cost variance is due to credit (BCWP) for completed work for cost generated in FY 2001 for an additional three WIPP shipments.

**Impact:** None.

**Corrective Action:** None.

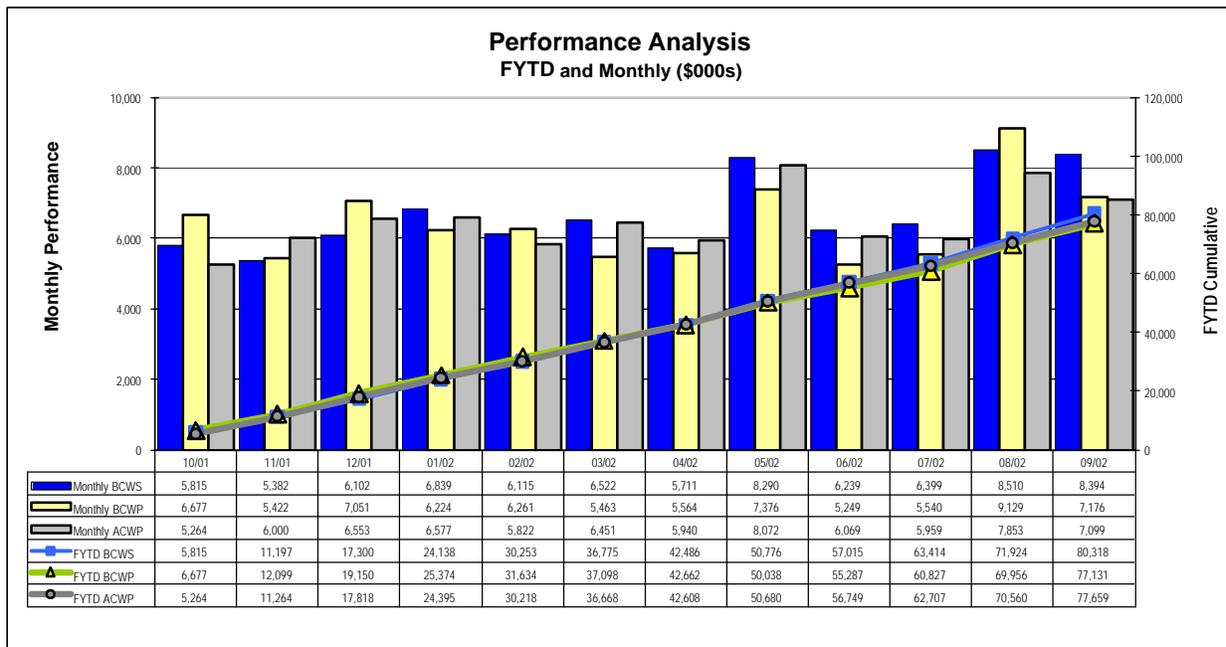
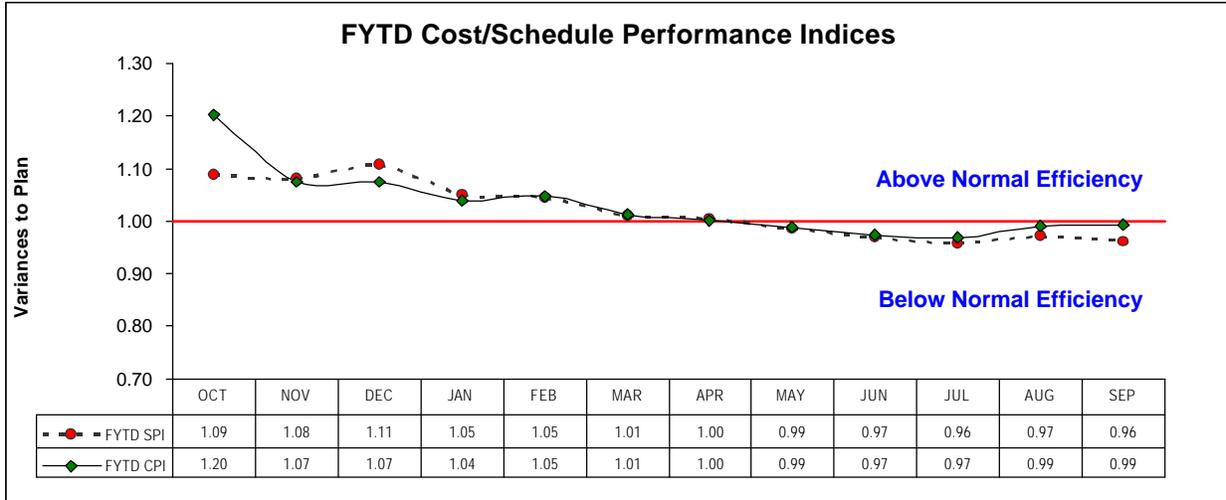
### **200 A LWPF — 3.3.2.6/CP02**

**Description/Cause:** The favorable cost variance is due to loss of staff, staff on disability, and staff on loan to other facilities.

**Impact:** None.

**Corrective Action:** None.

## SCHEDULE / COST PERFORMANCE (FISCAL YEAR)



## FUNDS MANAGEMENT FUNDS VS ACTUALS (\$000) FY 2002

	FH Funds Reallocation	September Actuals	Variance
<b>3.3.2 Waste Management CP02</b>	\$ 81,319	\$ 77,659	\$ 3,660
<b>Total</b>	\$ 81,319	\$ 77,659	\$ 3,660

### ISSUES

#### Technical Issues

**Issue:** Move Shippingport Fuel - Transfer Shippingport fuel to Canister Storage Building (CSB) October 30, 2002.

**Impact/Status:** Fourth fuel shipment will be completed October 9. CSB outage October 9 to 19 will delay fifth shipment until October 21.

**Corrective Action:** Anticipate sixth shipment completion prior to October 30, with 12 subsequent shipments to be scheduled.

**Issue:** T Plant Readiness to Receive K Basin Sludge - Complete Contractor Readiness Assessment by October 30, 2002.

**Impact/Status:** Reconciliation of SNF, Transportation and Packaging (T&P), and T Plant Safety Documents progressing; the estimated completion date is October 18.

**Corrective Actions:** Submit draft Plan of Action for Sludge Receipt Readiness to RL for review by October 24. Sludge Safety Analysis progressing with goal of submission to RL for review November 5.

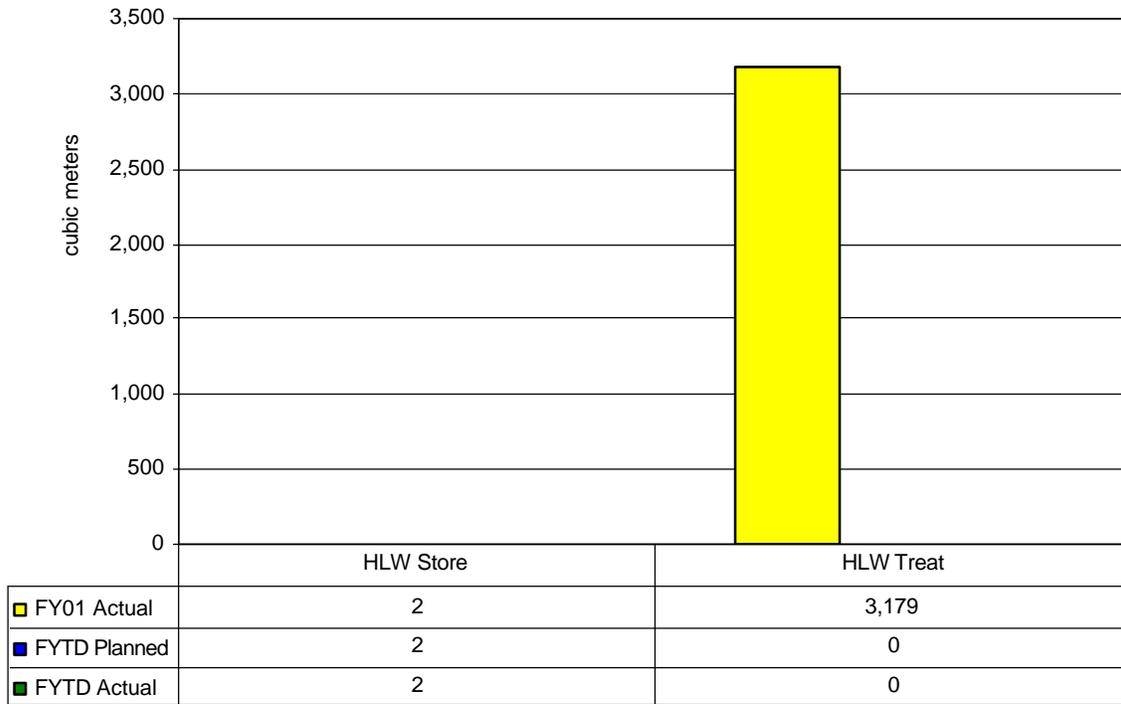
#### External Issues/DOE Requests/Regulatory/DOE Issues

Nothing to report at this time.

### BASELINE CHANGE REQUESTS CURRENTLY IN PROCESS

BCR No./ Level 4 WBS	Date Originated	Description	Impact		Date Approved	Status
			Days	Dollars (\$000s)		
FH-02-011	2/28/2002	10CFR830 Phase II compliance		1,700		Submitted to RL
CP-02-014	7/12/2002	WMP Minimum Efficient Operating Level		2000/535		Submitted to RL

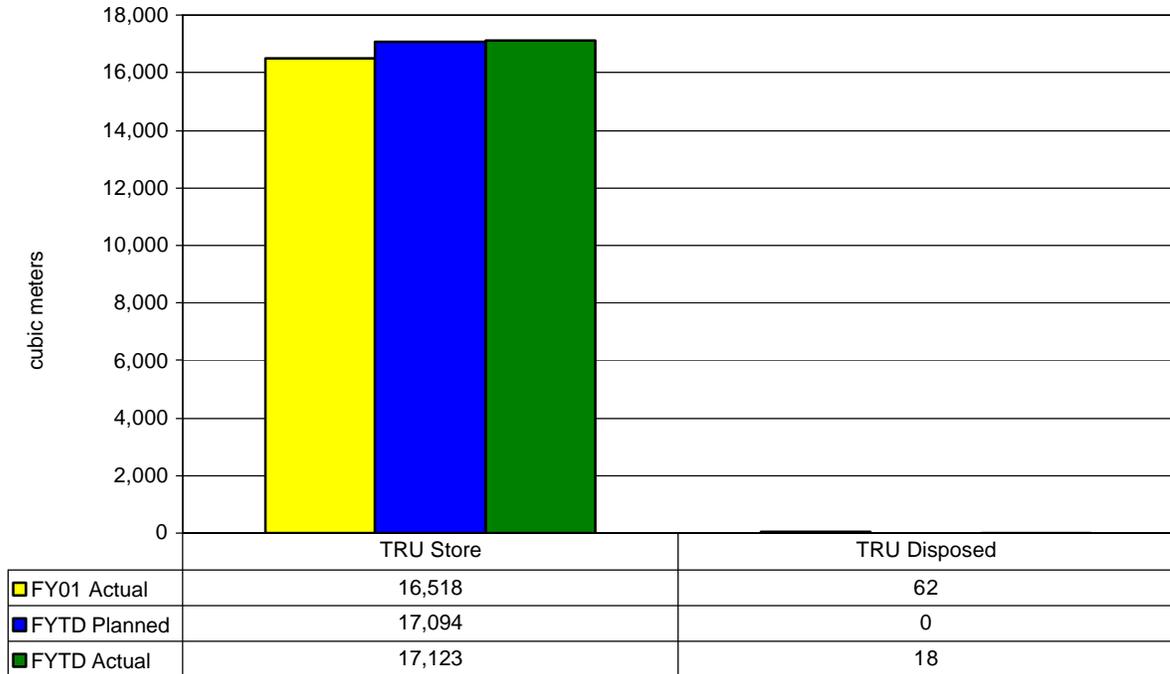
## High Level Waste (HLW): Storage and Treatment



**Storage:** Storage continues to be provided for HLW Cesium 137 and Strontium 90 capsules in the Waste Encapsulation and Storage Facility Pool Cells.

**Treatment:** The 242-A evaporator campaign planned for FY02 has been delayed until the 1st quarter of FY03 due to delays at the Tank Farms Operations Contractor.

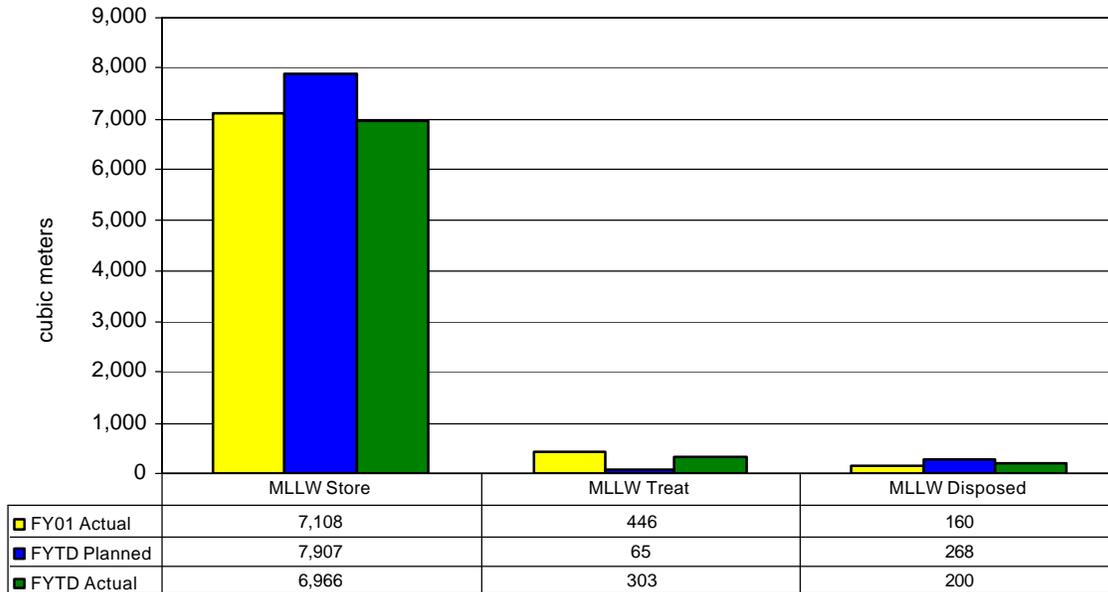
## TRANSURANIC (TRU) WASTE: STORAGE, TREATMENT AND DISPOSAL



**Storage:** Storage continues to be provided for existing and newly generated TRU waste.

**Disposal:** FH WMP achieved two unplanned shipments of TRU for disposal at WIPP during the fourth quarter. The shipments were achieved through operating efficiencies which enabled processing and certifying 84 drums for shipment. WIPP was able to receive the shipments due to a slow down of TRU shipments from Idaho and Rocky Flats.

## MIXED LOW LEVEL WASTE: STORAGE, TREATMENT, AND DISPOSAL

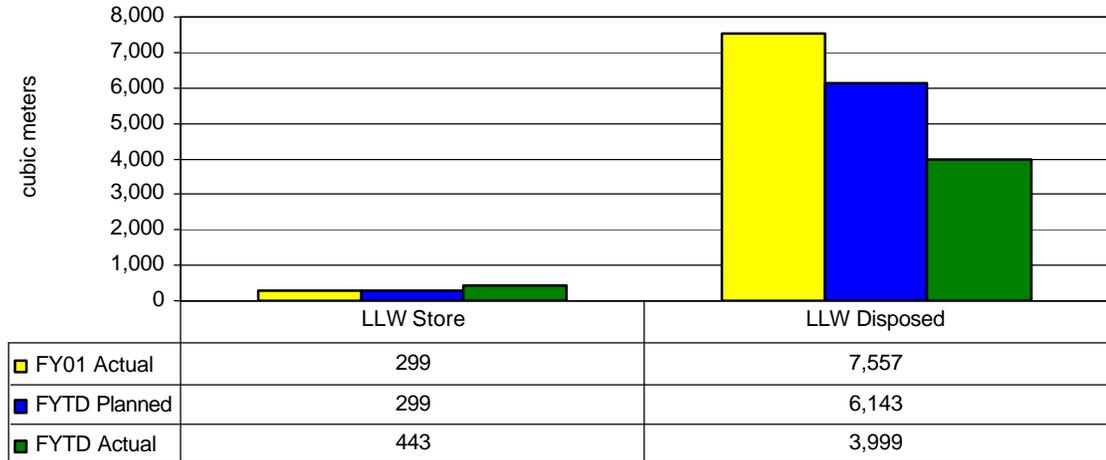


**Storage:** More MLLW was sent to ATG for treatment then planned resulting in lower inventory in storage.

**Treatment:** The 303 cubic meters of MLLW treated in FY02 includes MLLW treated on-site, the 65 cubic meters planned for the year for non-thermal treatment at ATG, plus MLLW that was treated in FY01 at ATG but credit could not be taken until the waste was received and accepted on site in FY02.

**Disposal:** Some of the MLLW treated at ATG was designated as LLW after treatment resulting in a lower quantity of MLLW being disposed then planned.

## LOW LEVEL WASTE (LLW): STORAGE, TREATMENT, AND DISPOSAL



**Storage:** Storage continues to be provided for 299 cubic meters LLW that does not meet waste acceptance criteria for disposal in the burial grounds. An additional 144 cubic meters of retrieved suspect TRU waste that has been designated as LLW through assay at WRAP is being temporarily stored at the CWC pending verification of packaging for any void fill issues prior to disposal in the low level burial grounds.

**Disposal:** Less LLW was disposed than planned as a result of a combination of the Low Level Waste Burial Grounds being virtually shut down the last two and one half weeks of December because of monthly and annual routines being performed; schedule slippages; and verification requirements on waste that was received but has not yet been disposed. Also, a large quantity of LLW planned to be received from Princeton for disposal on site will now be disposed at the Nevada Test Site. Other offsite waste generator variances from forecasted quantities include six months delay in shipments from KAPL-TENN, and no LLW generation from ATG as planned in the forecast.