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

CH2MHILL
Plateau Remediation Company

J.W. Long
Vice President and
Project Manager for
PFP Closure Project

March 2012
CHPRC-2012-03, Rev. 0
Contract DE-AC06-08RL14788
Deliverable C.3.1.3.1 - 1

PROJECT SUMMARY

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

Key Performance Indicators	*Current Month*	*Contract To Date*
Glovebox/ Hood Removed or Dispositioned in Place	-	162 gloveboxes/hoods
KPP Rooms/Areas Dispositioned	-	53 rooms/areas
Asbestos/ACM Removed	230 feet	16,243 feet
Process Vacuum Piping Removed	-	1,210 feet
Process Transfer Line Removed	-	594 feet
Pencil Tank Units Removed	15	75 pencil tank units
Buildings Ready for Demo	-	32 structures
Buildings Demolished or Relocated	1	30 structures
Non-radioactive Waste Shipped	1 m^3	35 m^3
TRU/TRU-M Shipped	31 m^3	861 m^3
LLW/MLLW Shipped	42 m^3	3,563 m^3

The project achieved more than one million hours worked since the last lost or restricted workday case.

Removal of plutonium-contaminated process equipment continued as a top priority in readying the PFP Complex for demolition, with a particular focus on removal of gloveboxes and associated piping and ductwork from the process and lab areas. 162 (70 percent) of the gloveboxes have been removed to date. Two sections (A and K) of conveyor HC-1 were removed from building ventilation and transferred to Solid Waste Operations. The final section of HC-1 and glovebox HC-10 are fully isolated for removal early next month. Large glovebox HC-21C was ready for removal from Room 230A at month end. Walls were removed from two areas (wall between 235A-1 and 235A-2 and wall between 230A and 230B), which will provide additional working space and facilitates removal of gloveboxes in those areas. The project cut and removed nearly 100 feet of highly contaminated process vacuum lines, which are awaiting size reduction, and an additional 230 feet of asbestos was removed.

Demolition of the buildings in and around the 2736 Vault Complex continued. Five of the six buildings have been demolished, with waste load out remaining on 2736-Z. Demolition of the largest of the facilities—the 2736-ZB Vault Support Facility—is 60 percent complete.

Several process improvements in the size reduction of the 50 liter pencil tank assemblies, experienced gained and the use of overtime has resulted in the size reduction proceeding ahead of schedule. The third increment for the pencil tank Performance Incentive (PI) was completed.

Field work activities for the preparation of the Miscellaneous Treatment (MT) gloveboxes, column gloveboxes and column criticality drains for removal was initiated.

A week long Value Engineering sessions was conducted jointly with representatives from PFP, DOE-RL and the CHPRC Waste & Fuel Management Project. Four significant initiatives and 20 discrete actions were identified with the potential to accelerate schedule and reduce cost (life cycle).

The D&D workforce made good progress this period. Schedule performance continued in a favorable direction, improving eight percent over last month. The cost performance index also continued the favorable trend. Resource utilization declined slightly—91% this month compared to 93% last month.

EMS Objectives and Target Status

Objective #	Objective	Target	Actions to Achieve Target	Due Date	Status
12-EMS-PFP-OB1-T1	Reduce generation/ toxicity of waste through spill reduction	Reduce likelihood of hydraulic spills from D&D work at PFP	Review history of D&D hydraulic failures	12/30/2011	100%
			Identify types of failure and impact	03/29/2012	100%
			Research improved hydraulic line technology	06/29/2012	20%
			Report recommendations to management	07/30/2012	
12-EMS-PFP-OB2-T1	Reduce vehicle miles/ greenhouse gas emissions by use of mass transit	Formally request Ben Franklin Transit (BFT) bus service to 200W/PFP	Formally request BFT/CHPRC to implement	10/31/2011	100%
			Conduct tour/employee meetings with BFT	11/01/2011	100%
			Formally request proposal from BFT	11/24/2011	100%
12-EMS-PFP-OB3-T1	Reduce radioactive air emissions from open air demolition of 236-Z	Decontamination of 236-Z Building canyon	Review decontamination methods	12/30/2011	100%
			Evaluate selected method for air emissions	06/30/2012	15%
			Evaluate method's ability for source reduction	08/31/2012	

TARGET ZERO PERFORMANCE

	Current Month	Rolling 12 Month	Comment
Days Away, Restricted or Transferred	0	4	N/A
Total Recordable Injuries	0	5	N/A
First Aid Cases	9	76	**Base -** 3/1/2012 - Employee experienced lower back pain after missing a step leaving the building. (22686) **Base -** 3/8/2012 - Employee experienced ringing in the ears after doing hearing protection work. (22689) **Base** – 3/8/2012 – Employee received contusion to finger while removing a door. (22690) **Base -** 3/11/2012 – Employee received contusion to left shoulder when a piece of metal tube from scaffolding fell and hit their right shoulder. (22695) **Base -** 3/19/2012 - Employee experienced a bite to their right arm during a meeting. (22704) **Base -** 3/22/2012 - Employee experienced pain in their left knee. (22710) **Base -** 3/26/2012 - Employee experienced neck strain while unloading laundry bags. (22715) **Base -** 3/26/2012 - Employee received a Cyst on right wrist. (22716) **Base -** 3/28/2012 - Employee received a laceration to right finger on DOE prescribed metal badge holder. (22718)
Near Misses	0	0	N/A

KEY ACCOMPLISHMENTS

ARRA

11.05 Disposition PFP Facility – ARRA

- The portion of HA-23S lead shielding planned for removal was completed in Room 235B.
- The 480vac power source for the HA-23S rigging equipment was installed in Room 235B.
- Mechanical and electrical interferences were removed to support the removal of the wall between Rooms 235A-1 and 235A-2.
- The portion of the wall between Rooms 235A-1 and 235A-2 that was planned for removal was completed.
- The remaining large emergency exhaust valve over the HC-1 conveyor in Room 228A was removed.
- Conveyor section HC-1K was removed from Room 228A.
- Activities to support the removal of HC-1B conveyor section and glovebox HC-10 were started in Room 228A.
- Glovebox HC-21C was taken off line in Room 230A and is awaiting completion of the 2736-Z demolition to support a travel route out the South side of 234-5Z.

Base

11.02 Maintain Safe & Compliant PFP - Base

- 291-Z Exhaust Fans
  - Continued work package development in preparation for HRB scheduled for first week of April.
  - Continued Preparations for EF-5 weld repairs
  - Continued weekly fan vibration and thermal monitoring
  - Completed fabrication of inspection windows for exhaust fans and back up steam turbines

11.05 Disposition PFP Facility – Base

Backside Rooms (Rooms 158-172) D&D

- HRB comments on the second work package for mechanical isolation of Room 166 were dispositioned and the package is approved and available ‘on the shelf’ as contingent work for the crew
- Reactivated the 160-1,2 Hoods and installed temporary containment sashes for enhanced radiological control
- Reactivated HC-4 and HC-6 Gloveboxes in preparation for mechanical isolation work
- Installed hot taps on nitric acid and distilled water pipes feeding Room 166 in preparation for piping removal work

Disposition PFP (234-5Z) Facility

- Process vacuum piping removal is just over 30 percent complete with 1,210 total feet removed.
- A total of 594 feet of chemical piping transfer line has been removed.
- 230 feet of asbestos containing material was removed during the month of March. The total is 16,243 feet of asbestos removed.

2736Z/ZB Vault Complex

- Demolition continued on 2736-ZB Complex; which is now 72.5% complete overall.

Plutonium Reclamation Facility (PRF)

- Size reduction of Pencil Tank Assemblies 36, 45, 46, and 49 was completed.
- Size reduction of Pencil Tank Assembly 128 was initiated.
- Beryllium sampling of the MT gloveboxes was completed.
- Field work for the removal of the MT gloveboxes nitric acid lines was initiated.
- Field work was initiated on the removal of the electrical equipment and conduit that will interfere with the removal of the 3rd column criticality drain.
- An electrical intrusive walk down was completed for the removal of the Product Receiver (PR) can load-out station.

MAJOR ISSUES

Issue - On August 29, Exhaust Fan #1 in the 291-Z facility catastrophically failed and caused a small fire when a hot bearing made contact with the drive belt.

Corrective Actions - A thorough evaluation of the 291-Z exhaust fans was performed. The evaluation identified additional mechanical issues with most of the remaining exhaust fans. A positive Unreviewed Safety Question (USQ) determination was declared and Evaluation of Safety of the Situation (ESS) was prepared and submitted to RL for approval. The ESS was approved by RL on September 15, 2011 (Letter #11-SED-0165). Normal ventilation fans were restarted and the Terminate Activities condition was exited. Normal D&D activities were authorized to commence. A JCO was submitted to RL via letter CHPRC-1104667 R1 on November 28 as directed by the ESS.

Status – The Hazard Review Board completed their review of the repair package for Exhaust Fan 5 on April 6, 2012. Performance of weld repair activities is scheduled to begin the week of April 9, 2012. Upon successful completion of the welding and balancing of Exhaust Fan 5, the installation of switches to shut down the fans on high vibration will begin. The exhaust ventilation system Enhanced Maintenance Program procedures have been completed and will be implemented when Exhaust Fan 5 is returned to service. Approval of the Justification for Continued Operation was received March 27, 2012.

RISK MANAGEMENT STATUS

Unassigned Risk
Risk Passed
New Risk
Change

Working - No Concerns
Working - Concern
Working - Critical

Increased Confidence
No Change
Decreased Confidence

Risk Title	Risk Strategy/Handling	Assessment		Comments
		Month	Trend	
RL-011/WBS 011				
PFP-003: More Extensive Cleanout/Decon Required	Develop and implement a detailed process facility characterization plan. Determine and obtain approval for ready-for-demolition criteria (contamination removal/cleanup endpoints prior to building demolition). Early characterization provides an opportunity to avoid project schedule impact; however, cost impacts remain.	Working - Concern	No Change	The duct level of the 234-5Z building will remain on Airborne Radioactivity Area status pending further evaluation and characterization, which is impacting on staffing requirements for work in this area, and on schedule performance for removal of highly contaminated piping and ductwork. Development of a detailed PFP-wide characterization plan is continuing, and two Radiological Control Technicians were added to support implementation of the plan later in the year. Regular meetings have been initiated to further define ready-for-demolition criteria for the Plutonium Reclamation Facility (236-Z), the most challenging of the facilities.
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.	Working - No Concerns	Increased Confidence	The PRF canyon crane continued to operate as expected in March, and pencil tank disposition continued at an accelerated pace, regaining previously lost schedule. Work on D&D of the seven galleries and column gloveboxes, which are linked directly to the canyon, is proceeding as planned. Reporting on this risk will be discontinued unless and until additional issues are experienced.
PFP-009: Problems with Aging Building Systems/Components Impacts D&D	Perform critical system reliability assessments for all of the PFP safety and essential systems; procure critical spares; maintain existing redundancies; repair or replace equipment as failures occur and complete planned facility modifications.	Working - Concern	Increased Confidence	Preparations continued for repair of minor cracks observed on the blades of two of PFP's main exhaust fans. Planning is also underway to increase exhaust flow through the ventilation system to reduce system stresses created by insufficient flow. Minor but recurring problems continue to be experienced with air monitoring equipment and the PRF and 234-5Z air sample vacuum systems.
PFP-008: Unexpected High Concentration TRU Material Holdup Discovered	Utilize supplemental NDA and other characterization techniques to identify areas of concern early in the project. Discuss potential response actions and administrative controls with Safeguards and Security, and proceduralize them as needed to guide the project in responding in the event unexpected material is identified.	Working - Concern	Increased Confidence	No additional locations with unexpected levels of holdup were identified in March, and reporting on this risk will be discontinued unless and until additional issues arise.
PFP-042, Increased Attrition Impacts Availability of Qualified Resources PRC-021A, Workforce restructuring caused by funding changes	Risks have historically been accepted without mitigation.	Working - Concern	Decreased Confidence	All of the field work teams impacted by the September 2011 workforce restructuring and subsequent "bump and roll" are staffed with qualified replacement personnel and working. However, some impacts were also experienced in March due to an unanticipated mid-year ramp-up in Tank Farm operations. Competition for personnel is increasing from the Office of River Protection, Waste Treatment Project, which is aggressively recruiting for staff experienced in nuclear safety analysis and a few other disciplines.

PFP-006: Overall D4 Schedule Impacts from Interferences Between Subprojects PFP-061, Experienced Demolition Crews/Equipment Not Available	Ensure that activity schedules for all subprojects are integrated and are detailed enough to identify and avoid possible conflicts, and maintain coordination between closely related efforts that could overlap or that use the same resources.			Most of the historical interferences between the various subprojects have been resolved. An expansion of the demolition safety boundary for removal of the vault complex buildings heavily impacted on progress in D&D of the 234-5Z backside rooms, and had more limited impacts on the Balance of 234-5Z D&D work. By month's end this work was nearly complete and work to reduce the boundaries was in progress. With no other near term demolition work planned, reporting on PFP-061 will be discontinued unless additional issues are anticipated. Staffing forecasts by craft/discipline for other near-term work continue to be analyzed to better anticipate and avoid future resource conflicts.
PFP-064 OPP: Reduced Size Reduction Required Consistent With SLB2 Packaging	Implementation of the use of SLB-2s has been identified as a site wide initiative by CHPRC and RL. A specific plan of action was developed and is being executed to support this opportunity.			This opportunity has now been fully realized and incorporated in the project baseline. Reporting will be discontinued next month.
PRC-014, Site-Wide Occurrence	None			Approval has been received and asbestos removal work was restarted at PFP in March. Reporting on this risk will be discontinued next month.
PRC-020, Weather Delays	None			High winds impacted vault complex demolition work for an unusual number of days during March, extending completion of this work into April. Work packages were modified to support continuation of lower risk work during higher wind speeds, but average wind speeds were the second highest on record since 1945 and continued to impact this work through the end of the month.
PRC-029: Unforeseen Facility Conditions	None			Two issues identified during January are fully resolved and no new occurrences were experienced in February or March. Reporting on this risk will be discontinued unless additional issues arise in April.

PROJECT BASELINE PERFORMANCE
Current Month
($M)

WBS 011/RL-0011 Nuclear Matl Stab & Disp PFP	Budgeted Cost of Work Scheduled (BCWS)	Budgeted Cost of Work Performed (BCWP)	Actual Cost of Work Performed (ACWP)	Schedule Variance ($)	Schedule Variance (%)	Cost Variance ($)	Cost Variance (%)
ARRA	2.3	2.0	1.7	(0.2)	-10.5	0.3	15.2
Base	8.4	10.0	9.8	1.6	18.4	0.1	1.5
Total	**10.7**	**12.0**	**11.6**	**1.3**	**12.3**	**0.5**	**3.8**

Numbers are rounded to the nearest $0.1M

ARRA

CM Schedule Variance: (-$0.2M/-10.5%)

The schedule variance is within reporting thresholds.

CM Cost Variance: (+$0.3M/+15.2%)

The cost variance is within reporting thresholds.

Base

CM Schedule Variance: (+$1.6M/+18.4%)

The positive current period schedule variance is primarily due to a single point adjustment associated with BCR-011-12-002R0, *PFP PMB R3 Update per RCR Response*. Continued efficiencies in the size

reduction of the PRF pencil tank assemblies, including experience gained and the use of overtime to mitigate the delay in the transfer of the field work team for Q shift, also contribute to the positive variance.

CM Cost Variance: (+$0.1M/+1.5%)

The cost variance is within reporting thresholds.

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	285.0	281.3	289.1	(3.7)	-1.3	(7.8)	-2.8	290.9	296.7	(5.8)
Base	190.6	191.3	0.7	(0.8)	0.5	(1..8)	-0.9	598.2	605.1	(6.9)
Total	**475.6**	**472.6**	**482.1**	**(3.0)**	**-0.6**	**(9.6)**	**-2.0**	**889.1**	**901.8**	**(12.7)**

Numbers are rounded to the nearest $0.1M

ARRA

CTD Schedule Performance: (-$3.7M/-1.3%)

The schedule variance is within reporting thresholds.

CTD Cost Performance: (-$7.8M/-2.8%)

The cost variance is within reporting thresholds.

Base

CTD Schedule Variance (+$0.7M/+0.4%)

The schedule variance is within reporting thresholds.

CTD Cost Variance (-$1.8M/-0.9%)

The cost variance is within reporting thresholds.

Variance at Completion (-$12.7M/-1.4%)

The variance at completion is within reporting threshold.

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

Estimate at Completion (EAC)

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

The EAC changes from February to March, for both ARRA and Base, are within reporting thresholds.

FUNDS vs. SPEND FORECAST ($M)

WBS 011/RL-0011 Nuclear Matl Stab & Disp PFP	FY2012 Projected Funding	FY2012 Spending Forecast	FY2012 Spend Variance
ARRA	33.4	33.4	0.0
Base	99.4	95.3	4.1
RL-0011 Total	**132.8**	**128.7**	**4.1**

Numbers are rounded to the nearest $0.1M

Funds/Variance Analysis

Funding includes FY2011 carryover and FY2012 new Budget Authority.

Critical Path Schedule

Critical Path analysis can be provided upon request.

Baseline Change Requests

BCR-R11-12-002R0 – *PFP PMB Rev 3 Update Per RCR Response*

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.