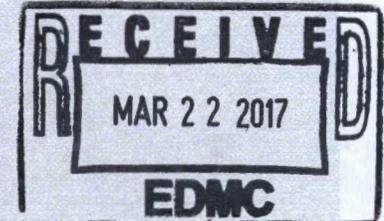




OFFICE OF  
**RIVER PROTECTION**  
United States Department of Energy

# Regulator Budget Briefing



# FY16 Review/FY17 President's Budget

**Delmar Noyes, Acting Assistant Manager, WTP Startup, Commissioning & Integration**

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

**February 22, 2017**



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## 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





## The Tank Farms

A 200 Area Aerial Overview

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





- Safe Nuclear Operations and Base Operations, including addressing tank vapors
- Low Activity Waste Facility, Balance of Facilities, Analytical Laboratory
- Tank Farms upgrades to support Direct-Feed Low Activity Waste
- Complete retrieval of double-shell tank AY-102
- Tank waste retrievals
- Low Activity Waste Pretreatment System Facility (LAWPS)
- Waste Treatment and Immobilization Plant technical issues resolution





(\$ in millions)

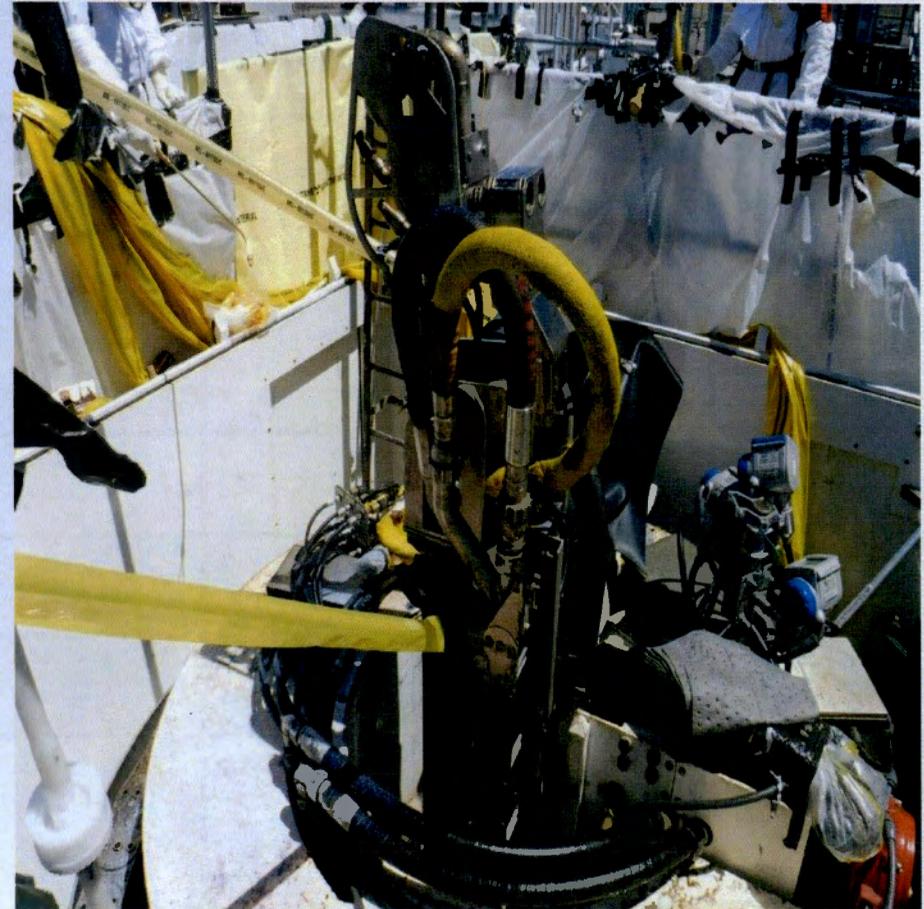
PBS	Project Baseline Summary (PBS) Title	Fiscal Year (FY) 2016 Omnibus Enacted	FY 2016 Costs	FY 2016 Carryover	FY 2017 President's Budget	FY 2017 CR Appropriation through Apr 28
ORP-0014	Radioactive Liquid Tank Waste Stabilization and Disposition	\$649	\$637	\$49	\$721	\$365
ORP-0014	15-D-409, Low Activity Waste Pretreatment System	\$75	\$39	\$51	\$73	\$43
<b>Subtotal</b>	<b>Radioactive Liquid Tank Waste Stabilization and Disposition</b>	<b>\$724</b>	<b>\$677</b>	<b>\$101</b>	<b>\$794</b>	<b>\$408</b>
ORP-0060	WTP – Subprojects A-D	\$ 595	\$624	\$141	\$593	\$341
ORP-0060	WTP – Subproject E	\$ 95	\$117	\$76	\$97	\$54
<b>Subtotal</b>	<b>Major construction – Waste Treatment and Immobilization Plant (WTP)</b>	<b>\$ 690</b>	<b>\$741</b>	<b>\$218</b>	<b>\$690</b>	<b>\$395</b>
ORP-0070	WTP Commissioning	\$ 0	\$0	\$0	\$3	\$0
ORP-0202	General Plant Project (GPP)	\$ 0	\$0	\$0	\$12	\$0
<b>Total – ORP</b>	<b>Office of River Protection Funding Summary</b>	<b>\$1,414</b>	<b>\$1,419</b>	<b>\$319</b>	<b>\$1,499</b>	<b>\$804</b>





## *Fiscal Year 2016 Accomplishments*

- Maintained Tank Farms in a safe manner
- Conducted 222-S Laboratory operations and upgrades
- Performed two 242-A Evaporator campaigns for a total volume reduction of ~300,000 gallons
- Operated Effluent Treatment Facility (ETF) and treated 4 million gallons of waste from Liquid Effluent Retention Facility (LERF)
- Continued single-shell tank and double-shell tank integrity activities
- Completed retrieval operations of C-102 and C-111 and performed 2<sup>nd</sup> technology activities for C-105
- Initiated retrieval operations of AY-102 with the first technology ~ 95% retrieved
- Continued double-shell tank to double-shell tank transfers
- Continued Phase I of Tank Vapor Assessment Team (TVAT) Implementation Plan activities
- Deployed vapors mobile sampling truck and website
- Initiated AX Farm pre-retrieval activities

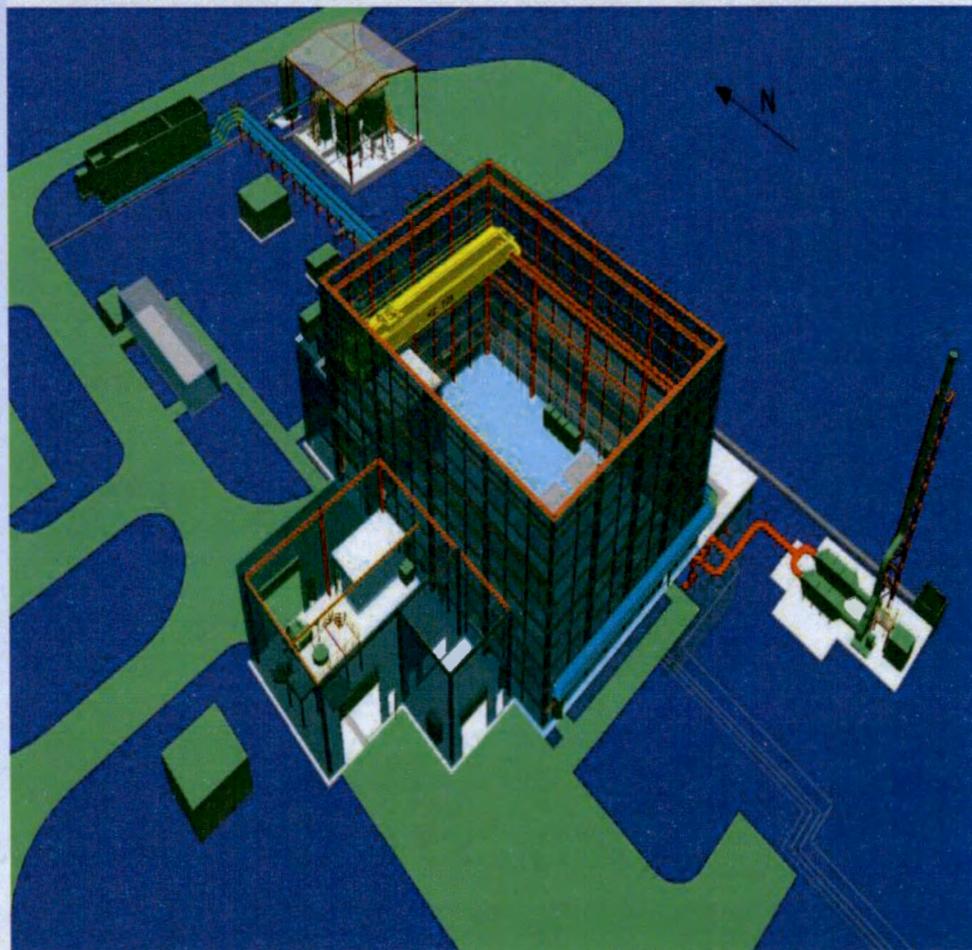


C-105 – crews disassembling MARS-V, this work was completed July through September



## *Fiscal Year 2016 Accomplishments*

- Completed the LAWPS 30% Design and 30% Delta Design Review
- Completed the LAWPS Project Peer Review with no significant findings
- Submitted the RCRA Notice of Intent (NOI) to Ecology
- Submitted the revised Safety Design Strategy to DOE-EM for approval.
- Completed setup of, and initiated testing on, the Engineering-scale Test Rig (Mid-Columbia Engineering) and the Full Scale Ion Exchange Column (AVANtech)
- Completed Revision 0 of the Piping & Instrumentation Drawings
- Completed Revision 0 of the Ventilation & Instrumentation Drawings
- Completed procurement specifications for the Ion Exchange and Cross Flow Filters.
- Issued Request for Proposal and awarded procurement for the LAWPS Bridge Crane





## ***Fiscal Year 2017 Planned Activities (\$721M)***

- Maintain Tank Farms in a safe manner
- Continue vapor mitigation strategies
- Continue 222-S Laboratory operations and sustainment upgrades
- Conduct 242-A Evaporator campaigns
- Complete sludge retrieval of DST AY-102 to meet settlement agreement with the state and support inspection
- Complete retrieval of remaining tank in C-Farm (C-105)
- Continue ETF operations and initiate LERF cover replacement
- Continue single-shell and double-shell tank integrity activities
- Continue tank farms preventive and corrective maintenance activities
- Continue upgrades to double-shell tank AP-107 to support waste feed to LAWPS
- Continue construction activities in AX single-shell tank farm (Consent Decree Compliance)



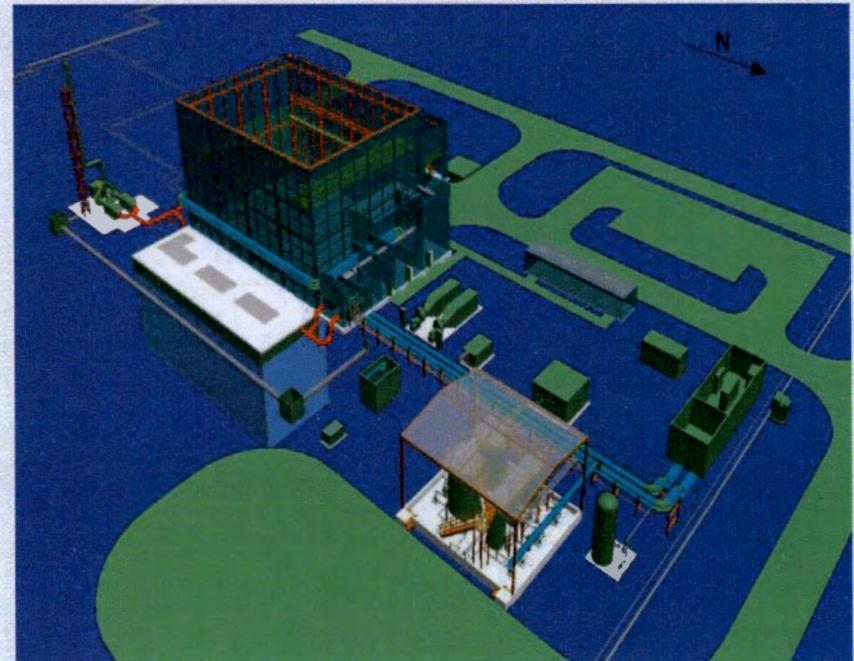
AY-102 – view inside tank during retrieval – currently 97% complete





## *Fiscal Year 2017 Planned Activities (\$73M)*

- Complete 60% Design Review
- Complete the Safety Design Report
- Award the long lead procurement of the Ion Exchange Column and the Cross Flow Filter
- Complete Critical Decision 3A and submit to DOE-HQ for approval
- Complete the LAWPS Engineering-scale Integrated Test and the Full Scale Ion Exchange Test





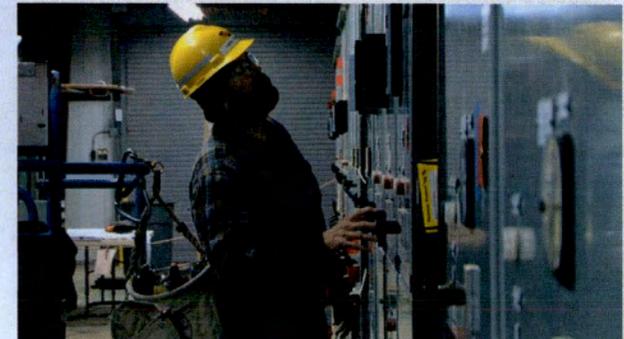
## *Fiscal Year 2016 Accomplishments*

### **Low Activity Waste Facility, Analytical Laboratory, High-Level Waste Facility, and Balance of Facilities**

- Installed last major pieces of offgas equipment in the Low Activity Waste Facility – thermal catalytic oxidizer, ammonia dilution skid, and caustic scrubber vessel.
- Completed castable refractory installation and welded gas barrier lids on both LAW melters
- Received draft HLW PDSA update; undergoing DOE review for approval
- Completed disposition of HLW Facility Design & Operability issues in support of full construction authorization
- Balance of Facilities – Building 87 Electrical Switchgear was turned over from construction to startup



High-Level Waste Facility



Building 87 is the first facility in the WTP complex to be supplied by permanent power



## ***Fiscal Year 2016 Accomplishments***

### **Pretreatment Facility**

- Completed resolution of technical issues
  - T-1: Hydrogen generation and control in vessels
  - T-2: Criticality in Pulse-het mixed vessels
  - T-3: Hydrogen in piping and ancillary vessels
- Installed full-scale vessels in Richland test facility in July 2016; began pulse jet mixer control tests in December

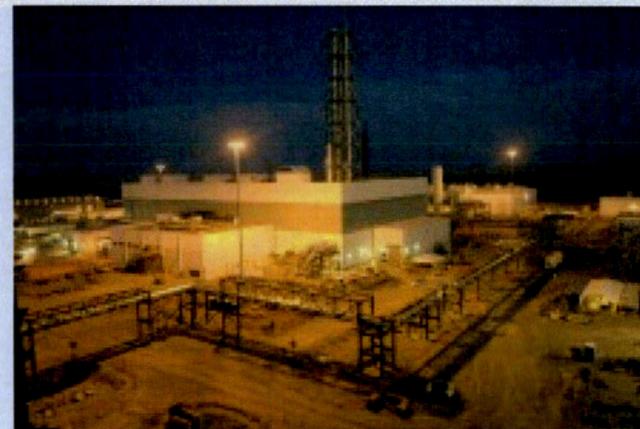




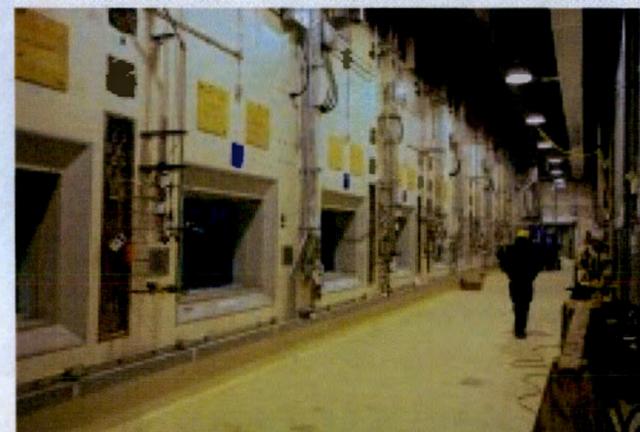
## ***Fiscal Year 2017 Planned Activities (\$593M)***

### **Low Activity Waste Facility, Analytical Laboratory, High Level Waste Facility, and Balance of Facilities**

- Complete Low-Activity Waste (LAW) Facility Melters 1 and 2 final assembly and installation
- Complete an update to the LAW Preliminary Document Safety Analysis (PDSA)
- Begin system start-up for LAW Facility
- Initiate construction of the Effluent Management System
- Begin electrical distribution from the BOF Switchgear Facility in support of energized system startup testing
- Complete LAB temporary control room
- Continue with High Level Waste (HLW) Facility Radioactive Liquid Waste Disposal System (RLD) system design
- Continue preservation maintenance of the HLW facility
- Complete HLW Facility Radioactive Liquid Waste Disposal System (RLD) re-evaluation incorporating Independent Expert Review Team (IERT) assessment
- Approve updated HLW PDSA
- Continue resumption of procurement and construction for HLW Facility (Authorization to Resume EPC, Decision 2)
- Approval of Baseline Change Proposal for LAW, and portions of Analytical Laboratory and Balance of Facilities necessary for operation in a Direct Feed LAW configuration (complete)



Low Activity Waste Facility



Analytical Laboratory





## ***Fiscal Year 2017 Planned Activities (\$97M)***

### **Pretreatment Facility**

- Continue PT Technical Issues Resolution T4 (Vessel mixing) – Complete Standard High Solids Vessel Design (SHSVD) testing (Phase 3 Pulse Jet Mixers (PJM) controls)
- Continue PT Technical Issues Resolution T5 (Erosion/Corrosion)
  - Pipe Loop testing
  - ¼ Scale Jet Impingement Testing
  - Erosion Design Basis
- Continue PT Technical Issues Resolution T6 (Optimization of PT Facility design) - Pretreat Vessel Vent Process/Process Vessel Vent Exhaust (PVP/PVV), Pulse Jet Ventilation Systems Study
- Continue PT Technical Issues Resolution T7 (Structural integrity of vessels)
  - SHSVD Plant Structural Integrity Analysis
  - Basis of Design Change Notice (seismic and other changes to on-site vessels)





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## Working Together for a Shared Vision

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





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



The Hanford Reach  
White Bluffs Overlooking the Columbia River





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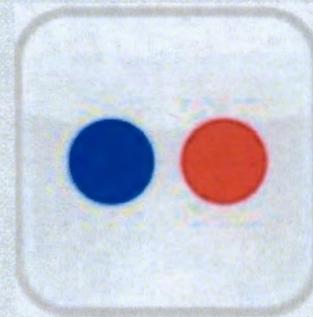
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