

SUMMARY

The Nuclear Material Stabilization mission consists of the Plutonium Finishing Plant (PFP), WBS 1.4.5, PBS TP05.

NOTE: Unless otherwise noted, the Safety, Conduct of Operations, and Cost/Schedule data contained herein is as of January 31, 2000. All other information is as of March 1, 2000.

As of January 2000 a total of 173 cans of Plutonium oxides and sludges have been stabilized through thermal stabilization (9 items in January 2000). A total of 13 liters of Plutonium nitrate solution have been stabilized in the prototype vertical denitration calciner.

Progress continues on the installation of three additional muffle furnaces for thermal stabilization of oxides and on installation of the $Mg(OH)_2$ process system.

Fiscal-year-to-date milestone performance (EA, DOE-HQ, and RL) shows that two milestones (67 percent) were completed on or ahead of schedule, no milestones were completed late, and one (33 percent) is overdue. Milestone (TRP-00-500) is late due to a proposed change in process implementation.

A letter was sent to RL indicating the milestone would not be met. Further details can be found in the milestone exception report following the cost and schedule variance analysis.

ACCOMPLISHMENTS

- Two main power supply temporary transformers (#2 and #6 for 234-5Z and 291-Z) were installed and placed in service.
- The Remote Mechanical C Line main (refilled) Halon bottles were installed and a major Preventive Maintenance (PM) completed allowing several Fire System restrictions to be cleared.
- Initiated accelerated muffle furnace cool-down work plan; and early tests indicate significant savings in the time required for cool-down during muffle furnace operation, which will improve stabilization productivity.
- Progress continued on startup of three additional muffle furnaces. RL approved the revised Operational Safety Requirements (OSRs) reflecting the new furnaces. Reviewed furnace operations from a NEPA perspective and concluded no additional documentation required. Fabricated new boats, covers and furnace table completing procurement of all required spare parts for operation.
- Obtained DOE-RL concurrence on the criteria document for the $Mg(OH)_2$ safety analysis.
- PNNL testing continued in support of revised polycube stabilization path forward. Phase I testing has been completed. Phase II testing will begin in February.

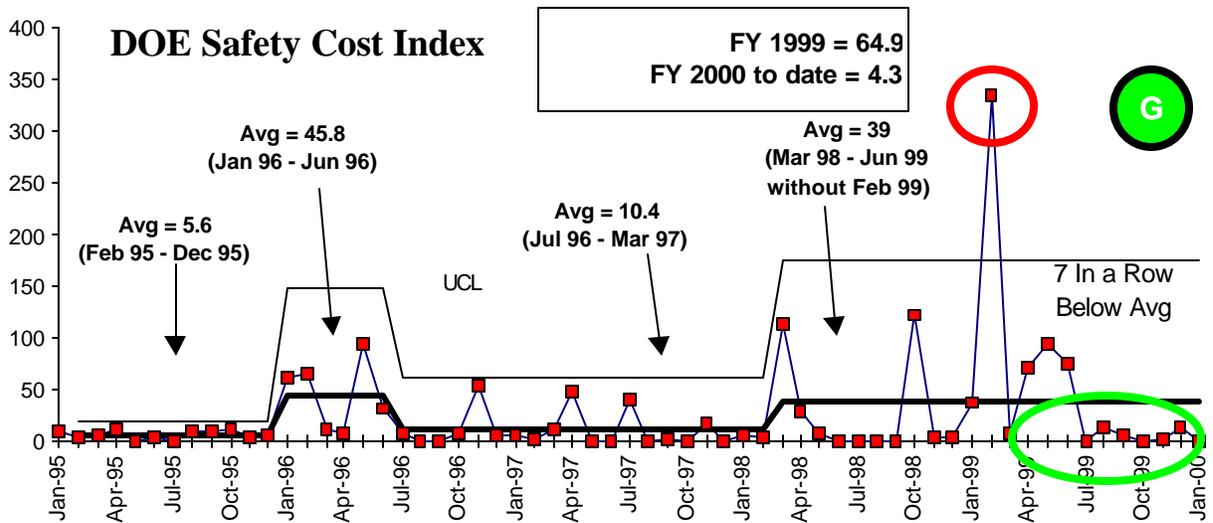
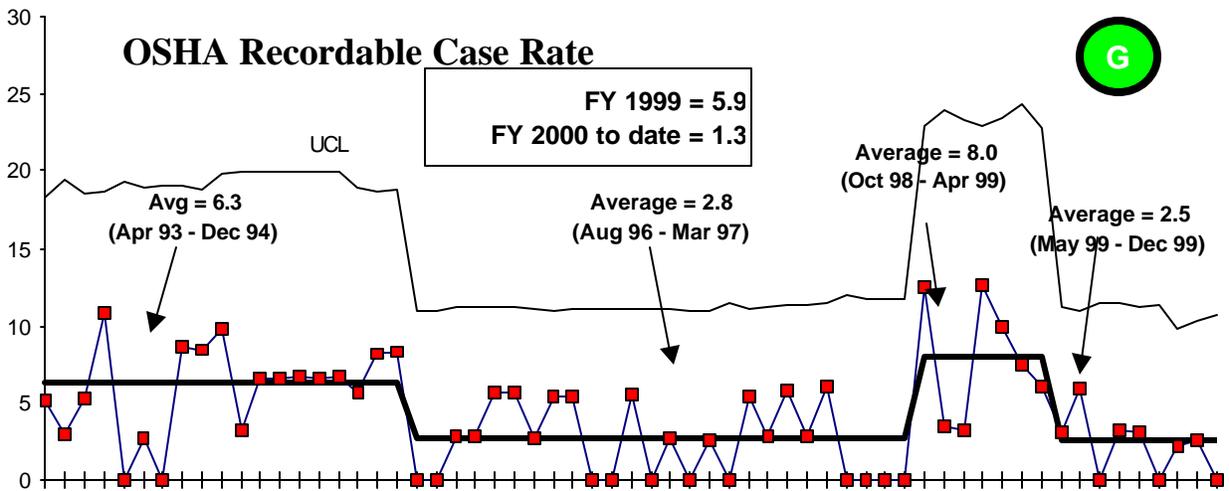
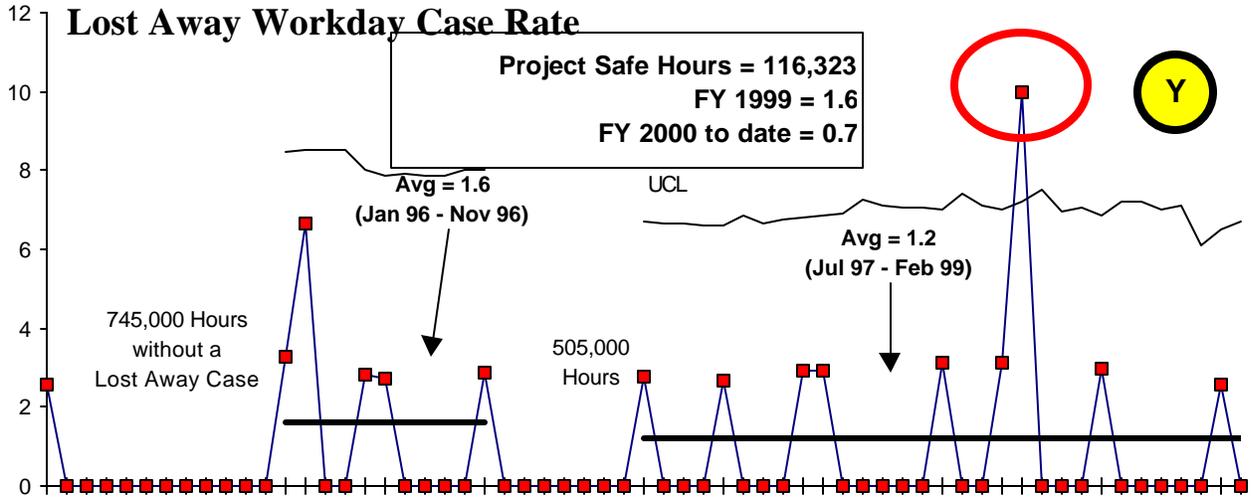
- Plutonium Oxide Stabilization – A total of 173 cans of oxides/sludges have been stabilized (9 items in January 2000).
- Project W-460 – The contract for the Bagless Transfer System Glovebox has been issued. Delivery of this system to Hanford is expected June 8, 2000, two weeks ahead of schedule.

SAFETY

Safety performance has significantly improved in January with no OSHA Recordable or Lost Workday Case injury and no First Aid Cases.

Case reclassifications and additional days on open cases have caused readjustments of past data. There continues to be a growth in lost/restricted days for February 1999.

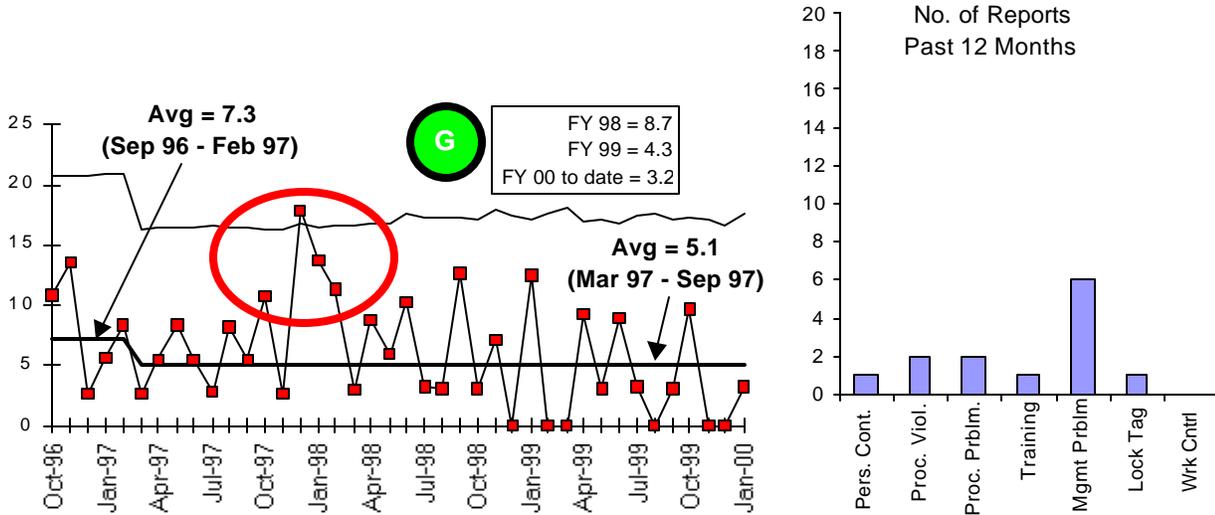
The past seven months were below average on the Cost Index. OSHA recordable case rate has significantly improved in comparison to the adverse trend of Spring 1999. An initial baseline rate of 2.5 has been calculated, which is equal to the PHMC overall rate.



CONDUCT OF OPERATIONS / ISMS STATUS

CONDUCT OF OPERATIONS

Events per 200,000 Hours



Green

ISMS STATUS

- Phase I ISMS Verification was completed
 - Corrective Actions have been defined and scheduled
 - Current draft schedule indicates corrective actions complete by April 15
- Discussions are underway regarding a consolidated PHMC Phase II Verification

Green

BREAKTHROUGHS / OPPORTUNITIES FOR IMPROVEMENT

BREAKTHROUGHS

- Nothing to report.

OPPORTUNITIES FOR IMPROVEMENT

- Efforts to accelerate all phases of the clearance process continue with the assistance of DOE-RL. NMS is actively engaged in adding appropriate staff to catch back corresponding schedule delays.
- There is a need to identify and consolidate various cost saving initiatives resulting from increased operating efficiencies. Conduct a summit meeting of all parties to maximize efforts and direct savings to accelerate

Yellow

Green

stabilization activities.

- Initiated accelerated furnace cool-down work plan and early tests indicate a significant savings in time required for cool-down. Opening the furnace doors at 400 degrees increased the glovebox temperature only two degrees temporarily and saved over three hours in the cooling time. Expect to be able to continue to at least 600 degrees without negative effects.



UPCOMING ACTIVITIES

- Complete furnace cool-down tests and implement new procedures
- Begin Pu solution stabilization via Mg(OH)₂ in FY 2000
 - Deliver glove boxes and equipment for installation by April 11, 2000
 - Complete ORR and training activities
- Startup Cementation by April 21, 2000
- Complete Pipe-and-Go evaluation and long lead regulatory permits
- Complete W-460 Facility Design by April 2000
- Complete installation and startup of the BTS by October 2000
- Begin metal stabilization processing in November 2000

COST PERFORMANCE (+\$5.5M):

	BCWP	ACWP	VARIANCE
Nuclear Material Stabilization	\$35.9	\$30.4	\$5.5

The \$5.5 million (15.3 percent) favorable cost variance is due to a shortage of staff and, a lag in costs for contracts [(e.g., including the Energy Services contract for steam, Mg(OH)₂ glove box procurement, etc].

SCHEDULE PERFORMANCE (\$-5.3M):

	BCWP	BCWS	VARIANCE
Facility Stabilization	\$35.9	\$41.2	-\$5.3

The \$5.3 million (12.9 percent) unfavorable schedule variance is due primarily to the behind status on Project W-460 vault modification construction awaiting final determination from EIS Supplement Analysis and equipment procurements, such as glove boxes, NDA lab equipment and outer can welder activities. Also, Project W-460 trailer installation activities have not started as scheduled but instead will be removed as part of the DOE-HQ directed 5% funding reduction in FY 2000. Also contributing to the unfavorable schedule variance is the behind schedule status on special projects (sanitary water system upgrade, Criticality Alarm Panel upgrade and radiation monitoring constant air monitor upgrade); and, late startup on core sample analyses at the 222-S Analytical Laboratory from tank 241-Z-361.

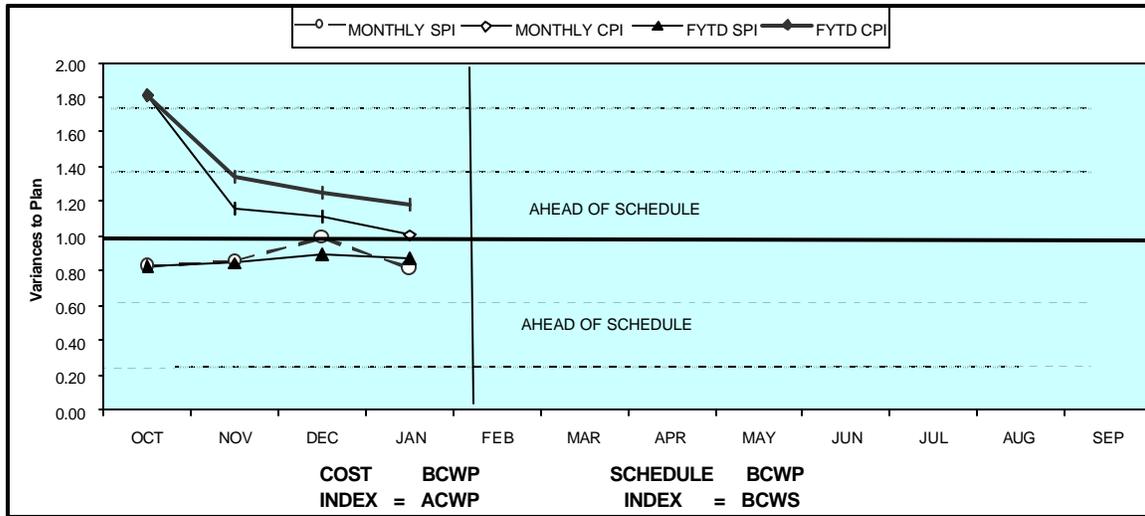
**FY 2000 COST/SCHEDULE PERFORMANCE – ALL FUND TYPES NUCLEAR
 MATERIALS STABILIZATION PROJECT
 WBS 1.4.52
 CUMULATIVE TO DATE STATUS – (\$000)**

Bv PBS	FYTD								Auth Bsin	PTS BCWS
	BCWS	BCWP	ACWP	SV	%	CV	%			
TP05	\$41.2	\$35.9	\$30.4	\$(5.3)	-13%	\$5.5	15%	\$125.4	\$127.9	
Total	\$41.2	\$35.9	\$30.4	\$(5.3)	-13%	\$5.5	15%	\$125.4	\$127.9	

Yellow

RL-Directed costs (steam) are included in the PTS BCWS.

**NUCLEAR MATERIALS STABILIZATION PROJECT
 COST/SCHEDULE PERFORMANCE INDICES
 (JANUARY 2000 AND FYTD)**



FY 2000	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MONTHLY SPI	0.83	0.85	0.99	0.81								
MONTHLY CPI	1.81	1.16	1.11	1.01								
FYTD SPI	0.83	0.84	0.89	0.87								
FYTD CPI	1.81	1.34	1.25	1.18								
MONTHLY BCWS	\$7,913	\$12,723	\$9,919	\$10,631								
MONTHLY BCWP	\$6,543	\$10,873	\$9,849	\$8,638								

ISSUES

DOE Standard 3013-99 has been issued requiring the material to have less than 0.5% residual moisture. Current sampling techniques do not clearly demonstrate that PFP meets that standard.

Impact(s): There is a possibility that additional sampling and analysis or stabilization work would be required prior to acceptance of the material by Savannah River Site.

Corrective Action: Sampling, analysis, and data handling improvements will be put into place to allow demonstrated compliance with the standard. These improvements will be based upon established Data Quality Objectives and Quality Assurance requirements.

Lack of certified shipping containers in the DOE Complex to meet PFP schedules.

Impact(s): Prohibits shipment of nuclear materials that cannot go to either WIPP or DOT-6M containers (i.e., Pu standards for recertification, shipment of reactive materials for processing elsewhere, etc.)

Corrective Action: Work with the DOE Complex to certify containers to meet PFP shipping needs (i.e., 9975 container to be re-certified in June 2000, etc.).

Jointly resolve issues associated with precipitation process. Concentration, Density, Filtrate Handling (permitting of 241-Z to handle heavy metals), discard directly to tank farms.

Impact(s): Significantly impacts the number of containers to be stored under final disposition (approximately 1000 additional containers).

Corrective Action: Establish a team to develop a path forward to resolve these issues.

COST VARIANCE ANALYSIS: (+\$5.5M)

WBS/PBS

Title

1.4.5.1.10/TP05

Maintain Safe and Secure SNM (+\$0.8M)

Description and Cause: Underrun due to staff shortages and increased shift in support of stabilization from current Vault Operations staff.

Impact: No impact.

Corrective Action: None required.

1.4.5.1.11/TP05

Maintain Safe & Compliant PFP (+\$0.7M)

Description and Cause: Underrun due to staff shortages and increased shift in support of stabilization from current base operations staff.

Impact: No impact.

Corrective Action: None required.

1.4.5.1.13/TP05 Stabilization of Nuclear Materials at PFP (+\$4.5M)

Description and Cause: Positive cost variance is due to staff shortages, lag in contract costs and ahead of baseline schedule completion of Oxide Stabilization (140 items) with fewer resources as a result of increased charge size. Oxide stabilization will continue at an accelerated pace past completion of base and towards completion of stretch performance initiatives.

Impact: Lack of adequate staff could impact completion of reside stabilization and stretch performance initiative activities.

Corrective Action: Continue to place high priority on hiring, training, and clearing staff to support stretch stabilization performance initiative activities. Approve and implement baseline change requests pertaining to polycube stabilization and cementation. Initiate process to ensure contract costs are appropriately reflected.

1.4.5.1.14/TP05 Disposition of Nuclear Materials (+\$1.8M)

Description and Cause: Underrun due primarily to lag in contract accruals.

Impact: No impact.

Corrective Action: None required.

1.4.5.1.15/TP05 Transition PFP (-\$0.1M)

Description and Cause: Overrun due to higher than expected polychlorinated biphenyl (PCB) levels detected interfering with lab analyses of tank 241-Z-361 core samples. Presence of PCBs in tank 241-Z-361 may impact path forward disposition of tank.

Impact: Additional samples may be required to determine levels of PCBs in the tank and how to disposition its contents; may impact overall schedule and cost.

Corrective Action: Expecting to recover the delay in sample analysis progress in February, which will decrease the cost variance.

1.4.5.1.12/TP05 PFP Fee Allocation (-\$1.8M)

Description and Cause: Unfavorable cost variance due to point adjustment in October (<\$1,769K>) to account for delay in staff hiring in FY 1999 impacting staff ramp up in FY 2000. Also the fee is being accrued at a rate of 100% which is higher than the budgeted rate.

Impact: No impact.

Corrective Action: None required.

SCHEDULE VARIANCE ANALYSIS: (-\$5.3)

WBS/PBS

Title

1.4.5.1.14/TP05 Disposition of Nuclear Material (-\$4.7M)

Description and Cause: Vault modification construction not yet started. Waiting final determination from EIS Supplement Analysis (SA). Equipment procurements (gloveboxes, NDA lab equipment, and out can welder) have been delayed. Installation of support trailer, now

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Section D: 1 – Nuclear Material Stabilization

planned to be ongoing, has been suspended as part of the DOE-HQ directed 5% funding reduction in FY 2000.

Impact: May significantly impact startup of Bagless Transfer System at Hanford in October 2000.

Corrective Action: Approve EIS Supplement Analysis or determine which portions of Project W-460 are covered by the existing EIS and proceed on those areas.

1.4.5.1.15/TP05 Transition PFP (-\$0.1M)

Description and Cause: Behind schedule due to late startup on core sample analyses at the 222-S Analytical Laboratory (not highest priority at the labs).

Impact: No Impact

Corrective Action: Expect to recover schedule on core sample analyses in February 2000.

BASELINE CHANGE REQUESTS CURRENTLY IN PROCESS
(\$000)

PROJECT CHANGE NUMBER	DATE ORIGINAL	BCR TITLE	FY00 COST IMPACT	SCH	TECH	DATE TO FHI CCB	CCB APR'VD	RL APR'VD	CURRENT STATUS
FSP-2000-001	13-Oct-99	Delete TRP-99-419, Complete Install. of Production Scale Vertical Calciner	\$0						Deleted
FSP-2000-004	23-Nov-99	PFP Test Polycube Stabilization via Muffle Furnace	\$0	X	X	17-Feb-00	17-Feb-00		RL-Project review 2/24/00
FSP-2000-005	30-Nov-99	Implement PFP Int Proj Mgmt Plan Addendum I	\$659	X	X				In Progress
FSP-2000-011	27-Dec-99	Adjusted PFP Cementation Processing to include Sand, Slag and Crucible	\$0	X	X	14-Jan-00	18-Jan-00	17-Feb-00	Approved by RL
FSP-2000-014	17-Jan-00	PFP Access Security Modifications	TBD	X					In Progress
FSP-2000-015	17-Jan-00	PFP Access Denial System Modifications	TBD		X				In Progress
FSP-2000-016	17-Jan-00	PFP-SAS Resource Re-Alignment	TBD		X				In Progress
FSP-2000-017	17-Jan-00	Retire NMSS Safeguards Computer System	TBD						In Progress
FSP-2000-019	26-Jan-00	PFP FY2000 Funds Reduction	\$6,885	X	X				In Progress
FSP-2000-020	27-Jan-00	PFP Repricing	TBD						Cancelled
ADVANCED WORK AUTHORIZATION									
AWA-00-001	Nov-00	Polycube Stabilization Testing	\$687	X	X			X	Approved by RL
AWA-00-002	Nov-00	Residue Cementation	\$500	X	X			X	Approved by RL
AWA-00-003	Jan-00	Main Power Transformers	\$350	X				X	Approved by RL

NUCLEAR MATERIALS STABILIZATION PROJECT – WBS 1.4.5 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	0	0	0	0	1	0	2
DOE-HQ	0	0	0	1	0	0	0	1
RL	1	0	0	0	0	10	0	11
Total Project	2	0	0	1	0	11	0	14

Tri-Party Agreement / EA Milestones	
Tri-Party Agreement Milestone M-15-37A (TRP-00-501), “Deliver Two (2) Tank Z-361 Core Samples to 222-S”, due 10/30/99 Completed 1 month early (9/28/99)	Green
DNFSB Commitments	
DNFSB Milestone IP-113 (TRP-00-500), “Install 2 LANL Pyrolysis Units for Stabilization of Polycubes at PFP”, due 12/31/99 <ul style="list-style-type: none"> • Alternative path forward using PFP muffle furnaces recommended. Thermal stabilization testing at Hanford’s PNNL and PFP’s PPSL underway consistent with approved AWA. Issued path forward recommendation to use direct thermal stabilization process versus pyrolysis. • Baseline change request prepared documenting this change in polycube stabilization methodology and is in the DOE-RL approval process. 	Green

MILESTONE EXCEPTION REPORT

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

TRP-00-500	HQ	Install Two LANL Pyrolysis Units for Stabilization of Polycubes	12/31/99	Proposed Deletion
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Cause: An alternative path forward using muffle furnaces for stabilization of polycubes has been recommended. A letter was issued to Department of Energy, Richland Office (DOE-RL) stating this Defense Nuclear Facility Safety Board milestone would not be met.

Corrective Action: Thermal stabilization testing at Hanford’s Pacific Northwest National Laboratory and the Plutonium Finishing Plant’s Plutonium Process Support Laboratories is underway with an approved Advance Work Authorization. A baseline change request has been prepared documenting this change in polycube stabilization methodology and is in the DOE-RL approval process.

FY 1999 OVERDUE – 2

TRP-99-419 RL Complete Installation of Production Scale Vertical Calciner 09/30/99 Proposed Deletion

Cause: The production scale vertical calciner has been replaced with the Magnesium Hydroxide Precipitation process.

Impact: No impact. This milestone is obsolete.

Corrective Action: Since installation and testing of the production scale vertical calciner is an EM-65 Management Commitment, the Department of Energy, Richland Office (DOE-RL) change control process cannot remove this milestone.

TRP-99-500 HQ Complete Installation & Testing of Production Vertical Calciner 09/30/99 Proposed Deletion

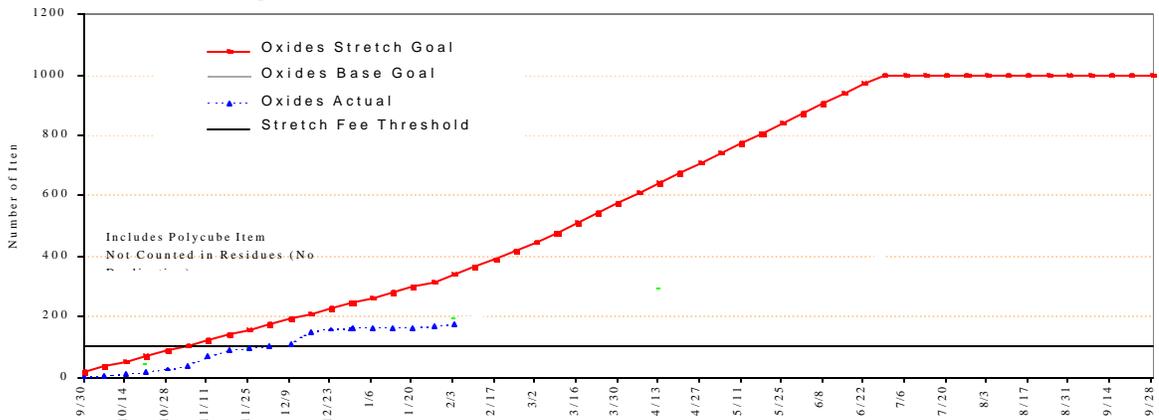
Cause: The production scale vertical calciner has been replaced with the Magnesium Hydroxide Precipitation process.

Impact: No impact. This milestone is obsolete.

Corrective Action: Since this milestone is a DOE-HQ milestone and is part of the DOE-HQ 1998 DNFSB Recommendation 94-1 Implementation Plan, the Department of Energy, Richland Office change control process cannot remove this milestone. However, this milestone will be removed upon approval of the revised DOE-HQ DNFSB Recommendation 94-1 Implementation Plan in early FY 2000.

PERFORMANCE OBJECTIVES

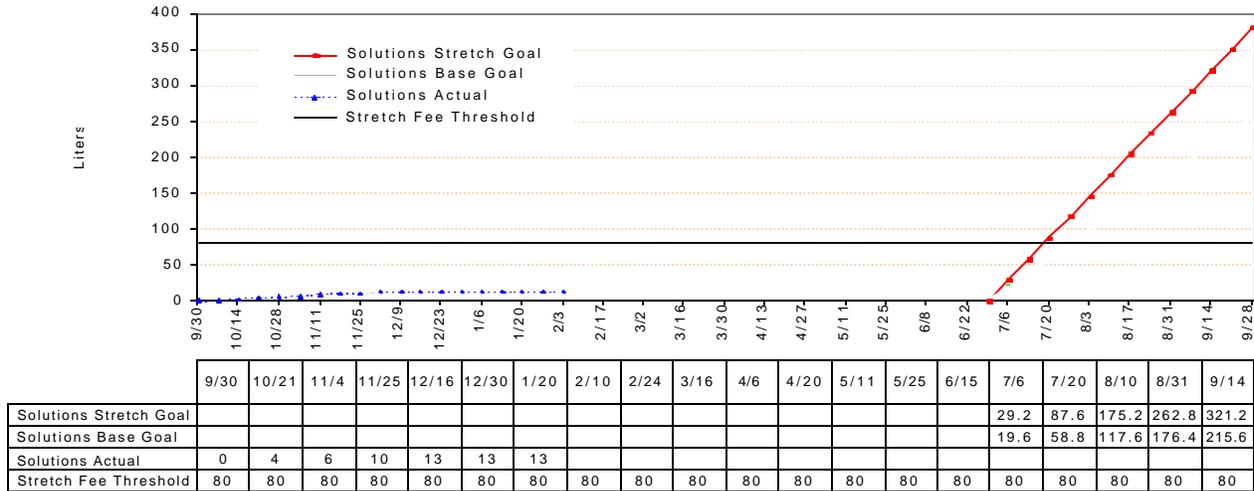
Oxides/Metals/Polycubes Stabilization



	9/30	10/14	11/4	11/18	12/9	12/23	1/6	1/27	2/10	3/2	3/16	4/6	4/20	5/4	5/25	6/8	6/29	7/13	7/27	8/17	8/31	9/21
Oxides Stretch Goal	18	53	106	141	194	229	265	318	366	449	512	611	677	743	842	908	1000	1000	1000	1000	1000	1000
Oxides Base Goal	10.1	30.2	60.5	80.6	110.9	131.0	151.2	181.4	201.6	231.8	252.0	282.2	302.4	322.6	352.8	373.0	400.0					
Oxides Actual	0	10	35	87	107	157	164	169														
Stretch Fee Threshold	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

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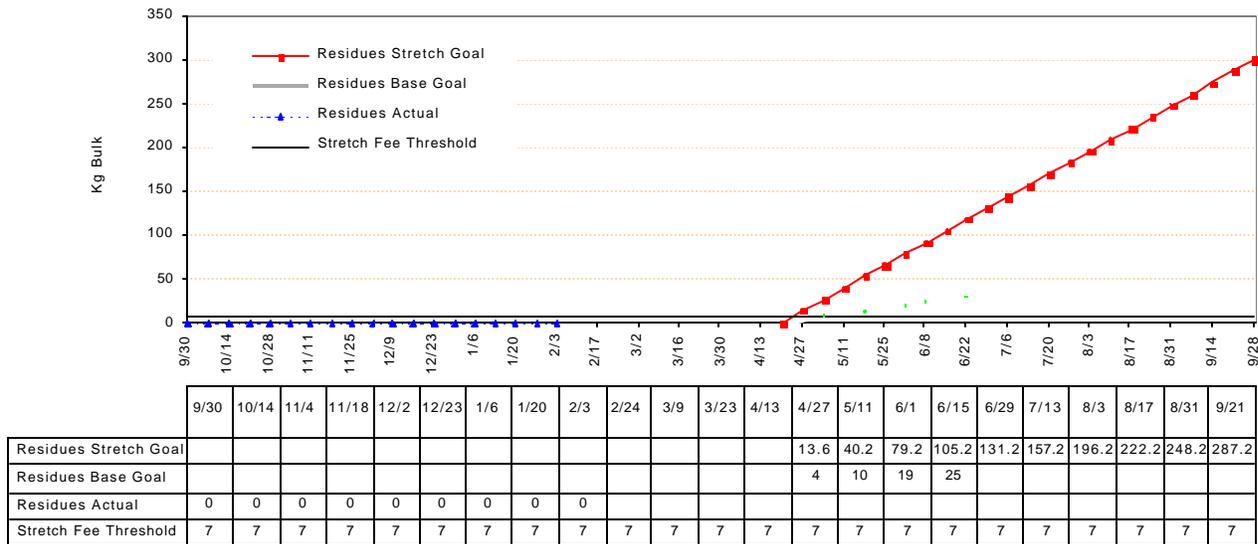
SOLUTION STABILIZATION



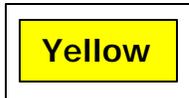
Aggressively pursuing construction completion in support of stabilization activities.



RESIDUES STABILIZATION



Currently working Central Waste Complex / WIPP Acceptance and RCRA permitting issues.



KEY INTEGRATION ACTIVITIES

- Continue working with PNNL on activities associated with the Mg(OH)₂ process and polycube stabilization issues
- Continue discussions with Waste Management regarding Waste Isolation Pilot Program certification