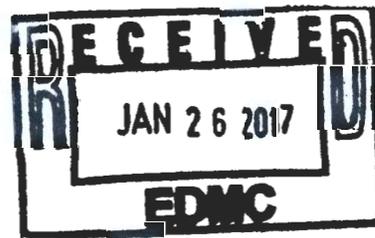


[0072770H]

FINAL

Office of River Protection
Consent Decree
Monthly Report
January¹ 2017



Consent Decree, *State of Washington v. Dept. of Energy*, Case No. 2:08-cv-05085-FVS
(October 25, 2010)

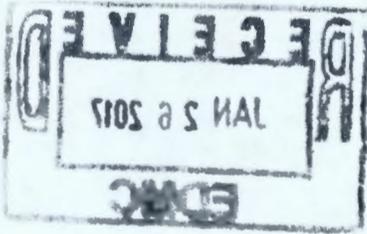
Amended Consent Decree, *State of Washington v. Dept. of Energy*, Case No.
2:08-CV-5085-RMP (March 11, 2016)

Second Amended Consent Decree, *State of Washington v. Dept. of Energy*, Case
No. 2:08-5085-RMP (April 12, 2016)²

¹ The narrative descriptions of progress in this report cover the period from December 1-31, 2016. Earned Value Management System data and descriptions cover the period of November 1-30, 2016; this includes the facility completion percentage estimates included at various locations in the Waste Treatment and Immobilization Plant section.

² The cited consent decrees are between the State of Washington and U.S. Department of Energy. For each of these decrees, there are companion, separate consent decrees with the State of Oregon, as Intervenor, under the same case numbers.

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Acronyms and Abbreviations

BNI	Bechtel National, Inc.
BOF	Balance of Facilities
C5V	ventilation system for potential contamination zones C5
CD	Consent Decree (<i>State of Washington v. Dept. of Energy</i> , Case No. 2:08-cv-05085-FVS [October 25, 2010]; as amended, Amended Consent Decree, Case No. 2:08-cv-05085-RMP [March 11, 2016]; as amended, Second Amended Consent Decree, Case No. 2:08-cv-05085-RMP [April 12, 2016])
CV	cost variance
DFLAW	direct-feed low-activity waste
DOE	U.S. Department of Energy
Ecology	Washington State Department of Ecology
EMF	Effluent Management Facility
ERSS	extended reach sluicer system
FY	fiscal year
HAMTC	Hanford Atomic Metals Trades Council
HEPA	high-efficiency particulate air
HLW	High-Level Waste (Facility)
HPAV	hydrogen in piping and ancillary vessels
LAB	Analytical Laboratory
LAW	Low-Activity Waste (Facility)
LBL	Low-Activity Waste Facility, Balance of Facilities, and Analytical Laboratory
MARS-V	Mobile Arm Retrieval System-Vacuum
MSOW	Management Suspension of Work
NETL	National Engineering Technology Laboratory
NLD	Non-Radioactive Liquid Waste Disposal System
NQA-1	Nuclear Quality Assurance-1
ORP	U.S. Department of Energy, Office of River Protection
PDSA	preliminary documented safety analysis
PJM	pulse-jet mixer
PT	Pretreatment (Facility)
RLD	Radioactive Liquid Waste Disposal System
SCBA	self-contained breathing apparatus
SHSVD	standard high-solids vessel design
SV	schedule variance
WRPS	Washington River Protection Solutions LLC
WTP	Waste Treatment and Immobilization Plant

Consent Decree Milestone Statistics/Status

Milestone	Title	Due Date	Completion Date	Status
Fiscal Year 2020				
D-00A-07 Interim	LAW Facility Construction Substantially Complete	12/31/2020		On Schedule
D-16B-03	Of the 12 SSTs referred to in B-1 and B-2, complete retrieval of tank waste in at least 5	12/31/2020		Notice given that a serious risk has arisen. See letter 16-ORP- 0097
Fiscal Year 2022				
D-00A-08 Interim	Start LAW Facility Cold Commissioning	12/31/2022		On Schedule
Fiscal Year 2023				
D-00A-09 Interim	LAW Facility Hot Commissioning Complete	12/31/2023		On Schedule
16-ORP-Fiscal Year 2024				
D-16B-01	Complete Retrieval of Tank Waste from the following remaining SSTs in WMA-C: C-102, C-105, and C-111	03/31/2024		On Schedule
D-16B-02	Complete retrieval of tank wastes from the following SSTs in Tank Farms A and AX: A-101, A-102, A-104, A-105, A-106. AX-101, AX-102, AX-103, and AX-104. Subject to the requirements of Section IV-B-3 DOE may substitute any of the identified 9 SSTs and advice Ecology accordingly	03/31/2024		Notice given that a serious risk has arisen. See letter 16-ORP- 0097
Fiscal Year 2030				
D-00A-02 Interim	HLW Facility Construction Substantially Complete	12/31/2030		On Schedule
Fiscal Year 2031				

Milestone	Title	Due Date	Completion Date	Status
D-00A-13 Interim	Complete Installation of Pretreatment Feed Separation Vessels	12/31/2031		On Schedule
D-00A-14 Interim	PT Facility Construction Substantially Complete	12/31/2031		On Schedule
D-00A-19 Interim	Complete Elevation 98 feet Concrete Floor Slab Placements in PT Facility	12/31/2031		On Schedule
Fiscal Year 2032				
D-00A-03 Interim	Start HLW Facility Cold Commissioning	06/30/2032		On Schedule
D-00A-06 Interim	Complete Methods Validations	06/30/2032		On Schedule
D-00A-15 Interim	Start PT Facility Cold Commissioning	12/31/2032		On Schedule
Fiscal Year 2033				
D-00A-04 Interim	HLW Facility Hot Commissioning Complete	12/31/2033		On Schedule
D-00A-16 Interim	PT Facility Hot Commissioning Complete	12/31/2033		On Schedule
D-00A-17	Hot Start of Waste Treatment Plant	12/31/2033		On Schedule
Fiscal Year 2036				
D-00A-01	Achieve Initial Plant Operations for the Waste Treatment Plant	12/31/2036		On Schedule

DOE = U.S. Department of Energy
Ecology = Washington State Department of Ecology
HLW = high-level waste.
LAW = low-activity waste.
PT = pretreatment.
SST = single-shell tank.
WMA-C = C Farm waste management area.

Consent Decree Reports/Reviews

D-16C-03 series, Submit to State of Washington and State of Oregon Quarterly Report,
Due: End of month following each calendar year quarter, Status: On Schedule.

D-00C-02 series, Submit to State of Washington and State of Oregon Monthly Summary Reports, Due: End of each month, Status: On Schedule.

D-006-00-B1, Provide State of Oregon notice of meetings in D-006-00-B, etc. no less than 30 days before they are scheduled, Due: November 10, 2016, Status: In Progress

D-006-00-B, Meet Approximately Every Three Years after Entry of Decree to review requirements of the Consent Decree, Due: December 10, 2016, Status: In Progress .

Spare Reboiler Requirement Status

Facility Project Director: Ben Harp

Facility Operations Activity Manager: Paul Hernandez

Milestone	Title	Due Date	Status
D-16E-01	DOE must purchase by December 31, 2016 a spare E-A-1 reboiler for the 242-A Evaporator	12/31/2016	Complete
D-16E-02	Have available spare E-A-1 reboiler for the 242-A Evaporator	12/31/2018	On Schedule

DOE = U.S. department of Energy.

Description of activity and progress made for the spare E-A-1 reboiler for the 242-A Evaporator, including a description of cost and schedule performance:

- Since issuance of the March 11, 2016, Amended Consent Decree and the April 12, 2016, Second Amended Consent Decree, the U.S. Department of Energy (DOE) has provided the Washington River Protection Solutions, LLC (WRPS) with funding to accelerate the planned fiscal year (FY) 2017 work to design and procure the spare E-A-1 reboiler. The DOE Office of River Protection (ORP) authorized WRPS to proceed by awarding a not-to-exceed design/build contract no later than December 21, 2016.
- WRPS and ABW are in the process of finalizing the design/fabrication schedule with associated with the new spare 242-A re-boiler.

Single-Shell Tank Retrieval Program

Facility Project Director: Ben Harp

Facility Operations Activity Manager: Chris Kemp

Milestone	Title	Due Date	Status
D-16B-03	Of the 12 SSTs referred to in B-1 and B-2, complete retrieval of tank waste in at least 5	12/31/2020	Notice given that a serious risk has arisen. See letter 16-ORP-0097
D-16B-01	Complete retrieval of tank waste from the following remaining SSTs in WMA-C: C-102, C-105, and C-111	03/31/2024	On Schedule
D-16B-02	Complete retrieval of tank wastes from the following SSTs in Tank Farms A and AX: A-101, A-102, A-104, A-105, A-106, AX-101, AX-102, AX-103, and AX-104. Subject to the requirements of Section IV-B-3 DOE may substitute any of the identified 9 SSTs and advise Ecology accordingly	03/31/2024	Notice given that a serious risk has arisen. See letter 16-ORP-0097

SST = single-shell tank.

WMA-C = C Farm waste management area.

Significant Accomplishments during the Prior Three Months:

- Completed removal and disposal of 801A building legacy interior and equipment
- Completed AX 801-B/C building demolition
- Completed AX Farm air and water service building major utilities installation
- Received slurry pump hose support assemblies for AX-102/104
- Completed an additional AX Farm pit clean out (AX-04D); six of eight pit clean outs completed
- Completed AX POR-126 Exhauster & POR-127 Exhauster Cold Operational Acceptance Tests (OATs) and Hot Tie-ins
- Completed electrical service installation for A/AX Change Trailer
- Submitted C-102 Retrieval Data Report (RDR) to Ecology
- The removed C-105 MARS-V components were shipped to ERDF for disposal
- Removed C-105 A & C pit cover blocks and completed pit/riser inspections
- Received three Extended Reach Sluicer Systems (ERSS) for installation in Tank C-105

Significant Planned Activities in the Next Three Months:

- Initiate C-Farm Hose-in-Hose Transfer Line removals that have been plan for fiscal year 2017.
- Negotiate contract proposal for installing and performing the third retrieval technology at Tank C-105
- Complete Tank C-105 third retrieval technology design
- Initiate C-105 ERSS installation
- Complete AX ventilation readiness/turnover at portable exhauster POR126 and POR127
- Initiate AX-102 and AX-104 in-tank equipment removal
- Complete the two remaining AX-104 pit clean outs
- Initiate AX-101 and AX-103 pit clean out activities

Issues:

- On July 11, 2016, the Hanford Atomic Metal Trades Council (HAMTC), a labor organization composed of various unions working at Hanford, issued a “stop work” requiring mandatory use of supplied air within the perimeter fence lines of both single- and double-shell tank farms. This letter also included six other demands HAMTC expected WRPS to implement immediately. On August 31, 2016, WRPS and HAMTC signed a Memorandum of Agreement which documents HAMTC’s agreement to lift the stop work, based upon WRPS’s agreement to remain on supplied air until chemical cartridge testing is complete and reviewed by a third party selected by HAMTC. On July 21, 2016, the Washington State Attorney General and Citizens (Local Union 598 and Hanford Challenge) filed motions for preliminary injunction in federal court (Case 4:15-cv-05086-TOR) seeking, among other things, that all work inside the perimeter fences of any tank farm be performed while wearing *mandatory* supplied air. A hearing on the preliminary injunction motions was held on October 12, 2016. The court denied the motions for preliminary injunction in their entirety, however, the Memorandum of Agreement and interim measures associated with the motions for preliminary injunction slowed and/or delayed field work at the AX and C farms.³ For example, the AX-102 and AX-104 retrieval construction (removal of legacy/long length equipment) was affected by not being able to operate the tank-specific ventilation system. Due to the prior technical challenges related to completing retrievals at Tank 241-C-102 and Tank 241-C-111, and the current modifications to Tank 241-C-105, funding will be needed to complete Tank 241-AX-102 and Tank 241-AX-104 tank retrieval system(s) installation through FY 2018 with retrieval operations starting in FY 2019 to meet milestone D-16B-03 by December 31, 2020.
- ORP submitted letter 16-TF-0102, “Status Update Related to Tank Farm Vapors,” on September 15, 2016, to make certain Ecology is aware of several recent events regarding

³ The interim measures associated with the Memorandum of Agreement remained in effect until the Court’s recent ruling on the motions for preliminary injunction.

the Hanford tank farms retrieval activities, to pass along relevant information, and provide updates on the status of ongoing processes related to those vapor events and their mitigation. Ecology acknowledged receipt of this letter on October 17, 2016 and requested a copy of the WRPS response to ORP's September 8, 2016 request for additional information. WRPS responded to ORP's September 8, 2016 request by letter dated November 22, 2016. ORP discussed the WRPS November 22, 2016 letter informally with Ecology on November 25, 2016; ORP formally provided this on December 2, 2016 in 16-TF-0132. ORP submitted letter 16-ORP-0097 on December 6, 2017 which formally notified Ecology that serious risk has risen that DOE may be unable to meet milestones B-2 and B-3.

- In ORP letter 16-ORP-0097, ORP also noted that although the November 22, 2016, WRPS letter indicates that the expanded and extended usage of SCBA within all tank farms has potential impacts on DOE's ability to meet Milestone A-9, *Low Activity Waste (LAW) Facility Hot Commissioning Complete*, DOE has determined that there are a number of options available to modify operational and programmatic priorities so as to meet the A-9 milestone. As a result, DOE has not made a determination at this time that a serious risk has arisen that DOE may be unable to meet Milestone A-9 and, therefore, is not providing notification regarding Milestone A-9.

Tank Waste Retrieval Work Plan Status

Tank	TWRWP	Expected Revisions	First Retrieval Technology	Second Technology	Third Technology
AX-101	RPP-RPT-58932, Rev. 0	In Progress	Sluicing with ERSS	High-Pressure Water deployed with ERSS	-
AX-102	RPP-RPT-58933, Rev. 0	In Progress	Sluicing with ERSS	High-Pressure Water deployed with ERSS	-
AX-103	RPP-RPT-58934, Rev. 0	In Progress	Sluicing with ERSS	High-Pressure Water deployed with ERSS	-
AX-104	RPP-RPT-58935, Rev. 0	In Progress	Sluicing with ERSS	High-Pressure Water deployed with ERSS	-
C-101	RPP-22520, Rev. 8	Complete	Modified Sluicing with ERSS	High-Pressure Water deployed with the ERSS	-
C-102	RPP-22393, Rev. 7	Complete	Modified Sluicing with ERSS	High-Pressure Water deployed with the ERSS	-
C-104	RPP-22393, Rev. 7	Complete	Modified Sluicing	Chemical Retrieval Process complete per 13-TF-0018	-
C-105	RPP-22520, Rev. 8	Complete	MARS-V	MARS-V-High Pressure Water Spray	Chemical Dissolution Process with ERSS
C-107	RPP-22393, Rev. 7	Complete	MARS-S	MARS-S-High Pressure Water Spray	Water Dissolution
C-108	RPP-22393, Rev. 7	Complete	Modified Sluicing	Chemical Retrieval Process complete per 13-TF-0025	-
C-109	RPP-21895, Rev. 5	Complete	Modified Sluicing	Chemical Retrieval Process complete per 13-TF-0037	-
C-110	RPP-33116, Rev. 3	Complete	Modified Sluicing	Mechanical Waste Conditioning with an In-Tank Vehicle	High Pressure Water

Tank	TWRWP	Expected Revisions	First Retrieval Technology	Second Technology	Third Technology
C-111	RPP-37739, Rev. 2	Complete	Modified Sluicing	High pressure water using the ERSS	Chemical Dissolution Process with ERSS
C-112	RPP-22393, Rev. 7	Complete	Modified Sluicing	Chemical Retrieval Process	-

ERSS = extended reach sluicing system.

MARS = Mobile Arm Retrieval System.

S = sluicing.

TBD = to be determined.

TWRWP = tank waste retrieval work plan.

V = vacuum.

Significant Accomplishments:

- None.

Significant Planned Activities in the Next Three Months:

- Finalize AX Farm tank retrieval work plans.
- Incorporate third retrieval technology for C-105

Issues:

- None.

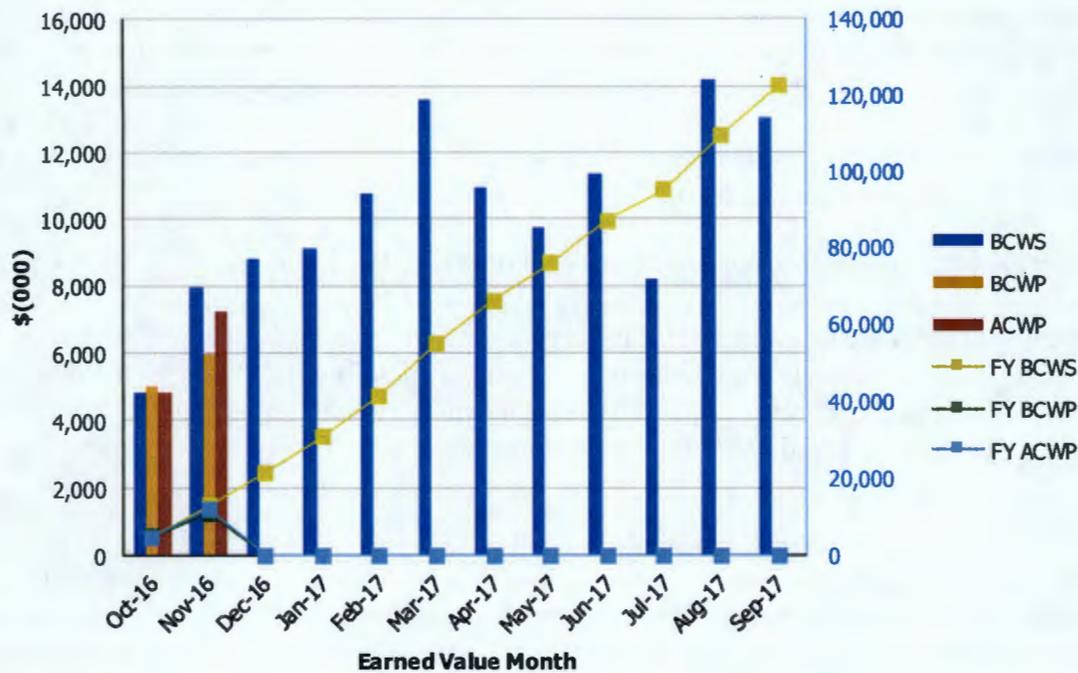
EXC-01a: Fiscal Year Cost and Schedule Report

Earned Value Data: Fiscal Year 2017

November-16

Tank Farms ORP-0014
Retrieve and Close SST's 5.02

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2016	\$4,816	\$4,996	\$4,822	1.04	1.04	\$4,816	\$4,996	\$4,822	1.04	1.04
Nov 2016	\$7,924	\$5,969	\$7,241	0.75	0.82	\$12,740	\$10,965	\$12,063	0.86	0.91
Dec 2016	\$8,772	\$0	\$0	0.00	0.00	\$21,512	\$0	\$0	0.00	0.00
Jan 2017	\$9,093	\$0	\$0	0.00	0.00	\$30,605	\$0	\$0	0.00	0.00
Feb 2017	\$10,763	\$0	\$0	0.00	0.00	\$41,369	\$0	\$0	0.00	0.00
Mar 2017	\$13,612	\$0	\$0	0.00	0.00	\$54,981	\$0	\$0	0.00	0.00
Apr 2017	\$10,950	\$0	\$0	0.00	0.00	\$65,931	\$0	\$0	0.00	0.00
May 2017	\$9,771	\$0	\$0	0.00	0.00	\$75,702	\$0	\$0	0.00	0.00
Jun 2017	\$11,344	\$0	\$0	0.00	0.00	\$87,046	\$0	\$0	0.00	0.00
Jul 2017	\$8,180	\$0	\$0	0.00	0.00	\$95,226	\$0	\$0	0.00	0.00
Aug 2017	\$14,158	\$0	\$0	0.00	0.00	\$109,385	\$0	\$0	0.00	0.00
Sep 2017	\$13,021	\$0	\$0	0.00	0.00	\$122,406	\$0	\$0	0.00	0.00

CTD	\$721,907	\$709,014	\$732,737	0.98	0.97
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ACWP = actual cost of work performed.
 BCWP = budgeted cost of work performed.
 BCWS = budgeted cost of work scheduled.
 CPI = cost performance index.

CTD = contract to date
 EVMS = earned value management system
 FY = fiscal year.
 SPI = schedule performance index.

Retrieve and Close Single-Shell Tanks (5.02)

The current month **unfavorable** schedule variance (SV) of (\$1,955K) is due to:

- Critical field activities such as in-tank equipment removal within AX Farm has been impacted due to the injunction and current stop work limiting waste distributing activities. Tank ventilation is considered a waste distributing activity, Active ventilation is required to remove in tank equipment. Non tank intrusive work has been impacted due to self-contained breathing apparatus (SCBA) usage and resulting inefficiencies.
- Installation of the C-105 slurry pump and jumpers has been impacted due to the A & C pit risers failing go/no go gauge test.

The current month **unfavorable** cost variance (CV) of (\$1,272K) is due to:

- Increased costs are associated with the continued inefficiencies associated with SCBA usage. Additional costs were incurred as a result of possible Beryllium contamination in A/AX Farm and C-Farm pits that required confirmatory sampling smears. These sampling series delayed work until Beryllium results were finalized.

Waste Treatment and Immobilization Plant Project

Federal Project Director: Bill Hamel

Deputy Federal Project Director: Joni Grindstaff

Milestone	Title	Due Date	Status
D-00A-06	Complete Methods Validations	06/30/2032	On Schedule
D-00A-17	Hot Start of Waste Treatment Plant	12/31/2033	On Schedule
D-00A-01	Achieve Initial Plant Operations for WTP	12/31/2036	On Schedule

WTP = Waste Treatment and Immobilization Plant

The Waste Treatment and Immobilization Plant (WTP) Project currently employs approximately 3,052 full-time equivalent contractor, Bechtel National, Inc. (BNI), and subcontractor personnel. This includes 592 craft, 538 non-manual, and 166 subcontractor full-time equivalent personnel working at the WTP construction site (all facilities).

The WTP Project continues to focus on completion of the Low-Activity Waste (LAW) Facility, Balance of Facilities (BOF), and Analytical Laboratory (LAB) (collectively known as LBL, including direct-feed LAW [DFLAW] and LBL facility services). As of November 2016, LBL facilities were 52 percent complete, design and engineering was 77 percent complete, procurement was 66 percent complete, construction was 68 percent complete, and startup and commissioning was 14 percent complete.

The WTP Project has complied with milestones already come due as of the date of this report. There are no missed milestones that may affect compliance with other milestones.

Significant Accomplishments during the Prior Three Months:

- The ORP and BNI contract modification and Baseline Change Proposal (BCP) to support the new LBL/DFLAW work scope was approved by the Deputy Energy Secretary, in her role as the Chief Executive for Project Management, and the Energy System Acquisition Advisory Board.

Significant Planned Activities in the Next Three Months:

- Significant planned activities in the next three months are noted in project reports for ?T, HLW, LAW, BOF and LAB.

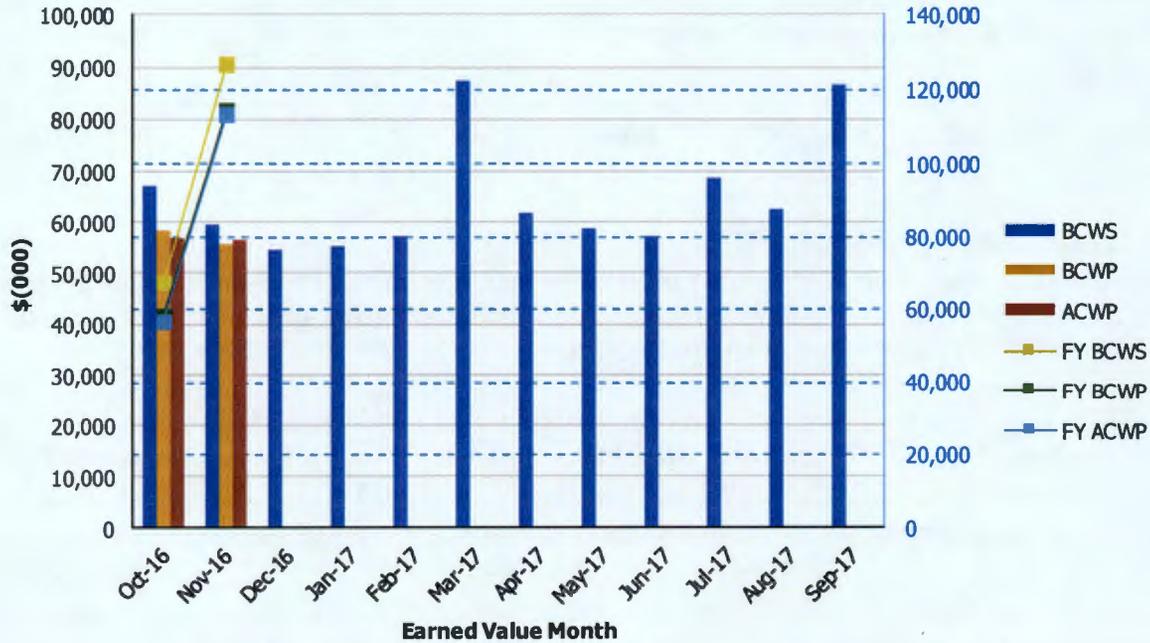
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2017 Earned Value Data

Data as of: November 2016

**River Protection Project
Waste Treatment Plant (WTP) Project**

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2016	\$67,019	\$58,321	\$56,633	0.87	1.03	\$67,019	\$58,321	\$56,633	0.87	1.03
Nov 2016	\$59,361	\$55,681	\$56,299	0.94	0.99	\$126,379	\$114,002	\$112,932	0.90	1.01
Dec 2016	\$54,672									
Jan 2017	\$55,245									
Feb 2017	\$57,092									
Mar 2017	\$87,425									
Apr 2017	\$61,907									
May 2017	\$58,572									
Jun 2017	\$57,328									
Jul 2017	\$68,817									
Aug 2017	\$62,680									
Sep 2017	\$86,488									

PTD	\$9,954,495	\$9,915,012	\$9,843,021	1.00	1.01
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- | | |
|---|--|
| ACWP = actual cost of work performed. | CTD = contract to date. |
| BCWP = budgeted cost of work performed. | EVMS = earned value management system. |
| BCWS = budgeted cost of work scheduled. | FY = fiscal year. |
| CPI = cost performance index. | SPI = schedule performance index. |

Project Schedule and Cost Variance Performance

Performance Tracking	SV (\$x1,000)	CV (\$x1,000)
Current Period (November 2016)	(\$3,679)	(\$618)
Fiscal Year 2017 to-date	(\$12,377)	\$1,070
Cumulative (through November 2016)	(\$39,483)	\$71,990

CV = Cost Variance.

SV = Schedule Variance.

Earned Value Management System Analysis

The earned value management system is intended to provide a status of how the contractor is progressing against its planned work (i.e., schedule), and whether it is costing more or less to complete the work than planned. The project plan is measured by expressing the schedule in terms of dollars spread over the anticipated project duration, and then for each month, determining how much of the planned work was accomplished or “earned,” as measured in equivalent dollars. If more work is accomplished than planned, then the project is ahead of schedule and has a favorable SV. Similarly, if less work is accomplished, the project is behind schedule and has an unfavorable SV. Accomplished work is reported in the month it was completed, which may not be when it was planned. For example, work completed in a month earlier than planned would be reported as a favorable SV for the month in which it was completed, but would be reported as an unfavorable SV in the month it was planned. The end result would be the overall cumulative SV netting out to zero over these months. Likewise, work completed late will recover an earlier reported unfavorable SV.

The CV measures the actual cost of work performed against the earned dollar value of that performed work. As an example, assume \$10,000 of work was planned to-date, \$8,000 was reported as being performed (earned), at an actual cost of \$9,000. This work would be reported as being \$2,000 behind schedule [a negative or unfavorable SV: $\$8,000 - \$10,000 = (\$2,000)$], and has cost \$1,000 more [a negative or unfavorable CV: $\$8,000 - \$9,000 = (\$1,000)$] than was planned for completing that work scope. Likewise, a favorable or positive CV would be reported if it cost less to complete the work than the performed dollar value of the work.

The SV and CV are reported for each monthly period, fiscal year to-date, as well as for the project-to-date value. The monthly variances can fluctuate significantly (for reasons noted earlier), so the fiscal year or cumulative-to-date report provides a better indicator of the overall project completion status, and can give a reasonable projection of how the project will finish, based on the progress-to-date.

For the November reporting period, a net unfavorable SV of approximately (\$3.7 million) was reported (meaning a net \$3.7 million of scheduled work scope was not completed), primarily due to the following:

- Scheduled work for LBL/DFLAW, at a net unfavorable SV of (\$2.6 million), was not completed due to construction delays in receipt of temporary authorization permitting and

challenges with on-time pipe procurement deliveries (accordingly, construction is deferring site and concrete work); the engineering review of the LAW draft Preliminary Documented Safety Analysis (PDSA) was delayed due to late submittal of the PDSA; there was a delay in negotiations for the carbon media shakedown testing technical subcontract; the BOF commissioning delay was related to the management suspension of work, which froze maintenance and lockout/tagout work; BOF experienced startup delays in nonradioactive liquid disposal system testing, and not receiving turnover of systems in the cooling tower and water treatment facilities.

- The Pretreatment (PT) Facility reported a net unfavorable SV of (\$1.6 million), mostly related to delays in the technical team's vessel testing at the National Energy Technology Laboratory, delay of simulant procurement for erosion/corrosion testing, and test completion team delays of simulant procurement and analysis. This was offset by testing equipment modifications being ahead of schedule, and a favorable plant equipment completion of final payments for two purchase orders.
- The High-Level Waste (HLW) Facility reported a net favorable SV of \$0.5 million, mostly related to a reporting adjustment associated with cold weather construction shutdown and work priority replanning, and plant equipment early completion of a shield door recovery plug test frame assembly.

For the November reporting period, a net favorable CV of approximately \$0.6 million was reported (meaning it cost a net \$0.6 million less than planned), primarily due to the following:

- LBL reported a net unfavorable CV of (\$1.7 million), mostly related to significantly more engineering hours than planned in support of the draft PDSA development (which included multiple review teams, comment resolution/incorporation, and compiling of the draft PDSA); additional resources to close out actions related to the lockout/tagout management suspension of work; additional construction scaffold efforts to support electrical, architectural, pipe, and melter direct scope; and recovery of a delayed construction trailer setup.
- Project Services reported a net favorable CV of \$0.5 million, primarily due to Information Systems and Technology equipment and software, and furniture procurement costs being deferred to later months, and a reduction in administrative services labor hours.
- HLW reported a favorable CV of \$0.4 million, mostly from expedient civil craft installation performance, staffing underruns in non-manual field support, and less support needed than planned in the distributable support account; an engineering underrun in the remote change high-efficiency particulate air (HEPA) filter qualification fabrication and testing effort; and procurement needing less direct labor and supplier quality (subcontract) resources than planned.
- PT reported a favorable CV of \$0.2 million, mostly related to technical teams staff efficiencies for deliverables related to pulse jet mixer (PJM) vessel mixing and control (T4) and reduced support from the national laboratories.

Through the current monthly reporting period, there are no SVs or CVs impacting current Consent Decree milestones.

Pretreatment Facility

Federal Project Director: Bill Hamel

Facility Federal Project Director: Wahed Abdul

Milestone	Title	Due Date	Status
D-00A-18	Complete Structural Steel Erection Below Elevation 56' in PT Facility	12/31/2009	Complete
D-00A-19	Complete Elevation 98' Concrete Floor Slab in PT Facility	12/31/2031	On Schedule
D-00A-13	Complete Installation of Pretreatment Feed Separation Vessels	12/31/2031	On Schedule
D-00A-14	PT Facility Construction Substantially Complete	12/31/2031	On Schedule
D-00A-15	Start PT Facility Cold Commissioning	12/31/2032	On Schedule
D-00A-16	PT Facility Hot Commissioning Complete	12/31/2033	On Schedule

PT = pretreatment.

The PT Facility will separate radioactive tank waste into high-level waste and low-activity waste fractions, and transfer each waste type to the respective vitrification facility for immobilization. As of September 2012, the PT Facility was 56 percent complete overall, with engineering design 85 percent complete, procurement 56 percent complete, construction 43 percent complete, and startup and commissioning 3 percent complete.

The DOE Office of River Protection (ORP) continues to focus on resolving five outstanding WTP technical issues as described in the Amended Consent Decree (i.e., preventing potential hydrogen buildup, preventing criticality, ensuring control of the pulse-jet mixer [PJMs], protecting against possible erosion and corrosion, and ensuring an adequate ventilation system), while performing hazards analyses, and completing safety evaluations for process systems in accordance with the revised PT Facility Three-Year Interim Work Plan.

The WTP Project has made sustained progress on resolution of the five outstanding technical issues. ORP attained resolution and closure of the nuclear safety technical issues, “Preventing Potential Hydrogen Build-Up” and “Preventing Criticality” during December 2016 (specifically, T1 in relation to hydrogen gas events in vessels; T2 in relation to criticality in PJM vessels; and T3 in relation to hydrogen in piping and ancillary vessels). Work will continue in 2017 on resolving the remaining technical issues. ORP has worked with BNI to develop closure packages for each technical issue, defining work scope, required deliverables, and technical issue closure criteria.

Significant Accomplishments during the Prior Three Months:

- ORP, in coordination with BNI and DOE Office of Environmental Management (EM) staff, provided the technical basis for resolution of the Defense Nuclear Facilities Safety Board (DNFSB) identified safety issue associated with hydrogen generation and control in PT Facility process vessels mixed with PJM (also referred to as ORP technical issue T1). The documents were provided to the DOE Assistant Secretary for Environmental Management (EM-1). Based on the extensive analyses completed, ORP considers the DNFSB safety issue regarding hydrogen retention and control and heat transfer in PJM vessels resolved.
- ORP, in coordination with BNI and EM staff, provided the technical basis to EM-1 for resolution of the DNFSB identified safety issue associated with criticality in PJM vessels (also referred to as ORP technical issue T2). The criticality issue was extensively investigated and does not represent a credible hazard based on the proposed controls in the WTP Preliminary Criticality Safety Evaluation Report, and a proposed strategy in an engineering study used to evaluate potential treatment of Hanford tank waste containing plutonium particulates and oxide. Based on the resolution of the DNFSB safety issue on criticality, ORP considers the criticality issue resolved and has determined WTP is ready to resume PT Facility and HLW Facility design completion in areas related to criticality design.
- ORP, in coordination with BNI and EM staff, provided the technical basis to EM-1 for resolution of the DNFSB identified safety issue associated with hydrogen in piping and ancillary vessels (HPAV) (also referred to as ORP technical issue T3). ORP has determined WTP is ready to resume PT Facility design completion in areas related to HPAV process piping.
- ORP and BNI initiated testing of a proposed PJM standard high-solids vessel (SHSV) design to replace a number of vessel designs in the PT Facility (this is in relation to resolving concerns over PJM vessel mixing and control, also referred to as ORP technical issue T4). A prototype of the 16-foot-diameter SHSV was commissioned on December 22, 2016. The scheduled testing will complete the final stage of PJM control system testing to support resolution of control issues applicable to PT Facility vessels with high solids concentrations and non-Newtonian slurries. This testing will demonstrate the required PJM control parameters and control approach to be used during the qualification of the design for the SHSV design. Testing is expected to be completed by December 2017 and will provide the required design and operations information to support completion of the PT Facility design.
- BNI issued a Basis of Design Change Notice establishing the erosion/corrosion basis of design parameters (this is in relation to resolving concerns over erosion/corrosion in piping and vessels, also referred to as ORP technical issue T5).
- BNI issued the SHSV Conceptual Design Plan to ORP for concurrence.

Significant Planned Activities in the Next Three Months:

- BNI to complete the erosion/corrosion synergistic test simulant qualification and final recipe.
- BNI will continue testing the SHSV design prototype, focusing on the PJM control system testing.
- ORP and BNI will continue efforts to resolve the spray leak methodology and sliding bed wear issues identified by the DNFSB in its *26th Annual Report to Congress*, dated March 2016. Resolution of these issues is significant in supporting ORP's decision to resume production engineering at the PT Facility.
- BNI to start the full-scale vessel operational set point test.
- BNI to complete non-Newtonian blend testing at the National Engineering Technology Laboratory.
- BNI to update the localized corrosion test basis document update.
- ORP to review the SHSV Conceptual Design Plan.

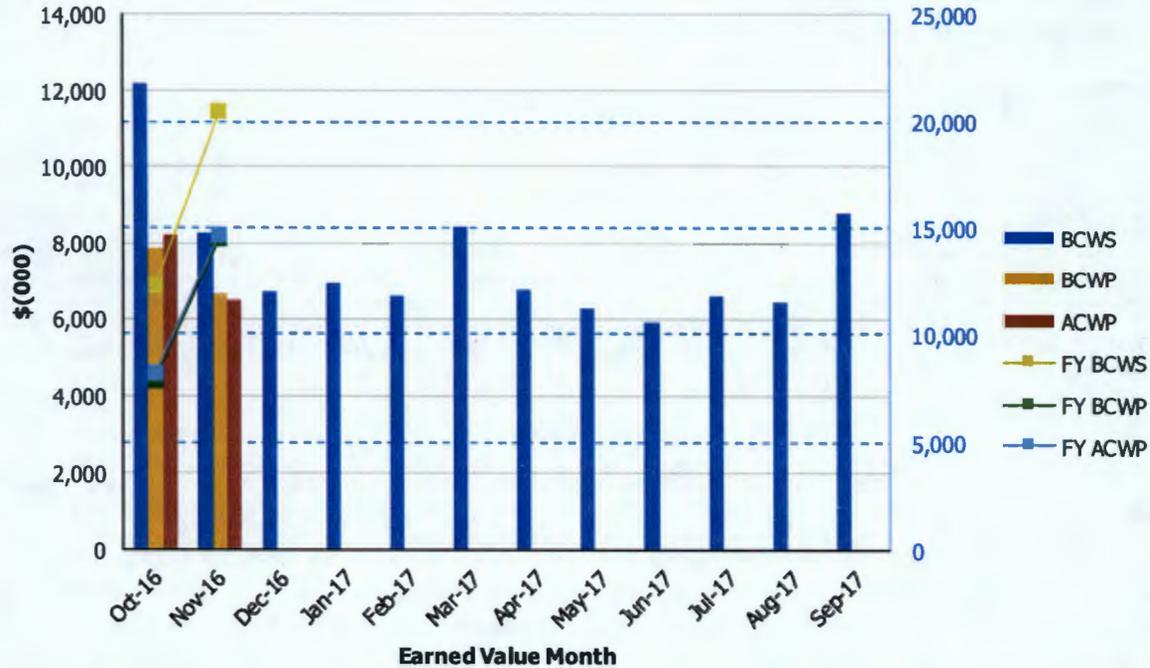
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2017 Earned Value Data

Data as of: November 2016

**River Protection Project
Pretreatment Facility (WBS 1.01)**

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2016	\$12,193	\$7,845	\$8,196	0.64	0.96	\$12,193	\$7,845	\$8,196	0.64	0.96
Nov 2016	\$8,254	\$6,654	\$6,487	0.81	1.03	\$20,447	\$14,500	\$14,684	0.71	0.99
Dec 2016	\$6,683									
Jan 2017	\$6,910									
Feb 2017	\$6,583									
Mar 2017	\$8,413									
Apr 2017	\$6,775									
May 2017	\$6,252									
Jun 2017	\$5,904									
Jul 2017	\$6,608									
Aug 2017	\$6,410									
Sep 2017	\$8,772									

PTD	\$1,868,724	\$1,864,741	\$1,842,256	1.00	1.01
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High-Level Waste Facility

Federal Project Director: Bill Hamel

Facility Federal Project Director: Wahed Abdul

Milestone	Title	Due Date	Status
D-00A-20	Complete Construction of Structural Steel to 14' in HLW Facility	12/31/2010	Complete
D-00A-21	Complete Construction of Structural Steel to 37' in HLW Facility	12/31/2012	Complete
D-00A-02	HLW Facility Construction Substantially Complete	12/31/2030	On Schedule
D-00A-03	Start HLW Facility Cold Commissioning	06/30/2032	On Schedule
D-00A-04	HLW Facility Hot Commissioning Complete	12/31/2033	On Schedule

HLW = high-level waste.

The HLW Facility will receive the separated high-level waste concentrate from the PT Facility. This concentrate will be blended with glass formers, converted into molten glass in one of the two HLW Facility melters, and then poured into cylindrical stainless steel canisters. After cooling, the canisters will be sealed and decontaminated before shipping to interim storage.

As of September 2012, the HLW Facility was 62 percent complete overall, with engineering design 89 percent complete, procurement 81 percent complete, construction 43 percent complete, and startup and commissioning 4 percent complete. Physical percent complete for the HLW and PT facilities were frozen as of September 2012, pending development of a revised baseline to address technical and design issues.

Work on the HLW Facility is now being performed in accordance with the Fiscal Year (FY) 2017–FY 2021 Interim Work Plan. BNI is still working under a limited construction and procurement authorization, and efforts are focused on completing activities required to obtain full-production authorization from ORP. BNI has submitted a facility completion plan identifying the strategy for obtaining full authorization to complete engineering, procurement, and construction of the HLW Facility, which is currently under review by ORP.

BNI Engineering is focused on activities to support implementation of technical core team recommendations and development of engineering studies and analysis to disposition design and operability review comments. Draft Phase II of the HLW Facility melter offgas treatment process/process vessel vent engineering study is undergoing review and comment resolution between ORP and BNI. Design of the remaining portions of the radioactive liquid disposal (RLD) system, including engineering documents to support material procurement and fabrication of vessels RLD-7 and RLD-8, is in progress.

The HLW Facility PDSA update to align design and the safety basis was submitted to ORP in October 2016. The ORP-chartered Safety Basis Review Team provided initial comments, and

will work with BNI over the next few months on the comment resolution for formal submittal of the PDSA to DOE for approval. This work may get delayed due to the LBL PDSA review and approval of that is a higher priority at this time. Once the PDSA is approved, system design requirements will be confirmed to ensure facility design is aligned with the nuclear safety basis.

HEPA filter media design is now complete. These filter designs were evaluated to ensure the qualified filters support the needs for the HLW Facility, along with LBL. Nuclear Quality Assurance-1 (NQA-1) qualification testing of the full-scale filter designs at Mississippi State University has been completed. All testing of the filter “Design 4” for the safe-change and remote change housings have been completed successfully. The final report from the results of the testing is planned to be issued in early 2017.

Significant Accomplishments during the Prior Three Months:

- ORP provided comments to BNI on the submitted HLW Facility Completion Plan for resolution.
- BNI submitted the HLW canister receipt handling system engineering study for review.
- BNI completed NQA-1 HEPA filter qualification testing of the “Design 4” safe-change and remote change filters.
- BNI issued the melter cave support handling engineering study.
- BNI provided the draft HLW Facility offgas process system Phase II engineering study for ORP review.
- BNI issued the radioactive solid waste handling system operability engineering study.
- ORP is in the process of reviewing the draft HLW PDSA update submitted by BNI.
- BNI released material procurement and fabrication of RLD-8. RLD-8 is located in the wet process cell and must be installed prior to concrete slab placement to support roof installation.

Significant Planned Activities in the Next Three Months:

- BNI to issue the reports associated with the full-scale testing and final selection of HEPA filters supporting the ventilation and offgas systems of HLW and LBL facilities.
- BNI to release material procurement and fabrication for vessel RLD-7.
- BNI to issue the offgas treatment process Phase II engineering study.
- ORP to complete review of the draft PDSA update.
- BNI to complete the disposition of design and operability comments and issue final report to DOE.
- DOE to approve the HLW Facility completion plan.
- BNI to continue civil build-out of the HLW Facility focusing on weathering in the building.

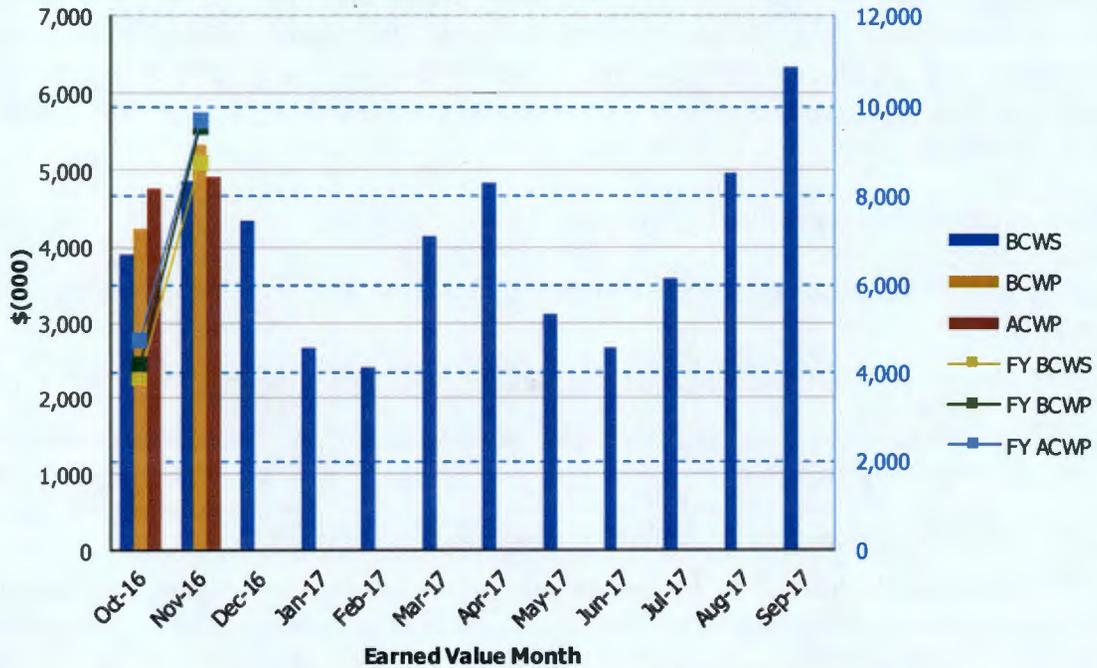
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2017 Earned Value Data

Data as of: November 2016

**River Protection Project
High-Level Waste Facility (WBS 1.03)**

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2016	\$3,910	\$4,231	\$4,761	1.08	0.89	\$3,910	\$4,231	\$4,761	1.08	0.89
Nov 2016	\$4,855	\$5,337	\$4,930	1.10	1.08	\$8,766	\$9,568	\$9,692	1.09	0.99
Dec 2016	\$4,349									
Jan 2017	\$2,669									
Feb 2017	\$2,401									
Mar 2017	\$4,144									
Apr 2017	\$4,847									
May 2017	\$3,118									
Jun 2017	\$2,668									
Jul 2017	\$3,585									
Aug 2017	\$4,960									
Sep 2017	\$6,339									

PTD	\$1,291,797	\$1,291,149	\$1,270,687	1.00	1.02
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| ACWP = actual cost of work performed. | CTD = contract to date. |
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| CPI = cost performance index. | SPI = schedule performance index. |

Low-Activity Waste Facility

Federal Project Director: Bill Hamel

Facility Federal Project Director: Jeff Bruggeman

Milestone	Title	Due Date	Status
D-00A-07	LAW Facility Construction Substantially Complete	12/31/2020	On Schedule
D-00A-08	Start LAW Facility Cold Commissioning	12/31/2022	On Schedule
D-00A-09	LAW Facility Hot Commissioning Complete	12/31/2023	On Schedule

LAW = low-activity waste.

The LAW Facility will process concentrated low-activity waste, which will be mixed with silica and other glass-forming materials. The mixture will be fed into the LAW Facility's two melters at a design capacity of 30 metric tons per day, heated to 2,100°F, and vitrified into glass. The 300-ton melters are approximately 20 feet by 30 feet and 16 feet high. The glass mixture will then be poured into stainless steel containers, which are 4 feet in diameter, 7 feet tall, and weigh more than 7 tons. These containers are anticipated to be disposed of on the Hanford Site in the Integrated Disposal Facility. As of November 2016, the LAW Facility was 58 percent complete overall, with engineering design 79 percent complete, procurement 74 percent complete, construction 82 percent complete, and startup and commissioning 8 percent complete.

Significant Accomplishments during the Prior Three Months:

- ORP and BNI received approval of the melter dangerous waste permit from the Washington State Department of Ecology (Ecology).
- BNI completed redesign of the melter jack-bolts as progress continues on completing the melters.
- BNI installed 230 linear feet of process piping.
- BNI installed 1,420 linear feet of conduit and pulled 12,140 linear feet of cable.
- BNI installed 79 process area penetration seals.
- BNI set the caustic scrubber vessel in its final position in mid-November.
- BNI completed base frame modifications on both melters.
- BNI installed and tested melter bubblers, and started welding on melter shield lids.
- BNI completed radiographic testing of wet electrostatic precipitator nozzles to verify adequacy of welds.

Significant Planned Activities in the Next Three Months:

- BNI to weld shield lid onto melter #2.

- BNI to deliver and install melter offgas caustic scrubber internals.
- ORP to evaluate preliminary hazard category calculation for LAW Facility.
- BNI to continue installation of LAW Facility secondary offgas/vessel vent process system pipe tie-ins between thermal catalytic oxidizer and ammonia skid.
- BNI to develop hazard identification checklist, what-if tables, and process hazard analysis events for accident scenarios to support PDSA update development.

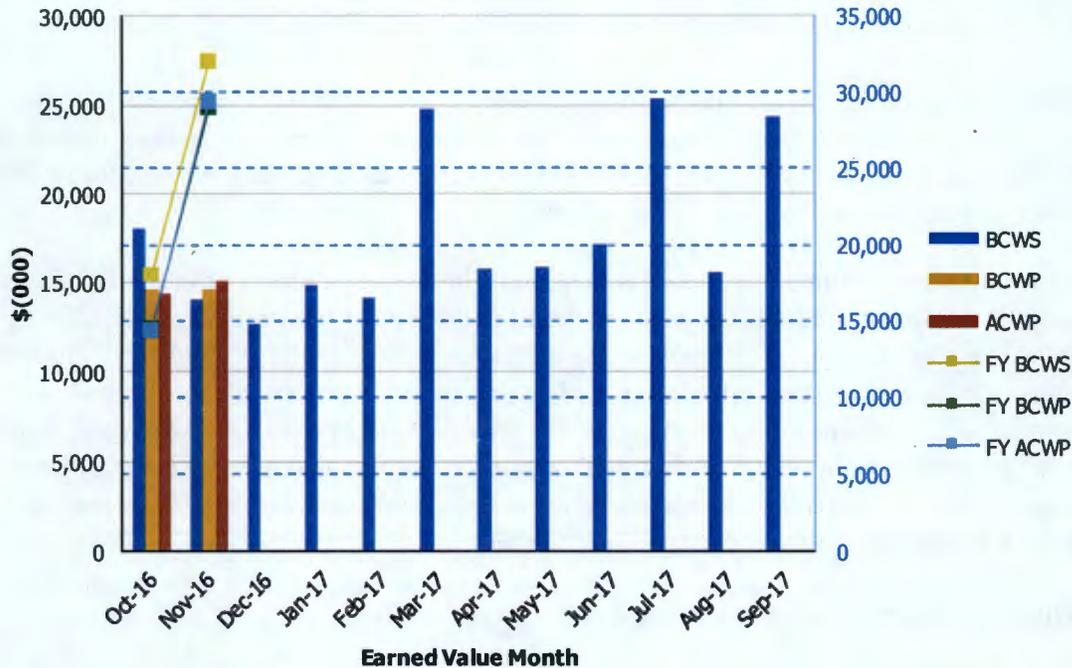
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2017 Earned Value Data

Data as of: November 2016

**River Protection Project
Low-Activity Waste Facility (WBS 1.02)**

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2016	\$18,055	\$14,539	\$14,396	0.81	1.01	\$18,055	\$14,539	\$14,396	0.81	1.01
Nov 2016	\$14,013	\$14,564	\$15,062	1.04	0.97	\$32,068	\$29,102	\$29,458	0.91	0.99
Dec 2016	\$12,629									
Jan 2017	\$14,847									
Feb 2017	\$14,082									
Mar 2017	\$24,755									
Apr 2017	\$15,830									
May 2017	\$15,927									
Jun 2017	\$17,124									
Jul 2017	\$25,311									
Aug 2017	\$15,594									
Sep 2017	\$24,330									

PTD	\$1,481,098	\$1,467,295	\$1,465,651	0.99	1.00
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- FY = fiscal year.
- SPI = schedule performance index.

Balance of Facilities

Federal Project Director: Bill Hamel

Facility Federal Project Director: Jason Young

Milestone	Title	Due Date	Status
D-00A-12	Steam Plant Construction Complete	12/31/2012	Complete

BOF will provide services and utilities to support operation of the main production facilities: PT, HLW, LAW, and LAB. As of November 2016, BOF was 62 percent complete overall, with engineering design 81 percent complete, procurement 78 percent complete, construction 88 percent complete, and startup and commissioning 22 percent complete.

Engineering activities continue to support the DFLAW initiative. Current efforts are focused on progressing the design of the Effluent Management Facility (EMF), supporting the EMF dangerous waste permit, supporting EMF procurement activities, and providing field support for BOF startup activities. Construction efforts are focused on rebar placement for the EMF walls, and completion of the remaining items required for energization of the BOF switchgear building from the WTP switchgear building. Additional construction punchlist activities are underway to support turnover of the Water Treatment Facility and Cooling Tower Facility to the startup organization for component-level testing.

Significant Accomplishments during the Prior Three Months:

- Cathodic protection system turned over to startup.
- EMF Secondary Containment Dangerous Waste Permit package formally submitted.
- BNI completed the acceptance test report for switchgear Building 87 and switchgear Building 91.
- BNI completed the functional review of installation of the fire detection and alarm system fire detection equipment in the Water Treatment Facility (Building 86) and Cooling Tower Facility (Building 83).
- BNI completed rectifier installation as part of the WTP cathodic protection system upgrade effort.
- BNI initiated startup testing for the cathodic protection system rectifiers.
- ORP and Ecology provided informal comments to BNI on the EMF Underground Transfer Line Permit package.

Significant Planned Activities in the Next Three Months:

- BNI to complete energized testing in support of Phase 2 energization to BOF switchgear Building 91.
- BNI to prepare EMF evaporator fabrication material requisition for procurement.

- BNI to implement PDSA Condition of Approval 2.
- BNI to complete placement of the construction aids (soldier piles) that support excavation of EMF low point drain.
- BNI to disposition comments received from ORP and Ecology, and prepare EMF Underground Transfer Line Permit package for formal submittal.

EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2017 Earned Value Data

Data as of: November 2016

**River Protection Project
Balance of Facilities (WBS 1.05)**

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2016	\$5,977	\$5,519	\$6,535	0.92	0.84	\$5,977	\$5,519	\$6,535	0.92	0.84
Nov 2016	\$5,773	\$5,120	\$6,338	0.89	0.81	\$11,751	\$10,640	\$12,874	0.91	0.83
Dec 2016	\$7,799									
Jan 2017	\$5,803									
Feb 2017	\$6,572									
Mar 2017	\$10,053									
Apr 2017	\$6,661									
May 2017	\$6,127									
Jun 2017	\$5,292									
Jul 2017	\$5,995									
Aug 2017	\$6,367									
Sep 2017	\$8,045									

PTD	\$539,357	\$532,433	\$536,137	0.99	0.99
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Analytical Laboratory

Federal Project Director: Bill Hamel

Facility Federal Project Director: Jason Young

Milestone	Title	Due Date	Status
D-00A-05	LAB Construction Substantially Complete	12/31/2012	Complete

LAB = analytical laboratory.

The LAB will support WTP operations by analyzing feed, vitrified waste, and effluent streams. As of November 2016, the LAB was 62 percent complete overall, with engineering design 81 percent complete, procurement 88 percent complete, construction 95 percent complete, and startup and commissioning 15 percent complete.

During this reporting period, efforts were focused on evaluating options for the C5 ventilation system (C5V) in the DFLAW configuration, location of in-town laboratory options, and finalizing the trend for delaying laboratory startup efforts.

Significant Accomplishments during the Prior Three Months:

- BNI completed installation of the test engineers' workstation and turned equipment over to startup.
- BNI completed turnover of the fire protection water system in support of the test engineers' workstation to startup.
- BNI completed turnover of the process control system in support of the test engineers' workstation to startup.
- BNI continued final wall and floor coatings.
- BNI continued development of procedures for the WTP analytical methods development process.
- BNI received the replacement heating, ventilation, and air-conditioning (HVAC) condenser.

Significant Planned Activities in the Next Three Months:

- ORP and BNI to reach an agreement on proposed C5V modifications.
- BNI to issue the temporary laboratory space request for proposal, which allows for earlier laboratory methods development and training to ensure laboratory staff are ready at the start of commissioning.
- BNI to continue testing control and monitoring systems in the test engineers' workstation to support the nonradioactive liquid waste disposal system functional tests.
- BNI to award procurement for toxicity refrigerant monitor needed for beneficial occupancy.

- BNI to turn CIV ventilation system over to startup.
- BNI to install the replacement HVAC condenser.

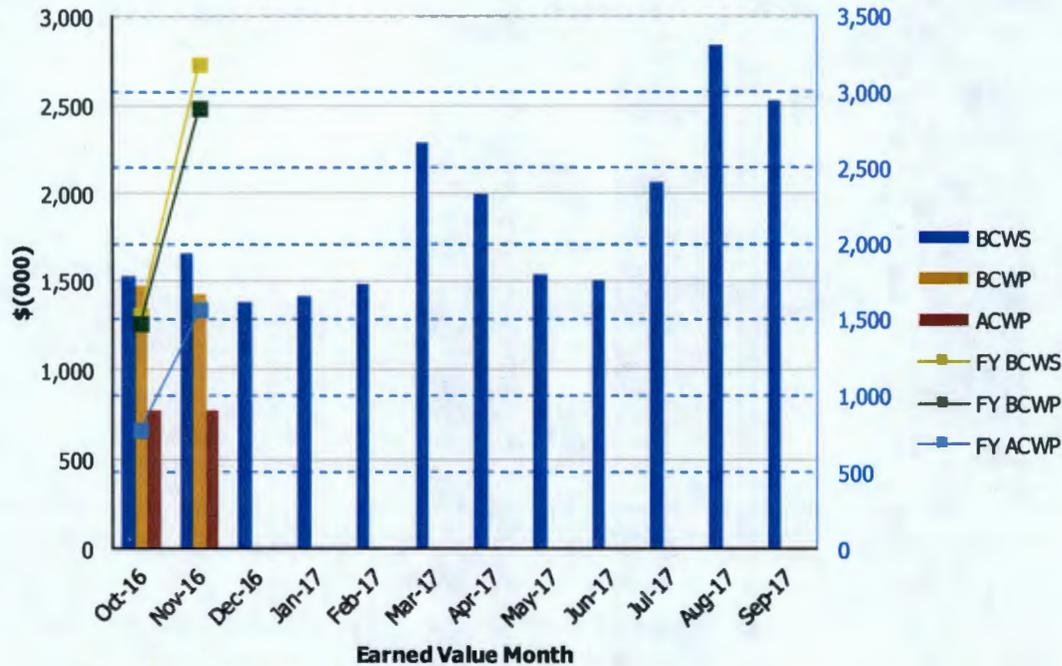
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2017 Earned Value Data

Data as of: November 2016

**River Protection Project
Analytical Laboratory (WBS 1.06)**

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2016	\$1,521	\$1,470	\$776	0.97	1.89	\$1,521	\$1,470	\$776	0.97	1.89
Nov 2016	\$1,661	\$1,426	\$777	0.86	1.83	\$3,182	\$2,896	\$1,553	0.91	1.86
Dec 2016	\$1,375									
Jan 2017	\$1,415									
Feb 2017	\$1,475									
Mar 2017	\$2,288									
Apr 2017	\$1,996									
May 2017	\$1,540									
Jun 2017	\$1,498									
Jul 2017	\$2,068									
Aug 2017	\$2,837									
Sep 2017	\$2,525									

PTD	\$341,788	\$339,470	\$330,578	0.99	1.03
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Waste Treatment Plant Project Percent Complete Status (Table)

Waste Treatment Plant Project - (LBL/Project Services) Percent Complete Status
Through November 2016

(Dollars - Millions)	Overall Facility Percent Complete Unallocated Dollars			Design/Engineering Unallocated Dollars			Procurement Unallocated Dollars			Construction Unallocated Dollars			Startup & Plant Operations Unallocated Dollars			Project Management & Shared Services Unallocated Dollars		
	Performance Measurement Baseline (PMB)	Budgeted Cost of Work Performed (BCWP)	% Complete	Performance Measurement Baseline (PMB)	Budgeted Cost of Work Performed (BCWP)	% Complete	Performance Measurement Baseline (PMB)	Budgeted Cost of Work Performed (BCWP)	% Complete	Performance Measurement Baseline (PMB)	Budgeted Cost of Work Performed (BCWP)	% Complete	Performance Measurement Baseline (PMB)	Budgeted Cost of Work Performed (BCWP)	% Complete	Performance Measurement Baseline (PMB)	Budgeted Cost of Work Performed (BCWP)	% Complete
Facilities																		
Low-Activity Waste	2,307.2	1,338.6	58%	552.0	438.5	79%	374.0	276.9	74%	685.9	563.9	82%	691.2	55.1	8%	4.0	4.0	100%
Balance of Facilities	760.4	470.3	62%	153.1	124.3	81%	72.6	56.9	78%	260.7	229.7	88%	273.5	58.9	22%	0.5	0.5	100%
Analytical Lab	523.4	326.9	62%	107.3	86.4	81%	65.6	57.4	88%	162.7	154.2	95%	187.3	28.4	15%	0.5	0.5	100%
Direct Feed LAW	393.0	84.6	22%	95.3	54.1	57%	56.6	4.5	8%	232.2	22.1	10%	0.0	0.0	0%	8.9	3.9	43%
LBL Facility Services	609.3	159.9	26%	0.0	0.0	0%	60.5	22.2	37%	132.3	36.4	27%	255.1	53.2	21%	161.4	48.2	30%
Total LBL	4,593.3	2,380.3	52%	907.7	703.4	77%	629.3	418.0	66%	1,473.8	1,006.3	68%	1,407.2	195.6	14%	175.3	57.0	33%
Project Services	1,021.5	390.0	38%	129.7	56.0	43%	74.2	35.9	48%	118.2	71.0	60%	1.7	1.7	100%	697.7	225.5	32%
Total Project Services	1,021.5	390.0	38%	129.7	56.0	43%	74.2	35.9	48%	118.2	71.0	60%	1.7	1.7	100%	697.7	225.5	32%
Total LBL, DFLAW & Project Services	5,614.8	2,770.4	49%	1,037.3	759.3	73%	703.5	453.8	65%	1,592.0	1,077.3	68%	1,408.9	197.3	14%	873.1	282.5	32%
PT/HLW/SS Percent Complete Status Frozen as of September 2012 (due to project rebaselining efforts)																		
High-Level Waste	1,478.6	922.1	62%	364.4	325.2	89%	433.9	349.4	81%	561.1	243.2	43%	119.2	4.4	4%	n/a	n/a	n/a
Pretreatment	2,517.3	1,410.5	56%	761.7	645.8	85%	679.9	380.4	56%	890.0	378.6	43%	185.8	5.6	3%	n/a	n/a	n/a
Shared Services	4,726.9	3,632.6	77%	1,047.0	977.9	93%	451.7	395.0	87%	1,436.5	1,143.0	80%	453.5	133.2	29%	1,338.1	983.5	73%
Total HLW/PT/SS	8,722.8	5,965.2	68%	2,173.1	1,948.9	90%	1,565.5	1,124.8	72%	2,887.6	1,764.8	61%	758.5	143.2	19%	1,338.1	983.5	73%
Undistributed Budget	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total WTP	14,337.6	8,735.6	61%	3,210.4	2,708.2	84%	2,269.0	1,578.6	70%	4,479.6	2,842.1	63%	2,167.4	340.5	16%	2,211.2	1,266.0	57%

Source: Preliminary WTP Contract Performance Report - Format 1, Data for November 2016

Note: In September 2012, the LBL Replan was incorporated into the project OTB baseline resulting in increases/decreases to the LBL facility budgets, which correspondingly increased/decreased the facility/function-to-date percent complete values. In October 2012, the PT/HLW/SS Interim Work Plan was incorporated into the project OTB baseline resulting in decreases to the PT/HLW/SS facility budgets, this was due to a work scope shift from the Distributed budget to UB. Percent Complete Values shown for PT, HLW and SS have been frozen with the September 2012 values due to the Interim Work Plan and budgets being moved into UB. UB value for the project for PT/HLW/SS is \$2,014M. The percent complete values for the Total WTP are the current total LBL BCWP added to the frozen HLW/PT/SS BCWP values. In March 2014, Project Controls and Project Management work scope was moved out of Shared Services control accounts into the facilities with new control accounts being set up in the facilities. These will now be seen under Project Management/Shared Services by facility. The Shared Services PMB value has not been changed to reflect this change due to the freeze on HLW/PT and SS and the budgets remaining in UB. October 2014 data reflects the incorporation of Direct Feed LAW and the split of Shared Services into LBL Facility Services and Project Services. March 2016 LBL percent complete data is a total of LAW-BOF-LAB-DFLAW and LBL Facility Services. The Project Services Allocation account (zPSA), as shown on the CPR Format 1, is not added to LBL for percent complete purposes.