



OFFICE OF
RIVER PROTECTION
United States Department of Energy

Regulator Budget Briefing

FY 2017 Accomplishments
FY 2018 Appropriation
FY 2019 President's Request



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Presented by: U.S. Department of Energy – Office of River Protection

April 17, 2018

EM Environmental Management
safety ♦ performance ♦ cleanup ♦ closure

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Mission

To safely manage the waste in Hanford's underground tanks while delivering the waste treatment capability needed for waste immobilization and final disposition.

Vision

To be a high-performing and innovative organization that is safety conscious, employee-focused, and committed to successfully achieving our environmental mission safely and efficiently.







- Safe nuclear operations and base operations
- Direct Feed Low-Activity Waste (DFLAW) project delivery
 - Low Activity Waste (LAW) Facility, Effluent Management Facility (EMF), Balance of Facilities (BOF), Analytical Laboratory
 - Tank Farms upgrades to support DFLAW
 - LAW pretreatment capability
 - Tank Side Cesium Removal (TSCR) design & equipment
- Tank waste retrieval and closure progress





(\$ in Thousands)

PBS	Project Baseline Summary (PBS) Title	FY 2017 Appropriation	FY 2018 Omnibus	FY 2019 President's Budget
ORP-0014	Radioactive Liquid Tank Waste Stabilization and Disposition	\$733,965	\$719,000	\$677,460
ORP-0014	15-D-409, Low Activity Waste Pretreatment System	\$73,000	\$93,000	\$56,053
Subtotal	Radioactive Liquid Tank Waste Stabilization and Disposition	\$806,965	\$812,000	\$733,513
ORP-0060	WTP-LBL (FY2018 omnibus)		\$630,000	
ORP-0060	High Level Waste Facility (FY2018 omnibus)*		\$75,000	
ORP-0060	WTP – Subprojects A-D (FY17 omnibus/FY19 President's Request)	\$593,000		\$675,000
ORP-0060	WTP – Subproject E	\$97,000	\$35,000	\$15,000
Subtotal	Major construction – Waste Treatment and Immobilization Plant (WTP)	\$690,000	\$740,000	\$690,000
ORP-0070	WTP Commissioning	\$3,000	\$8,000	\$15,000

*The FY2018 omnibus included a separate control point for the High-Level Waste Facility, which is not reflected in the FY2017 omnibus or FY2019 President's Request, where funding for HLW is included in WTP–Subprojects A-D





FY 2017 Accomplishments





Fiscal Year 2017 Accomplishments

- Maintained Tank Farms in a safe manner
- Completed retrieval/transfer of tank waste from AY-102
- Completed retrieval of C-105, the final tank in C Farm
- Conducted single-shell tank (SST) and double-shell tank (DST) integrity assessments
- Continued activities supporting the Tank Vapor Assessment Report recommendations
- Continued upgrades to DST AP-107 to support waste feed delivery to LAW Facility
- Completed two campaigns of the 242-A Evaporator, creating 525,000 gallons of DST storage space



LERF Basin 43 cover replacement before and after





Fiscal Year 2017 Accomplishments

- Completed Preliminary Design to a maturity of 60%
- Completed engineering scale integrated testing
- Conducted External Expert Review to re-evaluate LAWPS path forward to address cost and schedule challenges





Fiscal Year 2017 Accomplishments

- Completed a major rebaseline and contract modification effort for LBL and DFLAW modifications – Dec 2016
- LAW – Completed Installation of the Caustic Scrubber and assembly of Melter 1 and 2
- HLW – Achieved ORP approval for resumption of engineering, procurement, and construction
- EMF – Initiated construction in support of DFLAW modifications
- BOF – Began energizing WTP facilities from permanent power source
- PT – Completed resolution* of following technical issues:
 - T-1: Hydrogen generation and control in vessels
 - T-2: Criticality in Pulse-Jet mixed vessels
 - T-3: Hydrogen in piping and ancillary vessels

*These technical issues have been sufficiently resolved to allow engineering to proceed in support of design and safety basis development.



LAW – Plant cooling water heat tracing and insulation



LAW – PSA system turnover to startup





Fiscal Year 2017 Accomplishments

- Initiated determination of spare parts required following hot commissioning
- Initiated planning for WTP facility transition to operations





FY 2018 Planned Accomplishments





Fiscal Year 2018 Planned Activities (\$719M)

- Maintain Tank Farms in a safe manner
- Continue 222-S Laboratory operations and sustainment upgrades
- Conduct two 242-A Evaporator campaigns
- Continue SST and DST integrity activities
- Continue DST upgrades in AP farm to support DFLAW activities
- Continue construction activities in AX single-shell tank farm to support tank waste retrievals
- Continue Vapor Mitigation Strategies
- Complete installation of two interim surface barriers in SX Tank Farm
- Initiate design activities for TSCR



Strobic Air unit assembled





Fiscal Year 2018 Planned Activities (\$93M)

- Implement recommendations from the LAWPS External Review
- Complete 45% Design Review
- Complete Safety Design Strategy
- Issue Technology Maturation Plan



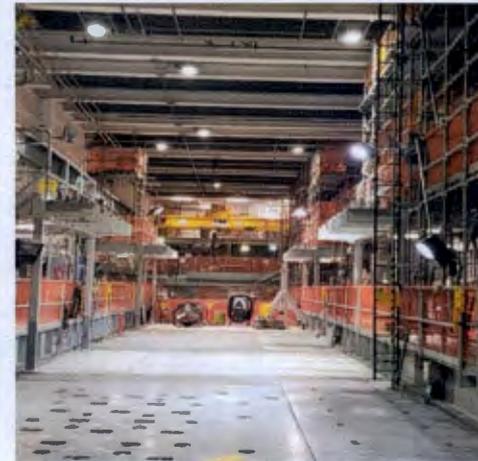
Potential locations for LAW waste feed delivery capabilities





Fiscal Year 2018 Planned Activities (\$740M)

- LAW – “LBL Physical Plant Complete” interim contract milestone (per Mod 409) and initiate startup testing for LAW systems
- LAW – Completed bulk cable install to EL +48’ (Oct 2017)
- EMF – Receive evaporator, vessels, and process cell equipment
- EMF – Complete permit package submittals for construction
- BOF – Complete functional testing of the water treatment building
- PT – Complete resolution and documentation for the remaining technical issues:
 - T-4: PJM vessel mixing and control
 - T-5: Erosion and corrosion
 - T-6: Conceptual design study
 - T-7: Vessel and equipment structural integrity
 - T-8: Facility Ventilation/Process Off-gas Treatment
- HLW – Resumption of engineering design



LAW – Lighting energized, +22’
Melter Gallery



DFLAW – Evaporator Reboiler
fabrication





Fiscal Year 2018 Planned Activities (\$8M)

- Complete determination of spare parts required following hot commissioning
- Continue planning for WTP facility transition to operations
- Initiate activities to procure long lead items required for WTP facility operations





FY 2019 President's Budget Request





Fiscal Year 2019 Planned Activities (\$677.4M)

- Maintain Tank Farms in a safe manner
- Continue 222-S Laboratory operations and sustainment upgrades
- Conduct 242-A Evaporator campaigns
- Continue SST and DST integrity activities
- Continue DST upgrades in AP farm to support DFLAW activities
- Continue construction activities in AX single-shell tank farm to support retrievals
- Continue Vapor Mitigation Strategies
- Initiate construction of TSCR system to support DFLAW



Conceptual layout for the TSCR





Fiscal Year 2019 Planned Activities (\$56M)

- Complete 60% and 90% design
- Complete and DOE approve Preliminary Documented Safety Analysis
- Complete integrated scale testing
- Complete waste transfer lines design
- Complete ion exchange pad design
- Initiate installation of temporary power for LAWPS construction site





Fiscal Year 2019 Planned Activities (\$690M)

- LAW – Continue startup testing of major systems
- LAW – Complete startup testing for the Plant Service Air and Demineralized Water systems
- BOF – Complete startup testing for support facilities
- EMF – Complete installation of vessels and process equipment
- EMF – Continue construction and begin startup testing for components and systems
- HLW – Continue engineering design



Siding Installation on LAW Fire Riser Room





Fiscal Year 2019 Planned Activities (\$15M)

- Continue commissioning activities
- Continue procurement of long lead consumables and spare parts
- Initiate WTP facility transition plan





- The Office of River Protection is committed to maintaining worker and public safety and protecting the environment
- We are committed to continued progress
- We appreciate and welcome your continued input





OFFICE OF
RIVER PROTECTION
United States Department of Energy

*"Protecting our workers,
the public, and the environment"*



The Hanford Reach
White Bluffs Overlooking the Columbia River

