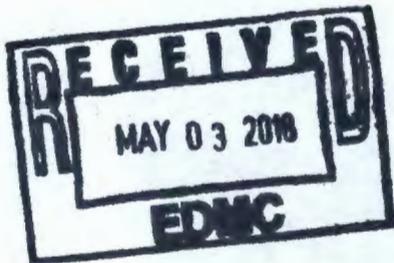


Richland Operations Office Briefing for EPA and Ecology

FY 2017 Year-End
FY 2018 Appropriations



Joe Franco and Mark Coronado, Richland Operations Office
April 17, 2018

1248893
[0065847H]

1248892 & 1248894

80

Hanford Cleanup Overview

Three components

- Tank Waste
- Central Plateau
- River Corridor



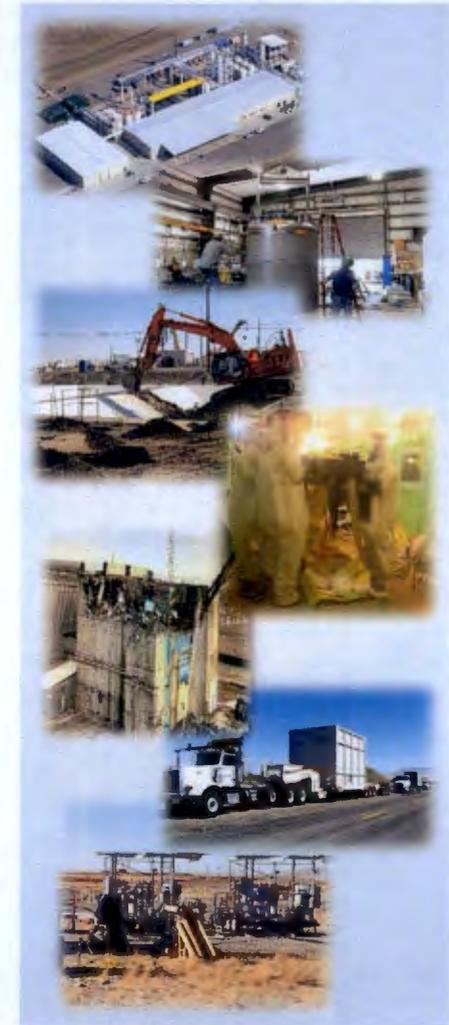
Cleanup work

- Retrieve waste from underground tanks
- Treat waste for safe disposal
- Treat contaminated groundwater
- Demolish facilities
- Remove buried waste and contaminated soil from near Columbia River for safe disposal away from river



Major Cleanup Activities

- Maintain safe, secure, and compliant activities, facilities and operations
- Continue stabilization and demolition of Plutonium Finishing Plant (PFP)
- Continue groundwater pump-and-treat operations and implement additional groundwater remedies
- Continue River Corridor cleanup
- Continue design for transferring cesium and strontium (Cs/Sr) capsules to dry storage
- Support repackaging of large transuranic containers and waste drums
- Continue to maintain and upgrade Hanford Site infrastructure



Richland Prime Contracts

Plateau Remediation Contract PRC



Facility and waste site cleanup, groundwater remediation, waste management.

Awarded in 2008 for five years, with five option years.

Total Contract Value: \$5.8 billion

Cost-plus award-fee contract

Mission Support Contract MSC



Infrastructure and site services to support the cleanup mission.

Awarded in 2009 for five years with two- and three-year option years.

Total Contract Value: \$3.7 billion

Cost-plus award-fee contract

HPM Corporation provides occupational medical services to DOE and Hanford contractors.

Awarded in 2012 for two years with four one-year option periods, a hybrid contract that includes firm-fixed price with award fee, cost reimbursement, and Indefinite Delivery Indefinite Quantity components.

Total Contract Value: \$98.8 million

RL Profile by Congressional Control Point

(\$ in Thousands)

PBS	PBS Title	FY 2017 Omnibus	FY 2018 Omnibus	FY 2019 President's Budget
RL-0011	Nuclear Material Stabilization and Disposition - PFP	143,404	26,067	
RL-0012	Spent Nuclear Fuel Stabilization and Disposition	24,645	42,610	8,000
RL-0013C	Solid Waste Stabilization and Disposition - 200 Area	91,820	145,005	151,000
RL-0030	Soil and Water Remediation - Groundwater/Vadose Zone	127,476	132,363	131,000
RL-0201	Hanford Site Wide Services*	272,473	316,833	272,473
Central Plateau Remediation		659,818	662,879	562,473
RL-0040	Nuclear Facility D&D - Remainder of Hanford	31,400	68,042	23,760
RL-0041	Nuclear Facility D&D - River Corridor Closure Project**	112,355	115,650	65,817
River Corridor and Other Cleanup Operations		143,755	183,692	89,577
RL-0012	15-D-401 Containerized Sludge Removal Annex	11,486		
RL-0013C	18-D-404 WESF Modifications and Capsule Storage		6,500	1,000
RL-0020	Safeguards and Security	74,176	81,990	86,686
RL-0042	Nuclear Facility D&D - Fast Flux Test Facility Project	2,240	2,240	2,240
RL-0100	Richland Community and Regulatory Support	24,701	10,121	5,121
Total	Richland Field Office Funding Summary	916,176	947,422	747,097

WESF = Waste Encapsulation Storage Facility

* These costs were distributed among several PBSs before FY 2017

** B Reactor (RL-0041) costs are transferring to RL-0201 in FY 2018



Safety and Health



- Plutonium Uranium Extraction (PUREX) Plant Tunnel 1 grouting completed; plans underway for stabilizing Tunnel 2
- Continuing to stabilize PFP after spread of contamination
- Working to resume demolition activities after implementing corrective actions to prevent spread of contamination
- Voluntary Protection Program: Star status for all contractors
- Enhanced process for sitewide safety standard development and implementation

Site-wide Services

Prior to FY 2017, site-wide services were prorated across the Project Baseline Summaries (PBS). Starting in FY 2017, RL funded these services entirely from a dedicated PBS (RL-0201)



Provide site-wide services for day-to-day operations, to include general utilities and fire department

Infrastructure



Water Systems

- Over 100 miles of buried pipe
- Over 900 million gallons of water used annually

Electrical Utilities

- 200+ miles of transmission and distribution lines
- 6,000+ power poles

Emergency Services and Immobilization Systems

- Radio Fire Alarm Reporting is essential to safety and security of facilities and employee welfare

Information Technology

- Legacy applications to be updated
- Cybersecurity improvements

Roads

- Over 7,600 passenger vehicles (daily average)
- 350+ lane miles of roads
- 900 trips by heavy trucks (daily average)

RL Budget Overview

PROJECT WORK – RIVER CORRIDOR



U.S. DEPARTMENT OF
ENERGY

River Corridor – PBS RL-0012

Accomplishments in FY 2017

K West Reactor Basin Closure, PBS RL-0012

- Continued to operate and maintain K West Reactor Basin, a Category 2 nuclear facility, and associated structures in a safe and compliant manner, and support required surveillance and maintenance activities
- Completed T Plant modifications for receipt and storage of sludge



Workers moving empty Sludge Transport and Storage Container into T Plant tunnel

Sludge Removal Project Line Item, PBS RL-0012

- Completed 105 K West Basin sludge Transfer Equipment Installation
- Initiated K West Reactor Basin pre-operational acceptance testing for Engineered Container Retrieval and Transfer System



Worker connecting sludge transfer hoses in the Sludge Transfer Annex in the 100 K Reactors Area

River Corridor – PBS RL-0012

Planned Accomplishments in FY 2018

K West Reactor Basin Closure, PBS RL-0012

- Continue to operate and maintain K West Reactor Basin, a Category 2 nuclear facility, and associated structures in a safe and compliant manner and support required surveillance and maintenance activities
- Transfer 50 percent of sludge from K West Reactor Basin to T Plant



One of six Engineered Containers used to store sludge in the K-West Reactor Fuel Storage Basin

Sludge Removal Project Line Item, PBS RL-0012

- Complete K West Reactor Basin pre-operational acceptance testing for Engineered Container Retrieval and Transfer System
- Complete Operational Readiness Review and start sludge removal operations



Operators perform procedure validations in preparation for the Operational Readiness Review

River Corridor – PBS RL-0041

Accomplishments in FY 2017

Nuclear Facility D&D – River Corridor Closure Project, PBS RL-0041

- Completed TPA Milestone M-094-00 (Complete Demolition of all Surplus Facilities in the 300 Area)
- Completed excavation and loadout of 618-10 Burial Ground
- Remediated adjacent waste sites (316-4, 600-63)
- Completed final design for remediation of waste site under 324 Building (300-296) and proceeded with procurement of mock-up equipment
- Completed construction of mock-up facility for remediation of 300-296 waste site
- Disposed of 277,385 tons of waste in Environmental Restoration Disposal Facility (ERDF)
- Completed cleanout of 324 Building airlock



618-10 Burial Ground



316-4 Waste Site



Workers removing waste container from 324 Building airlock

River Corridor – PBS RL-0041

Planned Accomplishments in FY 2018

Nuclear Facility D&D – River Corridor Closure Project, PBS RL-0041

- Complete TPA Milestone M-016-00B (complete all 300 Area remedial actions, including the 618-10 burial ground but not the 618-11 burial ground, 300-296 waste site, and sites associated with retained 300 Area facilities and utility corridors)
- Complete installation of first remote excavation arm in 324 Building
- Complete debris removal and cleanout from 324 Building C- and D-Cells
- Continue efforts to characterize the debris in K West Basin in preparation for Basin deactivation after sludge removal



Prototype upper and lower remote excavation arms



C-Cell cleanout underway in 324 Building

RL Budget Overview

PROJECT WORK – CENTRAL PLATEAU



U.S. DEPARTMENT OF
ENERGY

Plutonium Finishing Plant – PBS RL-0011

Accomplishments in FY 2017

Plutonium Finishing Plant, PBS RL-0011

- Completed all deactivation and demolition preparation activities
- Dispositioned all but one glovebox from the facilities
- Demolished three of four major facilities: Americium Recovery Facility (aka McClusky Room, or 242-Z), ventilation stack and filter house (291-Z), and Plutonium Reclamation Facility (236-Z)
- Completed demolition of all ancillary facilities
- Made significant progress on demolition of main processing facility (234-5Z)



Final preparations of Americium Recovery Facility (aka McClusky Room, or 242-Z)

Demolition of the ventilation stack



Demolition of Plutonium Reclamation Facility (236-Z)

GB 227S, last glovebox to be removed from main processing facility (234-5Z)



Plutonium Finishing Plant – PBS RL-0011

Planned Accomplishments in FY 2018

Plutonium Finishing Plant, PBS RL-0011

- Complete stabilization at PFP demolition zone and modify demolition approach to prevent spread of contamination
- Resume demolition of Plutonium Reclamation facility wall stubs and debris loadout
- Resume demolition of main processing facility (234-5Z)
- Sample/characterize building slabs in preparation for removal
- Transition PFP site to surveillance and maintenance mode



PFP prior to the start of demolition

Demolition of Plutonium Reclamation Facility (236-Z)



Remaining main processing facility (234-5Z) structure to be demolished

Demolition complete footprint



Solid and Liquid Waste Management – PBS RL-0013

Accomplishments in FY 2017

Solid Waste Stabilization and Disposition, PBS RL-0013

- Provided operations to support safe and compliant storage of special nuclear material and Cs/Sr capsules
- Completed grouting cells at Waste Encapsulation Storage Facility (WESF)
- Completed WESF ventilation upgrade
- Operated waste treatment and compliant storage facilities (Central Waste Complex, solid waste operations, mixed waste disposal trenches, Integrated Disposal Facility, T Plant, ERDF, and WESF)
- Completed conceptual design for Cs/Sr capsules dry storage project
- Continued to repackage drums of radioactive/hazardous waste and large boxes at Perma-Fix Northwest (completed 280 cubic meters for TPA Milestone M-091-47C)



Environmental Restoration Disposal Facility (ERDF)



T Plant worker preparing the facility to receive radioactive sludge from K West Basin

Solid and Liquid Waste Management – PBS RL-0013

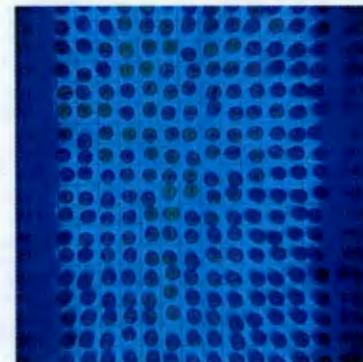
Planned Accomplishments in FY 2018

Solid Waste Stabilization and Disposition, PBS RL-0013

- Provide operations to support safe and compliant storage of special nuclear material and Cs/Sr capsules
- Operate waste treatment and compliant storage facilities (Central Waste Complex, solid waste operations, mixed waste disposal trenches, Integrated Disposal Facility, T Plant, ERDF, and WESF)
- Continue to repackage drums of radioactive/hazardous waste and large boxes at Perma-Fix Northwest (280 cubic meters for TPA Milestone M-091-47D)
- Continue design work for transferring Cs/Sr capsules to dry storage
- Prepare target milestones for transuranic waste retrieval for TPA Milestone M-091-52



Waste Encapsulation Storage Facility (WESF)



Cesium/strontium capsules in storage basin in Waste Encapsulation Storage Facility (WESF)

Groundwater – PBS RL-0030

Accomplishments in FY 2017

Soil and Water Remediation – Groundwater, PBS RL-0030

- Continued integration of site-wide groundwater and vadose zone cleanup activities; groundwater contamination monitoring; and operations, maintenance and modifications of existing remediation systems
- Continued operation of River Corridor and Central Plateau pump-and-treat facilities with treatment of over 2.3 billion gallons of contaminated groundwater (removing uranium, carbon tetrachloride, nitrates, hexavalent chromium and technetium-99)
- Continued to meet well drilling commitments in TPA Milestone M-024



200 West Pump and Treat facility

Groundwater – PBS RL-0030

Accomplishments in FY 2017

Soil and Water Remediation – Groundwater, PBS RL-0030

- Continued progress towards obtaining remediation Records of Decision for River Corridor and Central Plateau
 - Submitted Remedial Investigation / Feasibility Study and Proposed Plan, Draft A, for soil and groundwater in the B/C Reactor Area
 - Completed well drilling in southern portion of 200 West Area (200-UP-1) in support of chromium plume remedial design investigation
- Reduced groundwater plume in the 100 D and H Reactor Areas (100-HR-3) by 67 percent
- Completed 5-year CERCLA Review and Report



Well drilling rig

Groundwater – PBS RL-0030

Planned Accomplishments in FY 2018

Soil and Water Remediation – Groundwater, PBS RL-0030

- Continue integration of site-wide groundwater and vadose zone cleanup activities; groundwater contamination monitoring; and operations, maintenance and modifications of existing remediation systems
- Continue operation of River Corridor and Central Plateau pump-and-treat facilities for treatment of at least 2.2 billion gallons of contaminated groundwater (removing uranium, carbon tetrachloride, nitrates, hexavalent chromium and technetium-99)
- Continue to meet well drilling commitments in TPA Milestone M-024



*Pump-and-treat
facilities in
100 Area, near
Columbia River*



Groundwater – PBS RL-0030

Planned Accomplishments in FY 2018

Soil and Water Remediation – Groundwater, PBS RL-0030

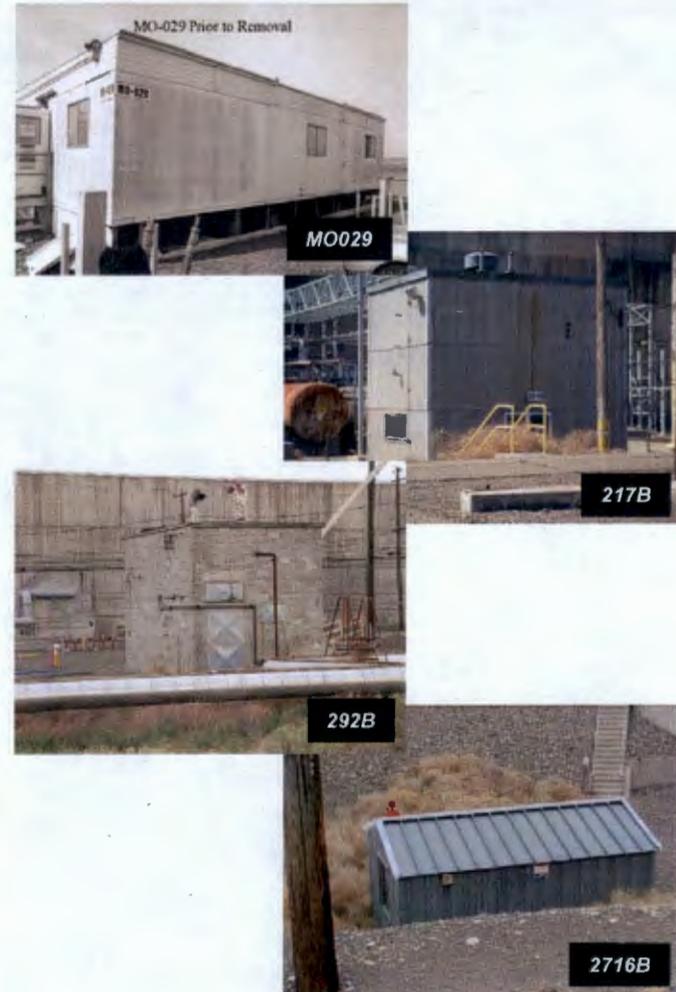
- Continue progress towards obtaining remediation Records of Decision for River Corridor and Central Plateau
 - Submit Remedial Investigation / Feasibility Study Report and Proposed Plan Rev 0 for groundwater in the B and C Reactor Areas (100-BC-5)
 - Obtain the Record of Decision for 100-D/H Areas
 - Complete characterization activities associated with Deep Vadose Zone
 - Continue investigation of southeast chromium plume in southern 200 West Area (200-UP-1); install new wells and evaluate groundwater monitoring data
- Continue Record of Decision implementation activities for final stage of uranium sequestration in 300 Area
- Reduce groundwater uranium plume in southern portion of 200 East Area (200-BP-5) by 30 percent

Deactivation and Demolition – PBS RL-0040

Accomplishments in FY 2017

Nuclear Facility D&D for the Remainder of Hanford, PBS RL-0040

- Continued surveillance and maintenance activities to ensure safety for inactive waste sites and surplus facilities on Central Plateau
- Initiated stabilization of PUREX Tunnel 1 with engineered grout
- Completed demolition of four B Plant ancillary buildings
- Continued canyon facility risk mitigation activities
 - Completed roof replacement at Reduction-Oxidation Plant (REDOX)
 - Initiated cleanout of REDOX North Sample Gallery and REDOX silo
 - Continued development of required CERCLA documentation



Completed demolition of four B Plant structures

Deactivation and Demolition – PBS RL-0040

Planned Accomplishments in FY 2018

Nuclear Facility D&D for the Remainder of Hanford, PBS RL-0040

Continue surveillance and maintenance activities to ensure safety for inactive waste sites and surplus facilities on Central Plateau

- Complete stabilization of PUREX Tunnel 1 (completed Nov. 2017)
- Initiate stabilization of PUREX Tunnel 2
- Replace PUREX stack monitoring system (completed Feb. 2018)

Fast Flux Test Facility – PBS RL-0042

Accomplishments in FY 2017

Nuclear Facility D&D Fast Flux Test Facility, PBS RL-0042

Supported long-term safe and compliant surveillance and maintenance for Fast Flux Test Facility and support facilities

- Support is required until residual and bulk sodium is dispositioned and facility deactivation and decommissioning is resumed

Planned Accomplishments in FY 2018

Nuclear Facility D&D Fast Flux Test Facility, PBS RL-0042

Continue to support long-term safe and compliant surveillance and maintenance for Fast Flux Test Facility and support facilities

- Support is required until residual and bulk sodium is dispositioned and facility deactivation and decommissioning is resumed



Fast Flux Test Facility in Hanford's 400 Area

Safeguards and Security – PBS RL-0020

Accomplishments in FY 2017

Safeguards and Security, PBS RL-0020

- Completed upgrading Hanford's network cybersecurity
- Maintained safeguards and security (SAS) programs at the Hanford Site, including protection of Category 1 special nuclear material
- Maintained appropriate and compliant SAS programs, including protection program management, emergency response, physical security, information protection, protective force, personnel security, cybersecurity and nuclear material control and accountability for RL and ORP

Planned Accomplishments in FY 2018

Safeguards and Security, PBS RL-0020

- Maintain SAS programs at the Hanford Site, including protection of Category 1 special nuclear material
- Maintain appropriate and compliant SAS programs, including protection program management, emergency response, physical security, information protection, protective force, personnel security, cyber security and nuclear material control and accountability for RL and ORP
- Continue to reduce programmatic risk by maintaining/replacing protected area security systems surveillance equipment; and repairing/replacing critical operations, communications, and training infrastructure and equipment

Hanford Site Support – PBS RL-0100

Accomplishments in FY 2017 and Planned Accomplishments in FY 2018

Community and Regulatory Support (PBS RL-0100)

- Support Washington and Oregon emergency preparedness programs, Washington State Department of Health oversight, and other activities related to Hanford cleanup
- Support Washington State Department of Ecology RCRA Mixed Waste Program; Washington State Department of Health's air emissions monitoring; payment in lieu of taxes for Benton, Franklin and Grant Counties; Hanford Advisory Board; and miscellaneous permits and fees

Site-wide Services – PBS RL-0201

FY 2017 and FY 2018 Planned Accomplishments

- Provide site-wide services for day-to-day operations and cleanup support
- Fund RL-direct services, including site integration, tribal commitments and emergency preparedness
- Support infrastructure upgrades and site maintenance



River Corridor Remaining Work Scope

