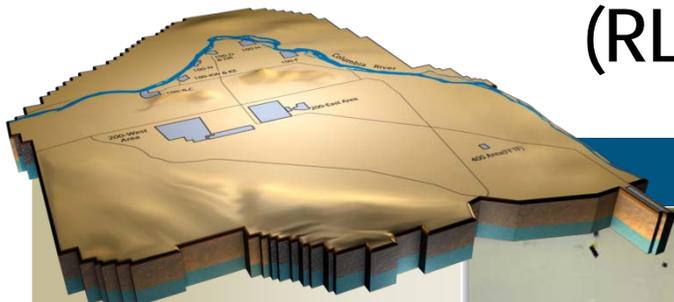


Section A

Nuclear Materials Stabilization and Disposition of PFP (RL-0011)



Monthly Performance Report

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Vice President and
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Room 230C Preparing HC-230C-4 for removal from room

November 2010
DOE/RL-2010-126-11, Rev. 0
Contract DE-AC06-08RL14788
Deliverable C.3.1.3.1 - 1



GB642E and GB642D staged for removal by SWO organization

PROJECT SUMMARY

The PFP Project continues to maintain Plutonium Finishing Plant (PFP) facilities compliant with authorization agreement requirements.

American Recovery and Reinvestment Act (ARRA)

Removal of plutonium-contaminated process equipment continued as a top priority in readying the PFP Complex for demolition. A total of 82 gloveboxes and hoods have been removed to date with Recovery Act funds. Of these, 67 have been shipped out of PFP for treatment or disposal. An additional five have been packaged into an IP-2 waste shipping container awaiting shipment, three have been removed and are waiting to be loaded into shipping containers. As the pace of Decontamination and Decommissioning (D&D) work accelerates, so does the waste generation at PFP. CHPRC has now shipped approximately 2,386 cubic meters of waste from PFP with support from Recovery Act funds, including 2,135 cubic meters of low level and mixed low level waste (LLW/MLLW), 229 cubic meters of TRU waste, and 22 cubic meters of non-radioactive waste.

Nondestructive assay measurement of process support equipment is on schedule. To date, 380 feet of process vacuum piping has been removed, size-reduced, and packaged into waste containers waiting disposition. In addition, 268 feet of transfer lines have been removed, size-reduced and packaged into waste containers waiting disposition.

With five of nine gloveboxes removed and all process equipment removed from the others, the former PFP Special Nuclear Material Storage Vault Complex is rapidly approaching a ready-for-demolition condition. Process equipment removal, chemical decontamination efforts, electrical isolation of various rooms and areas, and removal of hazardous materials that must be disposed of separately from the demolition debris continue in the laboratory and processing areas HC-230C-5 was separated from a nearby conveyor glovebox and preparations were completed for removal from the process area. In the former Radioactive Acid Digestion Test Unit area, process equipment removal continued on glovebox 200 and a final characterization report confirmed that glovebox 100A can be disposed of as LLW. In addition, the Remote Mechanical C (RMC) Line crew continued installation of plastic sleeving and made other preparations to separate large glovebox HC-230C-3 into two sections so it can be removed from the area. Recovery actions from a contamination event in Room 139 of the Analytical Laboratory progressed sufficiently that gloveboxes 139-1, 2, and 6 could be removed from the room and staged for size reduction. Also in the Analytical Laboratory, the doorway of room 144 was widened, to allow for removal of glovebox 144-9 and transferred to PFP waste operations for disposal as low level waste. Installation of temporary power and lighting in the 242Z Control Room was completed and work continued to electrically isolate the facility. In addition, entries were made into 242Z to obtain characterization samples from gloveboxes WT-3, 4, and 5.

Base

236Z Plutonium Reclamation Facility – Cleaning of the canyon floor was initiated. Cleaning of seven of the fifteen pans is complete. Size reduction and disposal of the two canyon floor slurp heads was completed, after which size reduction of the pencil tank assemblies will be initiated.

EMS Objectives and Target Status

Objective #	Objective	Target	Due Date	Status
		➤ Actions to achieve target		
11-EMS-PFP-OB1-T1	Broaden spill mitigation efforts at PFP	Reduce opportunity for hydrocarbon spills		10% Complete
		➤ Evaluate additional controls	12/31/2010	
		➤ Standardize controls for SOWs	3/31/2011	
		➤ Evaluate alternate fuel options	6/30/2011	
11-EMS-PFP-OB2-T1	Reduce number of private vehicles used for commuting to/from PFP	Ben Franklin Transit (BFT) bus service		5% Complete
		➤ Conduct survey	12/31/2010	
		➤ Summarize survey results	3/1/2011	
		➤ Obtain cost estimate	5/1/2011	
		➤ Report to management	7/1/2011	
11-EMS-PFP-OB3-T1	Materials Redeployment	Redeployment of unused and contaminate free items		5% Complete
		➤ Review release procedures	12/31/2010	
		➤ Evaluate excess practices	3/31/2011	
		➤ Evaluate procurement practices	6/30/2011	
		➤ Document 3 successes	9/30/2011	

TARGET ZERO PERFORMANCE

	Current Month	Rolling 12 Month	Comment
Days Away, Restricted or Transferred	0	6	
Total Recordable Injuries	0	11	
First Aid Cases	9	109	<p>ARRA - 11/3 Employee received an abrasion on his side when descending a scaffold. (21439)</p> <p>Base - 11/3 Employee strained right ankle and left knee. (21449)</p> <p>ARRA - 11/10 Employee experienced dust in the eye. (21487)</p> <p>Base - 11/16 Employee experienced pain in hands and arms due to repetitive motion. (21502)</p> <p>Base - 11/18 Employee received a laceration to index finger. (21523)</p> <p>ARRA - 11/7 Employee experienced tendinitis in his right wrist. (21476)</p> <p>ARRA - 11/17 Employee strained left knee. (21512)</p> <p>ARRA - 11/18 Employee received a contusion to the forehead after hitting hard hat on low section of duct. (21520)</p> <p>ARRA - 11/30 Employee was struck by door hardware that came loose as they were stepping through the door. (21553)</p>
Near-Misses	0	0	N/A

KEY ACCOMPLISHMENTS

11.02 Maintain Safe and Compliant PFP – Base

An Evaluation of the Safety of the Situation (ESS) to allow 242Z D&D activities to commence has been drafted and round-table reviewed with RL Safety and Engineering Division. Once ventilation pressure measurement uncertainty issues are resolved, the ESS will be formally submitted.

11.05 Disposition PFP Facility – Base

Plutonium Reclamation Facility (PRF)

- Cleaning of the canyon floor was initiated. Seven of the fifteen pans have been completed.
- Mechanical isolation and decontamination of the maintenance glovebox was completed
- The Criticality Safety Evaluation Report and Criticality Prevention Specification required for the size reduction of the maintenance, canning and charging gloveboxes were issued.
- The work package for size reduction of the maintenance glovebox was approved and is scheduled for Hazard Review Board review.
- Electrical isolation of the canning and charging gloveboxes was completed. In addition, Mechanical isolation of the canning and charging gloveboxes was initiated and is approximately 65% complete.
- RLs concurrence was received on leaving the gallery gloveboxes in place for demolition with the facility

11.05 Disposition PFP (234-5Z) Facility – ARRA

- In Remote Mechanical A (RMA) Line Room 235B, the team continued the isolation of the ventilation for HA-28 conveyor to prepare for the removal of this conveyor. In addition, this team supported the successful completion of the readiness assessment for the use of the Aspigel® chemical decontamination method at PFP
- In RMA Line Room 232, the characterization entries into the HA-46 process cell were completed
- In RMC Line Room 230C, gloveboxes HC-230C-4 and HC-230C-5 were removed and glovebox HC-230C-3 was taken off ventilation and relocated within the room. HC-230C-3 is being separated into two sections to facilitate the removal of this large glovebox from Room 230C.
- In the RADTU area, Room 235D, the D&D team continued with the GB200 internal process equipment removal and started preparations in Room 235E to remove GB100A

Analytical Laboratory

- Decontamination efforts are complete for the six gloveboxes in Room 139. Attempts for meeting LLW requirements were unsuccessful. The gloveboxes will be removed and set aside for future size reduction and packaging as transuranic (TRU) waste.
- The 144-9 Hood was mechanically isolated, successfully decontaminated to LLW levels, separated from its E4 connection, and set aside in Room 144. Removal of the hood is pending completion of minor modifications to enlarge the door.

Plutonium Process Support Laboratories

- Process equipment removal was completed for the 179-5 Glovebox, and decontamination efforts were commenced

Disposition PFP (234-5Z) Facility

- Phase I Process Vacuum Piping Removal was completed
- A total of 268 feet of Chemical Piping Transfer Line has been removed
- Removed 619 feet of asbestos-containing materials on piping

242Z Americium Recovery Facility

- Decontamination was completed on the 242Z airlock to a level that does not require respirators
- The electrical isolation of the 242Z building is 60% complete. Work packages for removing WT-2, and WT-3, 4, & 5 have been developed and work is scheduled to begin in late December.

2736Z/ZB Vault Complex

- Removed GB642D and GB642E from 2736ZB
- Removed 90 % of the support equipment in Rooms 641 and 642
- Electrically Isolated the Liquid Nitrogen Generator

MAJOR ISSUES

RL-0011 Nuclear Materials Stabilization and Disposition of PFP

Issue Statement – More effective decontamination agents for gloveboxes/hoods with contamination etched into the stainless steel by historical liquid chemical processes are not currently available.

Corrective Action/Status – The independent Readiness Assessment (RA) team completed its readiness review of Aspigel[®] on November 19. The team identified one pre-start finding, two post-start findings, and two observations. PFP has completed the causal analysis and the corresponding corrective actions for the pre-start finding, and the startup authority granted permission to proceed with the activity on December 3, 2010. Final preparations to prepare glovebox HA-19 for the application of Aspigel[®] are ongoing. Currently, PFP intends to begin chemical decontamination with Aspigel[®] on or about December 9.

Issue Statement – PFP submitted an “R” occurrence report due to recurring events and overall poor conduct of operations.

Corrective Action/Status –

- Implemented Senior Supervisory Oversight
- Brought in outside expertise to assist the project in performance of the Common Cause Analysis
- Common Cause Analysis prepared and approved by Executive Safety Review Board
- Corrective Actions entered into CRRS (CR 2010-2424)
- Occurrence Report is Final

RISK MANAGEMENT STATUS

Unassigned Risk
Risk Passed
New Risk

● Working - No Concerns Increased Confidence
● Working - Concern No Change
● Working - Critical Decreased Confidence

Risk No.	Risk Title	FY09 Risk		Risk Strategy/Handling	Assessment		Comments
		Unmit.	Mitig.		Month	Trend	
RL-0011/WBS 011							
PFP-001	PFP-001: Inability to effectively decontaminate equipment/materials to LLW	Medium	1.5 mos; to \$1.5M	Develop decontamination approach and perform proof-of-principle testing early enough to minimize the potential for unanticipated TRU waste. Incorporate surgical removal of isolated TRU on gloveboxes into the baseline. Implement use of the Contaminated Equipment - Special Package Authorization (CE-SPA) process for cases where the Surface Contaminated Object (SCO) survey process is not practical. Establish size reduction stations as needed.	●	↑	The RA for the Aspigel decontamination process was successfully completed. Deployment of Aspigel on gloveboxes HA-19B1 and B2 and startup of the first centralized size reduction station remain on-track for early December. Planning for a second size reduction station to be on-line by April has been initiated. Contract negotiations are underway with PermaFix NW to provide an alternate path for disposition of process equipment requiring treatment and disposal as TRU waste. The extended, life cycle recovery plan has been briefed to DOE-RL, and is being incorporated in the Field Execution Schedules. A baseline change and request for drawdown of Management Reserve are being prepared for implementation during December.
	PFP-004: Risk of PRF Canyon D&D cost/schedule growth			Complete detailed planning/engineering for D&D of PRF canyon, particularly pencil tank removal and canyon decontamination.	●	↑	Work to clean up the canyon floor is more than 50% complete and going well, providing increased confidence that this work can be completed by December 31. Glovebox cleanup and removal is continuing on schedule. A Baseline Change Request has been developed and implemented to reflect the manual size reduction approach for pencil tank disposition and to eliminate provisions for procurement of heavy equipment and the facility modifications necessary to support its use inside the canyon.
	PFP-004A: Risk of 291-Z D&D cost/schedule growth	Medium	> 2 months; \$6M	Complete detailed planning/engineering for D&D of 291-Z, particularly characterization to help definitize the scope of work for relatively inaccessible areas and evaluation of the need for an alternate exhaust system.	●	↔	Work documents and preparations for initial inspection of the 291-Z plenum are complete, however field work was delayed from November to early December to avoid impacting ongoing D&D activities. A three-day offsite workshop was held with the contractor selected for conceptual design of an alternate exhaust system. Higher level user requirements were defined and several alternative technical approaches were identified for further development and evaluation.
	PFP-009: Problems with Aging Building Systems/Components Impacts D&D	Medium	up to 2 months; up to \$2M	Perform critical system reliability assessments; procure critical spares; maintain existing redundancies; repair or replace equipment as failures occur. Procurement of a supplemental cooling system for 234-5Z, 242-Z and 236-Z, and provisions for stabilization of the below-grade piping encasement to 241-Z are incorporated in PMB-2.	●	↑	No significant failures were experienced in November, although older continuous air monitors are continuing to be a source of spurious alarms due to electronic interferences or because they are less effective than the newer CAMs at differentiating activity from natural radon from other radioactive contaminants. CAMs are being replaced as quickly as newer CAMs can be obtained and deployed into the field.
	PFP-034: Assessment Findings or Off-Normal Event Impacts			ISMS and work processes are designed to minimize the potential for significant occurrences and resulting programmatic impacts.	●	↑	The greatly expanded beryllium sampling program continues to support the low potential for beryllium contamination at PFP, with no positive sample results to date. The Senior Supervisory Observation program continued during November, and actions were taken to increase the level of activity under the Workers Observing Workers program. Two minor stop-work events were experienced, both being resolved by the work teams within one working day. Improvement actions from the "R" occurrence report issued in August and the PFP Performance Improvement Plan continued, and the frequency of reportable events remained well below the trend that led to issuance of the "R" report.
	PFP-036: Loss of Contamination Control			Rigorous routine radiological surveillance program and contamination control measures.	●	↑	Recovery from the contamination spread in room 139 of the Analytical Laboratory is virtually complete and five of the six gloveboxes in the room were removed and staged for size reduction. Several lesser contamination events were experienced in November with only minor impacts.

PROJECT BASELINE PERFORMANCE

Current Month

(\$M)

WBS 011/RL-0011 Nuclear Matl Stab & Disp PFP	Budgeted Cost of Work Scheduled	Budgeted Cost of Work Performed	Actual Cost of Work Performed	Schedule Variance (\$)	Schedule Variance (%)	Cost Variance (\$)	Cost Variance (%)
ARRA	9.2	8.3	9.6	(1.0)	-10.6	(1.3)	-15.9
Base	3.6	3.5	3.2	(0.1)	-3.8	0.3	7.2
Total	12.8	11.7	12.8	(1.1)	-8.7	(1.1)	-9.1

ARRA

CM Schedule Variance: (-\$1.0M/-10.6%)

Glovebox removal delayed by difficulty and complexity associated with removing glovebox exhaust system, shortage of D&D crew resources. Delays in removing gloveboxes and pipe are impacting miscellaneous D&D of 234-5Z.

CM Cost Variance: (-\$1.3M/-15.9%)

234-5Z D&D crews are dedicated and continue to charge during non-productive periods, increased overtime to support recovery, and lagging facility modifications material/subcontract payments.

Base

CM Schedule Variance: (-\$0.1M/-3.8%)

Current month schedule variance is within reporting threshold.

CM Cost Variance: (+\$0.3M/+7.2%)

Current month cost variance is within reporting threshold.

Contract-to-Date (\$M)

WBS 011/ RL-0011 Nuclear Matl Stab & Disp PFP	Budgeted Cost of Work Scheduled	Budgeted Cost of Work Performed	Actual Cost of Work Performed	Schedule Variance (\$)	Schedule Variance (%)	Cost Variance (\$)	Cost Variance (%)	Budget at Completion (BAC)	Estimate at Completion (EAC)	Variance at Completion (VAC)
ARRA	168.6	158.4	153.1	(10.2)	-6.0	5.4	3.4	277.5	277.8	(0.3)
Base	<u>129.8</u>	<u>130.1</u>	<u>127.6</u>	<u>0.4</u>	0.3	<u>2.5</u>	1.9	<u>326.8</u>	<u>352.0</u>	<u>(25.6)</u>
Total	298.4	288.6	280.7	(9.8)	-3.3	7.9	2.7	604.2	629.8	(25.6)

Numbers are rounded to the nearest \$0.1M.

ARRA

CTD Schedule Performance: (-\$10.2M/-6.0%)

Negative schedule variance is primarily caused by:

- Safety stand-down and stop works
- Breathing air issues
- Ultra conservative application of the SCO process
- Unplanned process vacuum mockup work to support application of new glovebag technique
- Additional time needed on chemical decontamination and the removal of external connections

Recovery – Utilization of an additional decontamination agent (Aspigel[®]), additional overtime, leaving gloveboxes in place for removal during demolition, implementing a new containment approach, prioritizing and reassigning resources, outsourcing a portion of the TRU gloveboxes for treatment/size-reduction, and application of the revised SCO process are expected to contribute to the gradual schedule recovery. The Aspigel[®] Readiness Assessment was completed; and will be deployed mid-December. The concept to leave four KPP-related gloveboxes in place for extraction during building demolition was presented to DOE-RL with favorable initial response. BCR-PRC-11-011R0, *Replan PFP Work Scope to Align with Recovery Plan*, will be implemented in December. Four of the 174 KPP gloveboxes in 234-5Z are forecast to complete two months beyond the 9/30/11 completion date. Actions will be taken to accelerate completion of the four gloveboxes to ensure meeting the KPP.

CTD Cost Performance: (+\$5.4M/+3.4%)

Efficiencies recognized on cross-cutting support to the D&D work teams (primarily in solid waste management, project management, nondestructive assay, consumables and subcontracts), demolition of ancillary buildings, and the removal of asbestos and non-process equipment from 234-5Z are the cause of this positive variance.

NOTE: This positive cost variance is expected to diminish as corrective actions and recovery plans are implemented. Additional overtime will be used to mitigate schedule delays and maintain baseline milestones. Overtime will be monitored closely to ensure the Cost Performance Index does not fall below the threshold of 1.00.

Base

CTD Schedule Variance (+\$0.4M/0.3%)

The positive schedule variance is within established reporting thresholds.

CTD Cost Variance (+\$2.5M/+1.9%)

This positive cost variance is within established reporting thresholds. Contributors to the variance include early completion of Special Nuclear Material De-Inventory, D&D Materials Subcontracts, Waste Container

Procurements, D&D staff ramp-up, recognized efficiencies in Min-Safe Operations and Demolition, and PRF east gallery glovebox cleanout.

Recovery – This positive cost variance is expected to decrease with increased utilization of overtime to recover schedule associated with the PRF canyon floor cleaning and Canning and Charging glovebox removals, but will be monitored closely to ensure the trend does not drive CPI below the threshold of 1.0.

Contract Performance Report Formats are provided in Appendix A and Appendix A-1.

FUNDS vs. SPEND FORECAST (\$M)

WBS 011/RL-0011 Nuclear Matl Stab & Disp PFP	FY2011		Variance
	Projected Funding	Spending Forecast	
ARRA	163.1	148.1	15.0
Base	<u>45.3</u>	<u>44.8</u>	<u>0.5</u>
Total	208.4	192.9	15.6

Funds/Variance Analysis

Funding includes FY2010 carryover and FY2011 new budget authority. The positive variance in ARRA reflects the incorporation of the assumptions that efficiencies and opportunities will be recognized for the recovery of ARRA work scope to support completion of RL-0011.R1-KPP-1 - Building 234-5Z Process and Laboratory Areas Ready for Demolition (174 GB's).

Critical Path Schedule

Critical Path analysis can be provided upon request.

Estimate at Completion (EAC)

The BAC and EAC now include FY2009 through FY2018, the PRC contract period.

Baseline Change Requests

BCRA-PRC-11-008R0, General Administrative Changes for November 2010

Milestone Status

None at this time.

SELF-PERFORMED WORK

The Section H. clause entitled, "Self-Performed Work," is addressed in the Monthly Report Overview.

GOVERNMENT FURNISHED SERVICES AND INFORMATION (GFS/I)

None identified at this time.