



THE HANFORD SITE

Hanford Site Planned Activities for Fiscal Year 2020

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EDMC

- Direct-Feed Low-Activity Waste (DFLAW) capability
- Tank closure
- AX Tank Farm retrieval
- Continuity of operations / landlord
- Aging tank maintenance
- Aging facility risk mitigation
- Critical infrastructure
- Groundwater pump-and-treat actions
- Cesium/strontium dry storage mortgage reduction



A cocooned reactor near the Columbia River

(\$ in Thousands)

PBS	PBS Title	FY 2020 President's Request	FY 2019 Carryover	FY 2020 Enacted
ORP-0014	Radioactive Liquid Tank Waste Stabilization and Disposition	677,460	114,401	775,000
ORP-0014	15-D-409, Low-Activity Waste Pretreatment System	0	131,823	0
ORP-0014A	LLW Offsite Disposal	10,000	0	10,000
Tank Farms		687,460	246,224	785,000
ORP-0060	LBL/Direct-Feed LAW	640,000	145,225	776,000
ORP-0060	High-Level Waste Facility	30,000	63,595	25,000
ORP-0060	Pretreatment Facility	20,000	53,511	15,000
Waste Treatment and Immobilization Plant (WTP)		690,000	262,331	816,000
ORP-0070	WTP Commissioning	15,000	11,629	15,000
Total	Office of River Protection Funding Summary	1,392,460	520,184	1,616,000

FY = fiscal year
 PBS = project baseline summary
 LAW = low-activity waste

LBL = Low-Activity Waste (LAW) Facility, Balance of Facilities (BOF), and Analytical Laboratory (LAB)
 LLW = low-level waste

(\$ in Thousands)

PBS	PBS Title	FY 2020 President's Request	FY 2020 Enacted
ORP-0014	Radioactive Liquid Tank Waste Stabilization and Disposition	\$142,804	142,804
ORP-0014	TSCR Operations	4,029	4,029
ORP-0060	WTP – LBL DFLAW Completion	640,000	776,000
ORP-0070	WTP Operations and Commissioning - DFLAW	15,000	15,000
RL-0201	Critical Infrastructure to support DFLAW	0	43,100
RL-0013C	IDF DSA/Permitting/Upgrades (DFLAW)	12,898	23,024
Total	ORP and RL DFLAW Budget Requirements	841,731	1,003,957

- DSA = documented safety analysis
- FY = fiscal year
- IDF = Integrated Disposal Facility
- LBL = LAW Facility, Balance of Facilities (BOF), and Analytical Laboratory (LAB)
- TSCR = tank-side cesium removal

(\$ in Thousands)

PBS	PBS Title	FY 2020 President's Request	FY 2019 Carryover	FY 2020 Enacted
RL-0011	Nuclear Material Stabilization and Disposition – PFP	0	29,629	0
RL-0012	Spent Nuclear Fuel Stabilization and Disposition	0	654	0
RL-0013C	Solid Waste Stabilization and Disposition – 200 Area/18-D-404	110,798	22,518	176,855
RL-0030	Soil and Water Remediation – Groundwater / Vadose Zone	106,600	8,670	138,995
RL-0201	Hanford Sitewide Services	255,551	72,779	338,950
Central Plateau Remediation		472,949	134,250	654,800
RL-0040	Nuclear Facility D&D – Reminder of Hanford	34,750	19,874	102,427
RL-0041	Nuclear Facility D&D – River Corridor Closure Project	105,000	21,444	133,675
River Corridor and Other Cleanup Operations		139,750	41,318	236,102
RL-0013C	18-D-404 WESF Modifications and Capsule Storage	11,000	3,294	11,000
RL-0020	Safeguards and Security	86,778	10,995	86,778
RL-0042	Nuclear Facility D&D – Fast Flux Test Facility	2,500	2,287	2,500
RL-0100	Richland Community and Regulatory Support	5,121	1,191	10,121
Total	Richland Operations Office Funding Summary	718,098	193,335	1,001,301

D&D = deactivation and decommissioning
 FY = fiscal year
 PBS = project baseline summary

PFP = Plutonium Finishing Plant
 WESF = Waste Encapsulation and Storage Facility

FY 2020 Planned Activities

- LAW Facility
 - Complete all equipment deliveries (Completed January 2020)
 - Complete construction
 - Complete all turnovers to startup
- BOF / LAB / Effluent Management Facility (EMF)
 - Complete EMF heating, air-conditioning, and ventilation systems
 - Complete LAB and BOF system handovers to plant management for operation
 - Complete LAB readiness
- High-Level Waste Facility
 - Support procurement suspension/termination activities
 - Continue preservation maintenance activities
 - Complete 60 percent design reviews for six systems
- Pretreatment Facility
 - Support procurement suspension/termination activities
 - Support facility preservation activities



WTP Steam Plant Supplying Steam to LAB and
LAW Facility Testing

FY 2020 Planned Activities

- Continue procurement of long-lead consumables, spare parts, and facility transition planning
- Begin modification of the WSU Atkins Engineering Laboratory to serve as the melter assembly and storage facility
- Award Melter 4 fabrication contract
- Procure WTP high-efficiency particulate air filters

FY 2020 Planned Activities

- Complete fabrication of process enclosure and ancillary enclosure (completed December 2019)
- Complete fabrication of the Tank-Side Cesium Removal (TSCR) Pretreatment System (completed December 2019)
- Complete fabrication of the TSCR ion exchange columns
- Obtain CD-2/3 approval
- Obtain temporary authorizations for construction, waste transfer lines and ion exchange columns
- Receive the TSCR RCRA permit
- Complete construction of the spent-ion-exchange-column storage pad
- Continue constructing transfer lines from tank farms to WTP
- Continue AP Tank Farm upgrades to feed TSCR and store processed low-activity waste

FY 2020 Planned Activities

- Design, initiate Basin 41 installation at the Liquid Effluent Retention Facility
- Design additional office space at the 222-S Laboratory to support DFLAW personnel
- Initiate upgrade to the four motor control centers to support increased electrical requirements at the Effluent Treatment Facility (ETF)
- Design treatment facility load-in area expansion to support increased facility operation throughput requirements at ETF
- Design replacement slurry waste transfer lines at the 242-A Evaporator
- Design/fabricate new processing unit to allow treatment of acetonitrile
- Complete fabrication and delivery of immobilized low-activity waste transporter equipment, which includes 3 trailers and 23 pallets
- Complete Tank AX-102 retrieval and initiate Tank AX-104 retrieval

(right)
Extended-
Reach
Sluicer
System
Installation in
Tank AX-104



Tank AX-102 Camera Tank Mosaic Showing
Post-Retrieval Condition

FY 2020 Planned Activities

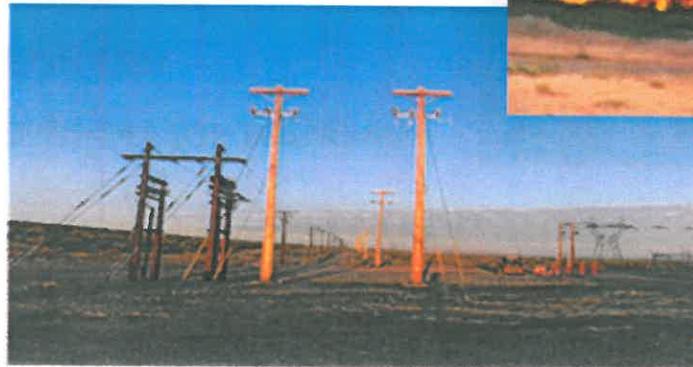
- Update and submit for approval the regulatory documentation for engineering-scale test phase
- Update the Tank Farms Documented Safety Analysis
- Develop commissioning and readiness documents and operating procedures
- Complete design and fabrication of equipment removal tools
- Installation of engineering-scale equipment is an opportunity for project acceleration for FY2020

FY 2020 Planned Activities

- Prepare infrastructure and services to support DFLAW and 24/7 operations
 - Start Water Treatment Facility construction
 - Continue 230 kV transmission system repairs
- Provide site-wide services for day-to-day operations, to include general utilities and fire department
- Support minimum safe operations, essential Site services
- Enhance traffic management program



Wildland fire operations Wild Land Fire Operations



Priority Transmission & Distribution System Wood Power Pole Test and Replace

Nuclear Material Stabilization and Disposition – Plutonium Finishing Plant – RL-0011

FY 2020 Planned Activities

- Characterize slabs in preparation for removal
- Complete demolition of Plutonium Reclamation Facility
- Complete slab on grade
- Transition site to surveillance and maintenance mode
- All work funded with carryover

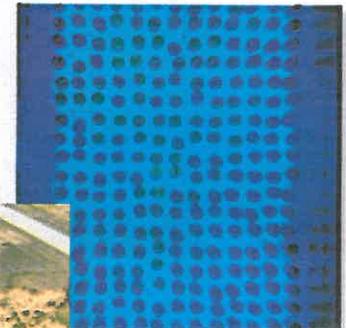


Footprint once demolition is complete

FY 2020 Planned Activities

- Continue activities to support startup of the Integrated Disposal Facility in support of DFLAW operations
- Continue waste management and waste disposal operations
- Continue activities to support capsule movement from Waste Encapsulation and Storage Facility (WESF) to dry storage
- Continue repackaging of large box TRU waste at Perma-Fix Northwest
- Complete receipt at T Plant of up to four shipments of sand and garnet filter media from K Basins

WESF Canyon before (right) and after (below) cleanup and painting



Cesium/strontium capsules in WESF storage basin (right)

Capsule storage area (below)

FY 2020 Planned Activities

- Treat 2.2 billion gallons of contaminated groundwater
- Complete system layup for suspension of nitrate biological treatment
- Increase treatment capacity for carbon tetrachloride and technetium-99
- Complete K West soil flushing and submit results
- Complete the sampling and reporting for the 300 Area uranium sequestration remedial action
- Conduct groundwater monitoring for 22 Dangerous Waste Management Units



Pump-and-treat facility on the Central Plateau

FY 2020 Planned Activities

- Conduct groundwater monitoring for Comprehensive Environmental Response, Compensation, and Liability Act operable units and submit annual report to regulators
- Install wells to meet M-24
- Complete the *100-OL-1 Operable Unit Feasibility Study Report, Draft A*
- Continue Engineering Evaluation Reports, Groundwater Monitoring Plans, and Closure Plans
- Initiate the PUREX RI/FS Work Plan

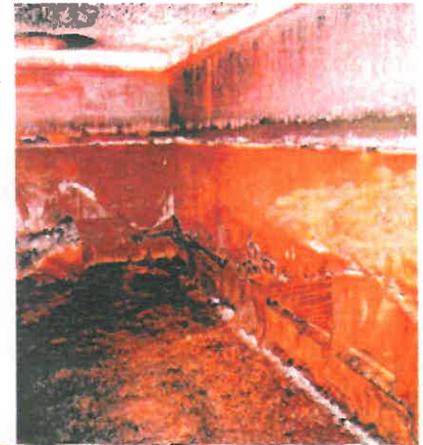


Pump-and-treat facilities in 100 Area near Columbia River

FY 2020 Planned Activities

- Perform stabilization of below grade structures 241-Z-361, 216-Z-2 and 216-Z-9 (currently planning)
- Initiate demolition prep activities for Tier 1 facilities 224B and 224T buildings
- Complete demolition preparation of 276C and 215C
- Continue canyon demolition preparation/risk mitigations activities at the PUREX and REDOX complexes
- Perform preparations for removal of PFP demolition support buildings

241-Z-361
Tank
Interior



216-Z-9
Crib
Interior

FY 2020 Planned Activities

- Perform 324 Building hot cell cleanout and continue structural modifications to prepare for 300-296 waste site remediation
- 105 K West Basin
 - Initiate basin deactivation
 - Complete removal of garnet filter media and transport to T Plant
 - Continue basin debris characterization and removal in preparation for basin dewatering
- Complete design and award contract for construction of K East Reactor Safe, Secure Enclosure
- 100 K Area Remediation and D4
 - Continue remediation of 100 K Area waste sites
 - Complete removal of the 166 K East oil storage vault
 - Complete 165 K East power control building demolition preparation activities



Remote excavator arm in airlock at 324 Building (above)



Debris in the K West Basin (left)

FY 2020 Planned Activities

- Support long-term, safe and compliant surveillance and maintenance for Fast Flux Test Facility and support facilities, which also includes residual and stored bulk sodium
- Perform additional waste management activities on the 19 sodium drums stored in the 400 Area Interim Storage Area
- Evaluate actions to extend the life expectancy of the water system by 30 years
- Prepare Engineering Evaluation / Cost Analysis



Fast Flux Test Facility

FY 2020 Planned Activities

- Support Hanford Advisory Board and Washington and Oregon states' emergency preparedness and environmental oversight
- Support payment in lieu of taxes to Benton, Franklin, and Grant Counties

FY 2020 Planned Activities

- Provide Safeguards and Security for the Hanford Site
 - Protection of Category I Special Nuclear Material
 - Emergency Response
 - Physical Security
 - Personnel Security
 - Information Protection / Cybersecurity
 - Protective Force
 - Nuclear Material Control and Accountability.
- Provide for upgrade and replacement of deteriorated or obsolete physical security, training and qualification systems and facilities



Hanford Patrol K-9 Unit

PBS	Milestone Number	Title	Due Date	Status
ORP-0014	M-045-92AC	Submit to Ecology for Approval a Maintenance and Performance Monitoring Plan for Interim Barriers	10/31/2019	Completed
ORP-0014	M-045-92V	Complete Construction of Barriers 1 (North) and 2 (South) and Expansion Barrier in 241-SX Farm	10/31/2019	Completed
ORP-0014	M-045-92W	Submit to Ecology Design for Barrier 3 in 241-TX Farm	10/31/2019	Completed
ORP-0014	M-045-92X	Barrier 3 in 241-TX Farm Design Approved by Ecology	1/31/2020	Completed
ORP-0014	M-045-93	Submit Report for Description, Analysis and Technology for Removing Drainable Liquids from SSTs	6/30/2020	On Schedule
ORP-0014	M-062-54A	Submit Permit Application for AP Tank Farm Mods and Operation Necessary to Support TSCR	7/15/2020	On Schedule
ORP-0014	M-045-99	Submit to Ecology the Preliminary Performance Assessment/Closure Analysis	9/30/2020	On Schedule

PBS	Milestone Number	Title	Due Date	Status
RL-0011	M-083-00A	Complete PFP Facility Transition and Selected Disposition Activities	09/30/17	Missed
RL-0013	M-091-52-T01B	Remove 10 Additional Mixed Waste Containers from Outside Storage Area A and/or B	11/30/19	Completed
RL-0030	M-015-99	Complete Remedial Investigation of PFP Related Waste Sites Located in 200-W A-1	12/31/19	Dispute Resolution
RL-0012	M-016-176	Complete Sludge Removal from 105-KW Fuel Storage Basin	12/31/19	Completed
RL-0041	M-016-178	Initiate Deactivation of 105-KW Fuel Storage Basin	12/31/19	Completed
RL-0030	M-024-70	Complete the Construction of All Wells Listed for CY19 and Before	12/31/19	Completed
RL-0041	M-093-28	Submit Change Package for Proposed Interim Milestones for 105-KE/KW Reactor Interim Safe Storage	12/31/19	Completed
RL-0040	M-016-250E	Submit to ECY a 3-Year Rolling Prioritized Schedule to Implement Waste Site Removal Actions	03/31/20	On Schedule
RL-0201	M-035-09L	Conduct Biennial Assessments of Information and Data Access Needs	03/31/20	At Risk
RL-0013	M-026-01AD	Submit Full Hanford Land Disposal Restrictions Report (for 2019)	04/30/20	On Schedule
RL-0030	M-024-58M	Initiate Discussions of Well Commitments	06/01/20	On Schedule
RL-0013	M-091-03N	Submit Revision of TRUM Waste and MLLW PMP to Ecology	06/30/20	On Schedule
RL-0030	M-024-71-T01	Conclude Discussions of Well Commitments Initiated Under M-024-58	08/01/20	On Schedule
RL-0030	M-015-97	Submit to Ecology, the 100-OL-1 Operable Unit Feasibility Study Report	08/30/20	On Schedule
RL-0040	M-037-10	Complete Closure for 6 Specified TSD Units	09/30/20	In Abeyance
RL-0040	M-085-100	Submit Removal Action Work Plan for 224T to EPA	09/30/20	On Schedule
RL-0040	M-085-72	Submit to Ecology a Removal Action Work Plan for 224B (DOE/RL-2004-36)	09/30/20	Completed
RL-0030	M-085-80	Submit Remedial Investigation/Feasibility Study Work Plan for 200-CP-1 to Ecology	09/30/20	At Risk
RL-0013	M-091-44T	Submit Change Package to Establish Schedule for Achieving Offsite Shipment of All TRUM Waste	09/30/20	On Schedule
RL-0013	M-091-49A	Submit a Change Request to Establish a Schedule for Achieving the Retrieval of RSW	09/30/20	On Schedule

Questions?

