



OFFICE OF  
**RIVER PROTECTION**  
United States Department of Energy

# Budget Briefing

**FY 2018 President's Budget  
FY 2019 Estimated Requirements**

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

**June 7, 2017**





## Office of River Protection (ORP)

ORP is responsible for planning, integrating, and managing the River Protection Program executed by contractors performing work under ORP management. ORP has ~225 employees, both federal and contractor.

## Washington River Protection Solutions (WRPS)

WRPS is the prime contractor responsible for safely managing and operating the Tank Farms. WRPS has 2,094 employees\*.

## Bechtel National, Inc. (BNI)

BNI is responsible for the engineering, construction, startup and commissioning of the Waste Treatment and Immobilization Plant. BNI has 3,044 employees\*.

## Wastren Advantage, Inc. (WAI)

WAI is the prime contractor responsible for managing the 222-S Laboratory. WAI has 56 employees.\*



\*As of September 30, 2016





- Safe Nuclear Operations and Base Operations
- Direct Feed Low-Activity Waste Approach
  - Tank Farms upgrades to support Direct-Feed Low Activity Waste
  - Low Activity Waste Pretreatment System Facility (LAWPS)
  - Low Activity Waste Facility, Balance of Facilities, Analytical Laboratory
- Tank waste retrievals
- Waste Treatment and Immobilization Plant technical issues resolution
- Waste Treatment and Immobilization Plant HLW and PT Production Engineering/EPC





(\$ in Thousands)

PBS	Project Baseline Summary (PBS) Title	FY 2016 Appropriation	FY 2017 Omnibus	FY 2018 President's Budget
ORP-0014	Radioactive Liquid Tank Waste Stabilization and Disposition	\$649,000	\$733,965	\$713,311
ORP-0014	15-D-409, Low Activity Waste Pre-Treatment System	\$75,000	\$73,000	\$93,000
<b>Subtotal</b>	<b>Radioactive Liquid Tank Waste Stabilization and Disposition</b>	<b>\$724,000</b>	<b>\$806,965</b>	<b>\$806,311</b>
ORP-0060	WTP – Subprojects A-D	\$595,000	\$593,000	\$655,000
ORP-0060	WTP – Subproject E	\$95,000	\$97,000	\$35,000
<b>Subtotal</b>	<b>Major construction – Waste Treatment and Immobilization Plant (WTP)</b>	<b>\$690,000</b>	<b>\$690,000</b>	<b>\$690,000</b>
ORP-0070	WTP Commissioning	\$0	\$3,000	\$8,000
<b>Total – ORP</b>	<b>Office of River Protection Funding Summary</b>	<b>\$1,414,000</b>	<b>\$1,499,965</b>	<b>\$1,504,311</b>





## *The Tank Farms* A 200 Area Aerial Overview

200 West Area

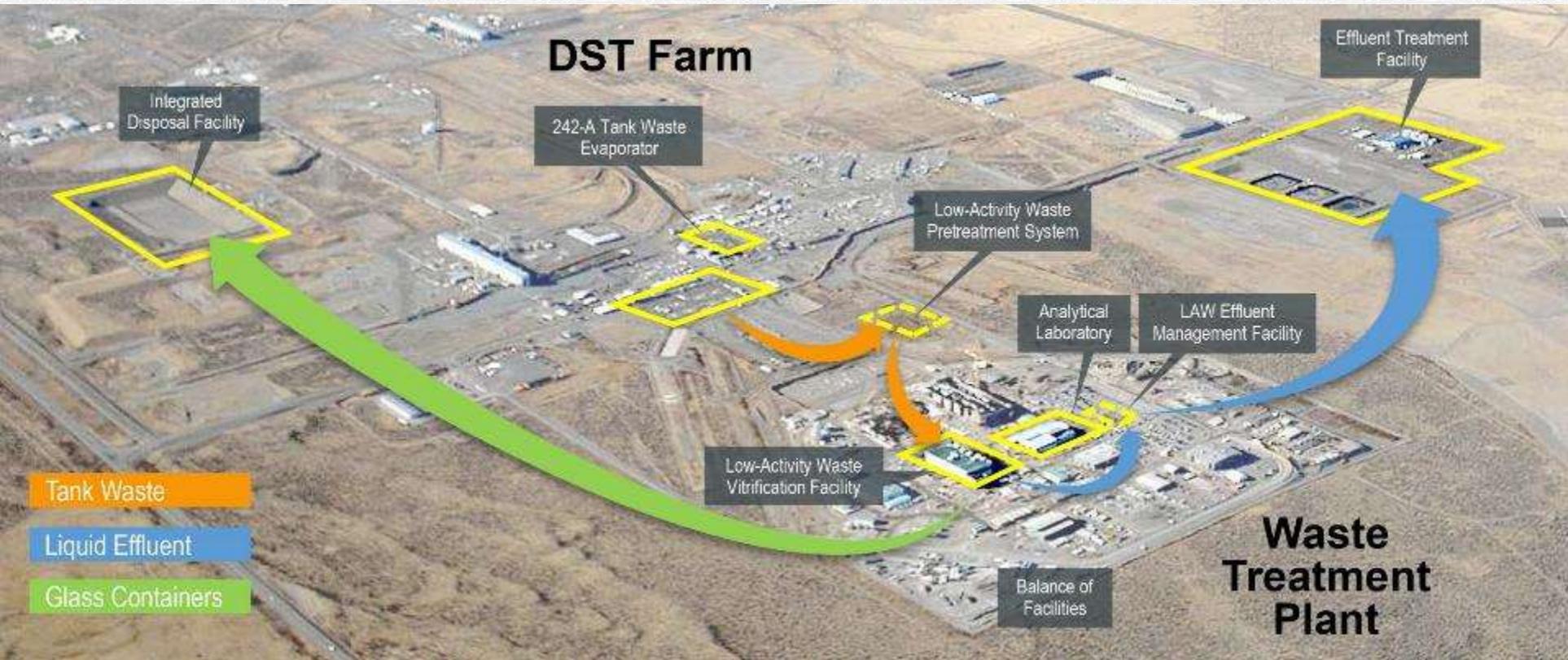
200 East Area

Effluent Treatment  
Facility Ponds

Waste Treatment and  
Immobilization Plant

- Single-Shell Tank Farm
- Double-Shell Tank Farm





## First step in sequential approach to tank waste treatment and disposal

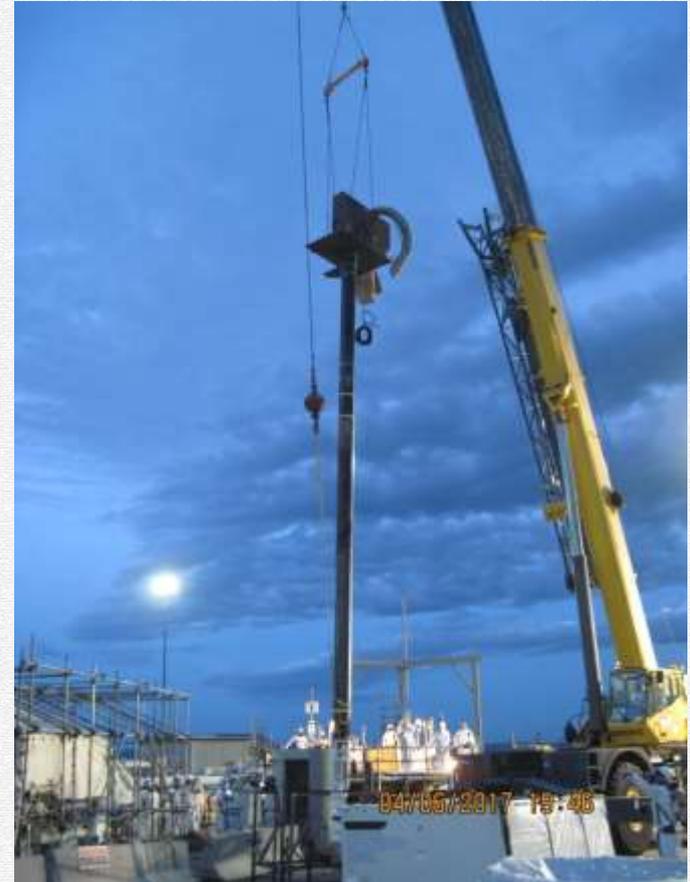
- DFLAW facilities and infrastructure actively working to startup as soon as 2022
- Provides earliest practicable tank waste disposition





## *Fiscal Year 2018 Planned Activities (\$713M)*

- Maintain Tank Farms in a safe manner
- Continue 222-S Laboratory operations and sustainment upgrades
- Conduct 242-A Evaporator campaigns
- Continue DST AY-102 Settlement Agreement activities
- Complete retrieval of remaining tank in C-Farm (C-105)
- Continue Effluent Treatment Facility operations and complete cover replacement (Basin 42)
- Continue single-shell and double-shell tank integrity activities
- Continue tank farms preventive and corrective maintenance activities
- Continue upgrades in AP farm to support waste feed to LAWPS
- Continue construction activities in AX single-shell tank farm
- Continue Vapor Mitigation Strategies



C-105 – Installation of the slurry pump





## *Proposed FY2019 Work Descriptions*

- Maintain Tank Farms in a safe manner
- 222-S Laboratory operations and sustainment upgrades
- 242-A Evaporator campaigns
- Effluent Treatment Facility operations and mission required modifications
- Single-shell and double-shell tank integrity activities
- Tank farms preventive and corrective maintenance activities
- Infrastructure upgrades in SST and DST Tank Farms
- Continue upgrades in AP farm to support waste feed to LAWPS
- A/AX single-shell tank farm retrieval activities
- Continue Vapor Mitigation Strategies
- Interim Barrier Activities



AY-102 – view inside tank following retrieval – currently 98% complete





## *Fiscal Year 2018 Planned Activities (\$93M)*

- Conduct Technology Readiness Assessment to validate maturity of selected Critical Technology Elements
- Commence site preparation and fabrication of long lead procurement equipment
- Complete 90% design review
- Complete the Preliminary Documented Safety Analysis
- Submit the remaining two of three LAWPS RCRA permit modification request packages to Ecology
- Complete Critical Decision 2 (Approve Performance Baseline) and Critical Decision 3 (Approve Start of Construction) deliverables and submit to DOE-HQ for approval
- Award construction subcontract and mobilize to site for full construction



## *Proposed FY2019 Work Descriptions*

- Initiate construction activities



## *Fiscal Year 2018 Planned Activities (\$655M)*

### **Low-Activity Waste (LAW) Facility, Analytical Laboratory, High-Level Waste (HLW) Facility, and Balance of Facilities (BOF)**

- LAW Construction Complete
- Issue LAW Documented Safety Analysis (DSA)
- Complete placement of EMF concrete and structural steel
- Receive and install EMF evaporator
- Receive and install major EMF vessels
- Continue preservation maintenance of the HLW Facility
- Complete fabrication of HLW Facility RLD Vessels 7 & 8
- Complete delivery or suspension of current HLW procurements, and begin rebaseline of the HLW Facility



LAW Caustic Scrubber installation





## *Proposed FY 2019 Work Description*

### **Low-Activity Waste (LAW) Facility, Analytical Laboratory, High-Level Waste (HLW) Facility, and Balance of Facilities (BOF)**

- Analytical Laboratory startup and commissioning activities
- Balance of Facilities construction, startup, and commissioning activities
- LAW engineering, construction, startup and commissioning activities
- HLW re-baseline, advance design and restart construction



Three HLW Facility Autosampler units were received this spring.



This 25-ton crane will be installed in HLW melter cave two.





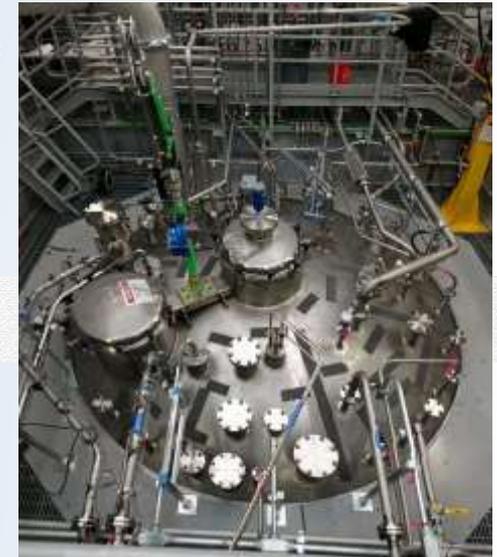
## *Fiscal Year 2018 Planned Activities (\$35M)*

### **Pretreatment (PT) Facility**

- Complete resolution of PT Technical Issue T4 (Vessel mixing)
  - Issue PJM Vessel Mixing and PJM Controls closure report and letter
- Continue PT Technical Issues Resolution T5 (Erosion/Corrosion)
  - Complete engineering studies to determine requirements for testing (Erosion)
  - Complete stress corrosion cracking testing; issue Confirmed Localized Corrosion Material Design Limits Report (Corrosion)
- Complete resolution of PT Technical Issue T6 (Optimization of PT Facility design)
- Complete resolution of PT Technical Issue T7 (Structural integrity of vessels)
  - Complete structural assessment of installed feed receipt vessels
  - Prepare plan for evaluation of structural design of remaining installed vessels
- Continue preservation maintenance of the PT Facility

### *Proposed FY 2019 Work Description*

- Continue preservation maintenance of the PT Facility
- Initiate re-baseline efforts



Pulse jet mixer control testing is expected to be completed in early FY2018





## *Fiscal Year 2018 Planned Activities (\$8M)*

- Complete studies to determine spare parts required following Hot Commissioning in 2021
- Initiate activities to procure long lead items if required based on studies
- Continue risk assessment to identify risk associated with WTP facility transition to operations
- Implement WTP facility transition risk mitigating strategies

## *Proposed FY 2019 Work Description*

- Continue to define spare part requirements
- Award WTP Operations contract
- Development of Transition Plan





	DFLAW Facilities	Activities
Tank Farm Waste	Double shell tanks	 <b>Upgrades required</b> / DFLAW waste feed delivery upgrades (AP & AW-Farms), air permits
	242-A Evaporator	 <b>Operating facility</b> / No additional activities required
	LAW Pretreatment System	 <b>CD-1 approved, in design</b> / Long-lead procurements, LAWPS RCRA permit
	WTP LAW Vitrification Facility	 <b>Construction underway</b> / Startup and commissioning, planning including readiness, RCRA and air permits, LAW DSA
	Integrated Disposal Facility	 <b>Construction complete</b> / IDF performance assessment, upgrades, ORR, RCRA and air permits
Secondary Waste	LAW Effluent Management Facility	 <b>In design</b> / Construction, RCRA and air permits
	Effluent Treatment Facility	 <b>Operating facility</b> / Minor additional activities required
	State-approved land disposal site	 <b>Operating facility</b> / No additional activities required
	Consolidated solid waste management	 <b>Decision complete</b> / 90-day storage pad
Support Facilities	222-S Laboratory	 <b>Operating facility</b> / Minor additional activities required
	WTP Analytical Laboratory	 <b>Construction nearly complete</b> / Startup and commissioning, RCRA permit, Lab DSA
	WTP Balance of Facilities	 <b>Construction underway</b> / Transitioning to startup and commissioning, DFLAW upgrades



- Facility is currently operating and no significant modifications required to support DFLAW



- Facility is not operating, is under construction, or needs major modifications to support DFLAW





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



The Hanford Reach  
White Bluffs Overlooking the Columbia River

