

Final

Office of River Protection
Consent Decree*Monthly Report
September 2016

*08-5085-FVS (October 2010)

*2:08-CV-5085-RMP (March and April 2016)

Office of River Protection**Consent Decree 08-5085-FVS and Amended Consent Decrees 2:08-CV-5085-RMP****Project Earned Value Management System reflects July 2016 information**

Page	Topic	Leads
4	CD Milestone Statistics/Status	Bryan Trimberger/Dan McDonald/Jeff Lyon
6	Consent Decree Reports/Reviews	
7	Spare Reboiler Requirement Status	Paul Hernandez
8	Single-Shell Tank Retrieval Program D-16B-01, D-16B-02, D-16B-03	Chris Kemp/Jeff Lyon
10	Tank Waste Retrieval Work Plan Status Consent Decree Appendix C	Chris Kemp/Jeff Lyon
14	Waste Treatment and Immobilization Plant Project D-00A-06, D-00A-17, D-00A-01	Joni Grindstaff/Dan McDonald
18	Pretreatment Facility D-00A-18, D-00A-19, D-00A-13, D-00A-14, D-00A-15, D-00A-16	Dan Knight/Dan McDonald
21	High-Level Waste Facility D-00A-20, D-00A-21, D-00A-02, D-00A-03	Wahed Abdul/Dan McDonald
25	Low-Activity Waste Facility D-00A-07, D-00A-08, D-00A-09	Jeff Bruggeman/Dan McDonald
28	Balance of Facilities D-00A-12	Jason Young/Dan McDonald
31	Analytical Laboratory D-00A-005	Jennifer Sands/Dan McDonald
33	Waste Treatment Plant Project Percent Complete Status (Table)	

CD = Consent Decree

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. Steven Chu Secretary of the United States Dept. of Energy</i> , Case No. CV-08-5085-FVS (October 25, 2010); <i>as amended</i> , Amended Consent Decree, Case No. CV-08-5085-RMP (March 11, 2016); <i>as amended</i> , Second Amended Consent Decree, Case No. CV-08-5085-RMP (April 12, 2016).
CV	cost variance
DFLAW	direct-feed low-activity waste
DOE	U.S. Department of Energy
EMF	Effluent Management Facility
ERSS	extended reach sluicer system
FY	fiscal year
HAMTC	Hanford Atomic Metals Trades Council
HEPA	high-efficiency particulate air
HIHTL	hose-in-hose transfer line
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
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
SHSVD	standard high-solids vessel design
SV	schedule variance
TCO	thermal catalytic oxidizer
WRPS	Washington River Protection <i>Solutions</i> LLC
WTP	Waste Treatment and Immobilization Plant

CD 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		On Schedule
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
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		On Schedule
Fiscal Year 2030				
D-00A-02 Interim	HLW Facility Construction Substantially Complete	12/31/2030		On Schedule
Fiscal Year 2031				
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

Milestone	Title	Due Date	Completion Date	Status
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 Plan**	12/31/2036		On Schedule

* Milestones B-1, B-2, and B-3 narrative changed in accordance with 2016 amended Consent Decree (CD). Per this amendment, there is no longer a milestone B-4.

** Error in the CD: Last word of the D-00A-01 milestone should be Plant

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: September 25, 2016, Status: On Schedule.

D-006-00-B, Meet Approximately Every Three Years after Entry of Decree to review requirements of the Consent Decree, Due: October 25, 2016, Status: On Schedule.

Spare Reboiler Requirement Status

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

* Error in the Consent Decree, part should be identified as E-A-1.

**Consent Decree 08-5085-FVS, Part IV B.5 as amended by No. 2:08-CV-5085-RMP dated April 12, 2016.

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 (as required *per* 2016 amended Consent Decree (CD) dated April 12, 2016, Items, IV-C.1.h, and IV-C.2):

- Since issuance of the March 11, 2016, Amended Consent Decree, the U.S. Department of Energy (DOE) has provided the contractor 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 the Washington River Protection *Solutions* LLC (WRPS) to proceed by awarding a not-to-exceed contract action. WRPS is currently underway generating a procurement specification for the new spare 242-A Evaporator reboiler. The current procurement strategy is to award a design/build procurement contract with a vendor no later than December 21, 2016.
- The material request for procurement of the new spare 242-A Evaporator reboiler has been submitted for proposal. Requests for proposal are due September 26, 2016.

Single-Shell Tank Retrieval Program

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*	On Schedule
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	On Schedule

* Pursuant to Section IV-B-7 of the Consent Decree, the U.S. Department of Energy (DOE) must submit to the Washington State Department of Ecology (Ecology) a written certification DOE has completed retrieval of a tank in accordance with the requirements of Appendix C, Part 1, of the Consent Decree.

SST = single-shell tank.
WMA-C = C Farm waste management area.

Significant Accomplishments during the Prior Three Months:

- Completed post-retrieval sampling of Tank 241-C-111.
- Began development of Tank C-111 Retrieval Data Report.
- Submitted C-111 retrieval completion certification to Ecology.
- Completed cold operational acceptance testing of POR126 exhaustor system and prepared for hot operational acceptance testing.
- Received two out of the six extended reach sluicing systems (ERSS) for AX-102/104.
- Completed two out of the four planned pit cleanout at AX-102/104 for FY 2016.
- Completed concrete foundation pour on the new air and service water building (A-285) and began building erection.
- Completed AX-2707 fencing and gate upgrades.
- Removal of the C-112 hose-in-hose transfer line (HIHTL) was completed. This completes the FY 2016 HIHTL work scope.
- Received ERSS No. 1 and No. 2 for AX-104.

Significant Planned Activities in the Next Three Months:

- Submit retrieval data report for Tank 241-C-102

- Negotiate contract proposal for installing and performing the third retrieval technology at Tank C-105
- Complete Tank C-105 Mobile Arm Retrieval System-Vacuum-V (MARS-V) containment box disassembly
- Complete removal of Tank C-105 MARS-V in-tank equipment
- Complete Tank C-105 modified sluicing system design
- Complete refurbishment of C-105 pits to support ERSS installation next year
- Complete two additional planned pit cleanouts at AX-102/104
- Receive the four remaining ERSSs for AX-102/104
- Complete installation of the A-285 service building.

Issues:

- The Hanford Atomic Metal Trades Council (HAMTC) stop work issued on July 11, 2016, and subsequent Request for Preliminary Injunction filed by the State of Washington, et al. (Case 4:15-cv-05086-TOR) has delayed field work at the AX and C farms. On July 21, 2016, the Washington State Attorney General and Citizens (Local Union 598 and Hanford Challenge) filed motions for a preliminary injunction in federal court seeking, among other things, all work inside the perimeter fences of any tank farm be performed while wearing mandatory supplied air. Additional controls may be required (e.g., back shift or weekends work only, additional monitoring, etc.), which is slowing the pace of work being accomplished. For example the C-105 Mobile Arm Retrieval System-Sluicing removal has been slowed. Also the AX-102 and AX-104 retrieval construction (removal of legacy equipment) is affected by not being able to operate the tank-specific ventilation system.

Tank Waste Retrieval Work Plan Status

Tank	TWRWP	Expected Revisions	First Retrieval Technology	Second Technology	Third Technology
AX-101	RPP-RPT-58932, Draft	Initial Approval	Sluicing with ERSS	High-Pressure Water deployed with ERSS	-
AX-102	RPP-RPT-58933, Draft	Initial Approval	Sluicing with ERSS	High-Pressure Water deployed with ERSS	-
AX-103	RPP-RPT-58934, Draft	Initial Approval	Sluicing with ERSS	High-Pressure Water deployed with ERSS	-
AX-104	RPP-RPT-58935, Draft	Initial Approval	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
C-111	RPP-37739, Rev. 2	Complete	Modified Sluicing	High pressure water using the ERSS	Chemical Dissolution

Tank	TWRWP	Expected Revisions	First Retrieval Technology	Second Technology	Third Technology
					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:

- Approved modification to RPP-22520, 241-C-101, and 241-C-105, *Tanks Waste Retrieval Work Plan*, to include a third retrieval technology for C-105 retrieval on July 20, 2016.

Significant Planned Activities in the Next Three Months:

- Finalize AX Farm tank waste retrieval work plans.

Issues:

- None.

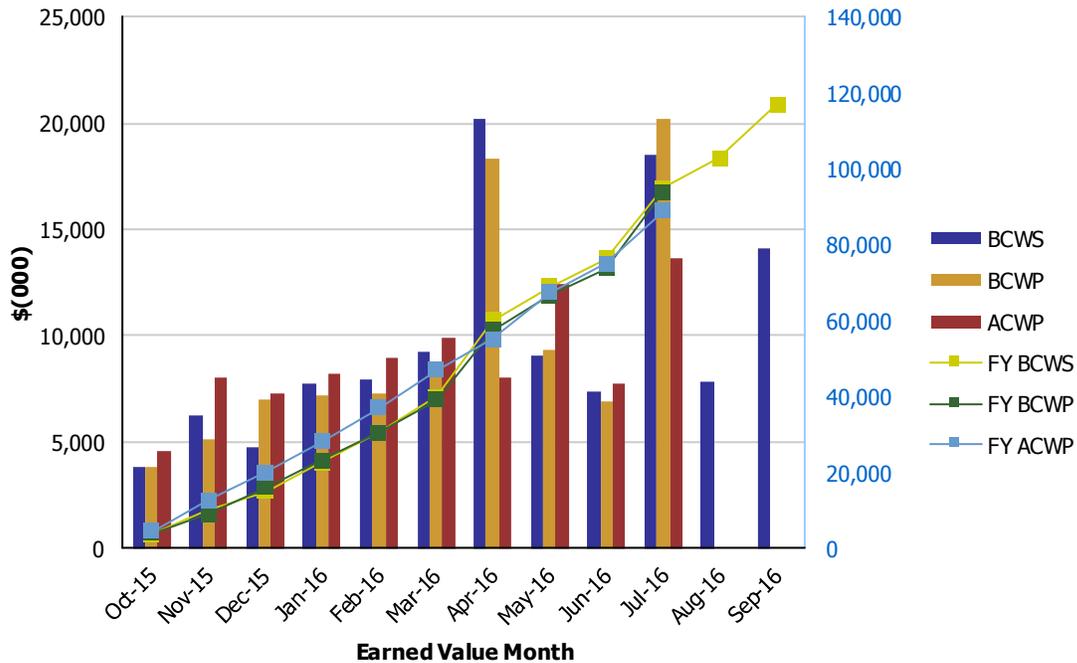
EXC-01a: Fiscal Year Cost and Schedule Report

Earned Value Data: Fiscal Year 2016

July-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 2015	\$3,770	\$3,814	\$4,560	1.01	0.84	\$3,770	\$3,814	\$4,560	1.01	0.84
Nov 2015	\$6,282	\$5,131	\$8,006	0.82	0.64	\$10,052	\$8,946	\$12,566	0.89	0.71
Dec 2015	\$4,769	\$6,970	\$7,255	1.46	0.96	\$14,821	\$15,915	\$19,821	1.07	0.80
Jan 2016	\$7,702	\$7,214	\$8,233	0.94	0.88	\$22,522	\$23,130	\$28,053	1.03	0.82
Feb 2016	\$7,948	\$7,288	\$8,959	0.92	0.81	\$30,470	\$30,417	\$37,012	1.00	0.82
Mar 2016	\$9,249	\$8,693	\$9,857	0.94	0.88	\$39,719	\$39,111	\$46,869	0.98	0.83
Apr 2016	\$20,237	\$18,288	\$8,046	0.90	2.27	\$59,956	\$57,399	\$54,916	0.96	1.05
May 2016	\$9,013	\$9,299	\$12,417	1.03	0.75	\$68,970	\$66,698	\$67,333	0.97	0.99
Jun 2016	\$7,387	\$6,885	\$7,713	0.93	0.89	\$76,357	\$73,584	\$75,045	0.96	0.98
Jul 2016	\$18,511	\$20,234	\$13,683	1.09	1.48	\$94,867	\$93,817	\$88,728	0.99	1.06
Aug 2016	\$7,830					\$102,697				
Sep 2016	\$14,069					\$116,766				

CTD	\$687,345	\$679,044	\$698,701	0.99	0.97
-----	-----------	-----------	-----------	------	------

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 July variances have a minimal variance on Consent Decree and Tri-Party Agreement milestones (M-045-15) at A-103 for tank retrieval.

The current month **favorable** schedule variance (SV) of \$1,723K is due to:

- ***Schedule Recovery***: AX Farm procurements were previously re-planned due to field construction slips and funding challenges. Two out of the six ERSSs for AX-102/104 arrived this past month. The remaining four ERSSs are scheduled to be delivered prior to the end of September. The water supply demister required for retrieval operations at AX Farm was also delivered during July. This positive variance continues to support the completion of projects B-1 and B-3 of the Consent Decree milestones.

The current month **favorable** cost variance (CV) of \$6,551K is due to:

- Contract Modification 386 (FY 2016 Vapor Impacts Implementation) was implemented during July, which resulted in a point adjustment for FY 2016 work scope that was or continues to be impacted by tank farm vapors. This adjustment provides cost relief to control accounts affected/impacted by vapors and required additional health and safety controls (self-contained breathing apparatus).

Waste Treatment and Immobilization Plant Project

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 2,975 full-time equivalent contractor (Bechtel National, Inc. [BNI]) and subcontractor personnel. This includes 618 craft, 479 non-manual, and 143 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 low-activity waste [DFLAW] and LBL facility services). As of July 2016, LBL facilities were 49 percent complete, design and engineering was 75 percent complete, procurement was 64 percent complete, construction was 66 percent complete, and startup and commissioning was 11 percent complete.

For the project to manage to the DFLAW initiative, the project is required to update the performance baseline to reflect the new work activities. This requires a change to BNI's Contract with the U.S. Department of Energy (DOE), Office of River Protection (ORP). The WTP team has been working with BNI to negotiate the changes in work scope into the contract.

Significant Accomplishments during the Prior Three Months:

- Contract modifications to reflect the DFLAW initiative is in Business Clearance at the Environment Management Consolidated Business Center.

Significant Planned Activities in the Next Three Months:

- Contract negotiations with BNI to definitize the new LBL/DFLAW scope into the contract have been ongoing and are expected to be completed in the fall of 2016.
- ORP will present the new baseline change proposal to the Chief Executive for Project Management seeking approval of the LBL/DFLAW baseline change proposal for the WTP Project.

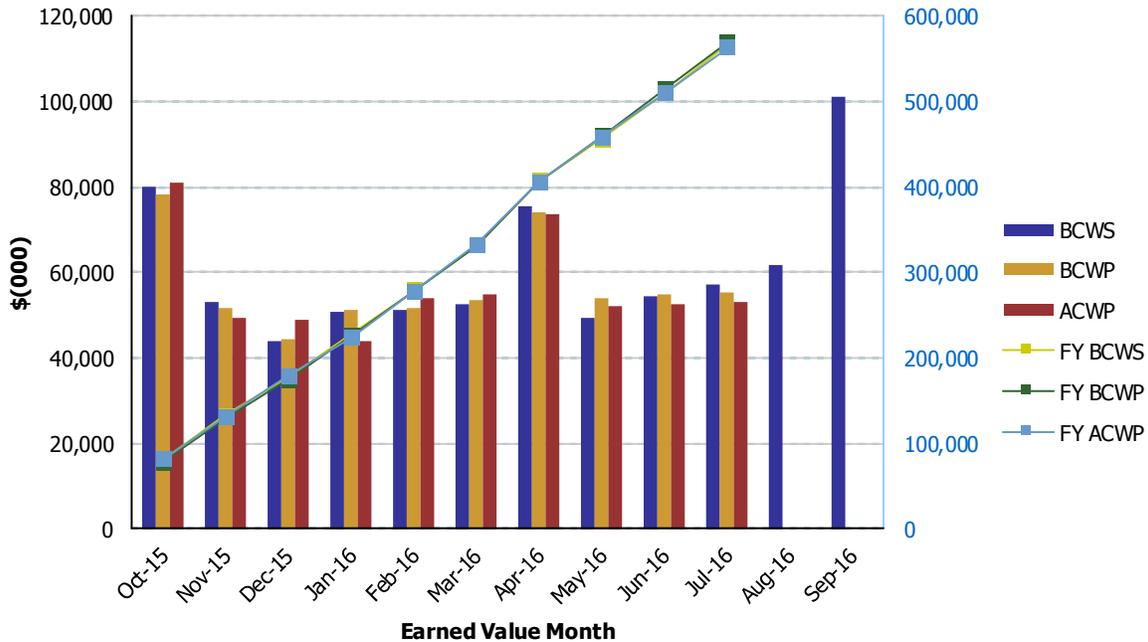
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2016 Earned Value Data

Data as of: July 2016

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 2015	\$79,800	\$78,230	\$81,000	0.98	0.97	\$79,800	\$78,230	\$81,000	0.98	0.97
Nov 2015	\$52,815	\$51,614	\$49,184	0.98	1.05	\$132,615	\$129,844	\$130,184	0.98	1.00
Dec 2015	\$43,659	\$44,505	\$48,853	1.02	0.91	\$176,275	\$174,348	\$179,037	0.99	0.97
Jan 2016	\$50,515	\$51,167	\$43,662	1.01	1.17	\$226,790	\$225,515	\$222,699	0.99	1.01
Feb 2016	\$51,349	\$51,492	\$54,112	1.00	0.95	\$278,139	\$277,007	\$276,811	1.00	1.00
Mar 2016	\$52,395	\$53,645	\$54,896	1.02	0.98	\$330,533	\$330,653	\$331,707	1.00	1.00
Apr 2016	\$75,610	\$74,244	\$73,679	0.98	1.01	\$406,144	\$404,897	\$405,387	1.00	1.00
May 2016	\$49,478	\$53,800	\$51,914	1.09	1.04	\$455,622	\$458,697	\$457,300	1.01	1.00
Jun 2016	\$54,203	\$54,759	\$52,382	1.01	1.05	\$509,825	\$513,456	\$509,682	1.01	1.01
Jul 2016	\$56,934	\$55,273	\$52,892	0.97	1.05	\$566,759	\$568,728	\$562,574	1.00	1.01
Aug 2016	\$61,497									
Sep 2016	\$101,009									

PTD	\$9,666,522	\$9,648,275	\$9,580,376	1.00	1.01
-----	-------------	-------------	-------------	------	------

- 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.

Project Schedule and Cost Variance Performance

Performance Tracking	SV (\$x1,000)	CV (\$x1,000)
Current Period (July 2016)	(-\$1,662)	\$2,381
Fiscal Year 2016 to-date	\$1,969	\$6,154
Cumulative (through July 2016)	(-\$18,248)	\$67,898

SV = schedule variance.

CV = cost variance.

Earned Value Management System Analysis

The July **unfavorable** schedule variance (SV) of approximately **(\$1.7 million)** is primarily due to the following:

- LBL is an overall unfavorable **(\$3.0 million)**. LBL Plant Equipment is an unfavorable (\$3.5 million), primarily due to flowmeters performance forecast later than planned. Technical challenges of the LAW off-gas system have delayed award of the Q Flowmeter procurement. While the deliverable schedule date is affected, this delay will not impact the critical path.
- LBL Engineering is an unfavorable **(\$0.3 million)**, primarily due to activities being pushed by the delayed completion of the preliminary documented safety analysis (PDSA). The PDSA is needed for final procurements at the LAW Facility and finalizing design.
- For LBL, there are positive schedule variance areas that are offsetting the unfavorable schedule areas. In particular, LBL Plant Operations is a favorable \$0.8 million, where schedule recovery related to procedures/training, and receiving one shipment of site office furnishings were seen within the project; LBL Construction is a favorable \$0.2 million, primarily related to the termination of the Heat Trace and Insulation Subcontract and recognizing earnings for work completed in prior periods.
- The High-Level Waste (HLW) Facility is an overall unfavorable **(\$0.2 million)**. Construction is an unfavorable **(\$0.3 million)**, with civil work planned at higher levels for multiple work front flexibility.

Offset by:

- The Pretreatment (PT) Facility is an overall favorable amount of \$1.5 million. Plant Material is a favorable amount of \$1.3 million due to a change in rules of credit (now allowed to earn for billed work), for pipe and steel. Test Completion Team is a favorable amount of \$0.7 million due to performance ahead of schedule dates for vessel delivery and test platform modifications. Offsets are that the technical teams are at an unfavorable **(\$0.2 million)** due to delayed comment resolution on the test matrix, and delay in finalization of pipe loop simulant recipe; other performance is an unfavorable **(\$0.2 million)** for delays related to T4 in hiring an AREVA Inc. subject matter expert,

and delaying lower priority Phase 2 work at the expense of Phase 3 software development.

The July **favorable** cost variance (CV) of approximately \$2.4 million is primarily due to the following:

- Project Services is a favorable \$1.2 million. Engineering is an unfavorable **(\$0.1 million)** due primarily to labor rates, and higher than originally planned work by Sequoia Subcontracts. General/Other services are a favorable \$0.8 million, primarily due to Project and Business Management cost under runs for relocation and subcontracts, and other miscellaneous Project Services labor under runs. Procurement is a favorable \$0.3 million due to backfilled and new positions that remain. Construction is a favorable \$0.1 million primarily due to a favorable non-labor variance and positive labor usage variance.
- LBL is a favorable \$0.9 million. LBL construction is a favorable \$0.8 million due to the termination of the insulation subcontract and recognizing earnings for work completed in prior periods. Secondary driver is penetration seals subcontractor performing favorably for pipe and conduit seals installation. LBL startup is a favorable \$0.4 million related to the forecast for staffing additions being later than the plan and delays in planned level of effort procurements. LBL Plant Operations is a favorable \$0.2 million related to procedures and training scope. Secondary driver is staffing additions later than the plan. Offsets are LBL Support Functions (excluding Construction, Plant Operations, and Startup) is an unfavorable **(\$0.4 million)** due to additional Project Management support for oversight of startup, site energization, and Owner's Representative support; Procurement labor charges from traffic and logistics, field subcontracts, supplier quality, field purchasing, bulk purchasing, and materials management above plan in the period driven by LBL prioritization; LBL Design Agency is an unfavorable **(\$0.1 million)** with BOF unfavorable performance for post-Issued for Construction revisions and Mechanical Systems Condition Report scope.
- HLW Facility is a favorable \$0.5 million. Engineering is a favorable \$0.3 million, accrual adjustment for duplicated engineering subcontract cost. Construction is a favorable \$0.1 million, staffing deployment for field non-manual occurring sooner than planned. Other function support is a favorable \$0.1 million.

Offset by:

- PT Facility is an unfavorable **(\$0.2 million)**. Nuclear Safety Engineering is an unfavorable **(\$0.3 million)** due to increased support for deliverables for T1–T3. Offset is that Plant Material is a favorable \$0.1 million due to pipe vendor actual costs coming in lower than budgeted.

Pretreatment Facility

Milestone	Title	Due Date	Status
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 Pretreatment (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 U.S. Department of Energy (DOE) continues to focus on resolving five outstanding Waste Treatment and Immobilization Plant (WTP) technical issues as described in the Amended Consent Decree (i.e., preventing potential hydrogen buildup, preventing criticality, ensuring control of the pulse-jet mixers [PJM], protecting against possible erosion and corrosion, and ensuring ventilation balancing), while performing hazards analyses, and completing safety evaluations for process systems in accordance with the revised PT Facility 3-Year Interim Work Plan.

The WTP Project has made sustained progress on resolution of the five outstanding technical issues. The DOE Office of River Protection (ORP) expects to attain resolution and closure of the two nuclear safety technical issues, “Preventing Potential Hydrogen Build-Up” and “Preventing Criticality,” by the end of 2016. Work will continue past 2016 on resolving the remaining three issues. ORP has worked with Bechtel National, Inc. (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:

- BNI issued and transmitted engineering study for proposed controls for hydrogen events in the PT Facility (Rev. 0)
- BNI submitted hydrogen in piping and ancillary vessels (HPAV) Preliminary Document Safety Analysis Change Package to ORP
- Installed standard high-solids vessel design (SHSVD) in full-scale test facility
- BNI started SHSVD in-process design review

- Completed ¼-scale jet impingement test
- BNI submitted *Fitness for Service Safety Requirements Document Conditions Report/Basis of Design Change Notice* to ORP for review.

Significant Planned Activities in the Next Three Months:

- ORP to complete technical issue resolution of hydrogen gas events in vessels, criticality in PJM vessels, and hydrogen in piping and ancillary vessels (T1 through T3)
- ORP closure of conditions of approval for T2
- ORP approval of HPAV package (issue Safety Evaluation Report – T3)
- BNI to install PJM level instrument
- BNI to issue SHSVD test plan to ORP
- BNI to complete concrete placement Simulant Storage Facility
- BNI to start test prep for stress corrosion cracking
- BNI to complete Conceptual Design Plan and issue for ORP review
- BNI to issue preliminary structural analysis of SHSVD Plant Study for complete Conceptual Design Plan and issue for ORP review for design review notice.

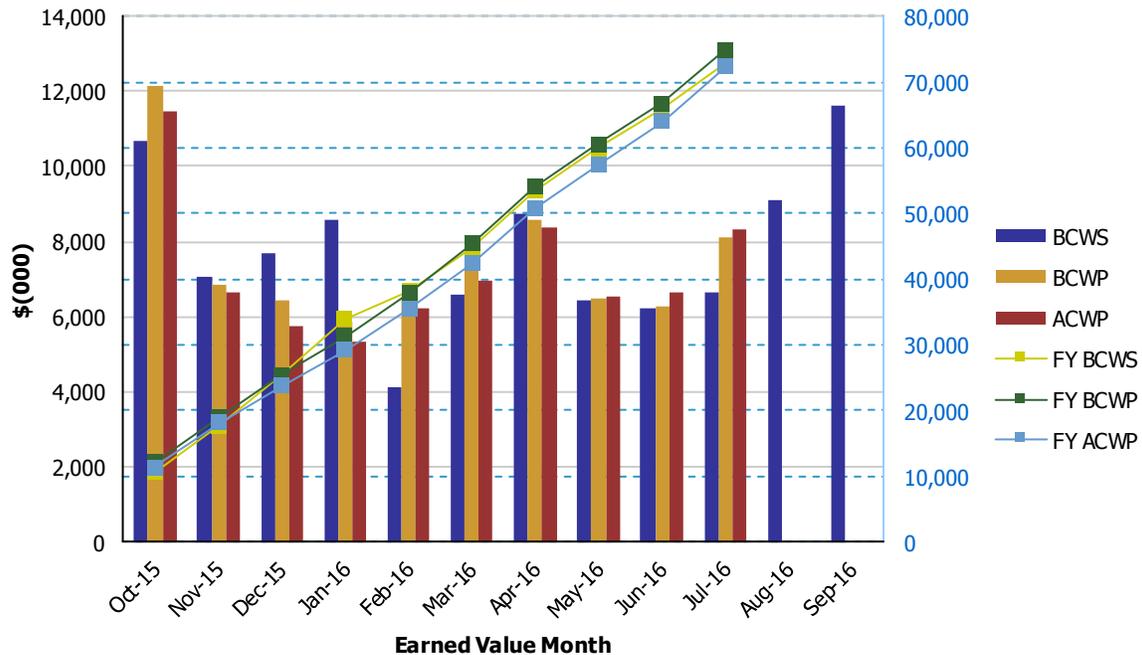
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2016 Earned Value Data

Data as of: July 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 2015	\$10,667	\$12,155	\$11,441	1.14	1.06	\$10,667	\$12,155	\$11,441	1.14	1.06
Nov 2015	\$7,074	\$6,836	\$6,648	0.97	1.03	\$17,741	\$18,991	\$18,089	1.07	1.05
Dec 2015	\$7,678	\$6,441	\$5,777	0.84	1.11	\$25,419	\$25,432	\$23,867	1.00	1.07
Jan 2016	\$8,595	\$5,853	\$5,332	0.68	1.10	\$34,014	\$31,285	\$29,199	0.92	1.07
Feb 2016	\$4,105	\$6,545	\$6,220	1.59	1.05	\$38,120	\$37,830	\$35,419	0.99	1.07
Mar 2016	\$6,588	\$7,604	\$6,979	1.15	1.09	\$44,708	\$45,434	\$42,398	1.02	1.07
Apr 2016	\$8,717	\$8,586	\$8,400	0.99	1.02	\$53,425	\$54,020	\$50,798	1.01	1.06
May 2016	\$6,434	\$6,485	\$6,523	1.01	0.99	\$59,859	\$60,506	\$57,321	1.01	1.06
Jun 2016	\$6,249	\$6,258	\$6,630	1.00	0.94	\$66,108	\$66,764	\$63,951	1.01	1.04
Jul 2016	\$6,618	\$8,129	\$8,311	1.23	0.98	\$72,726	\$74,893	\$72,262	1.03	1.04
Aug 2016	\$9,094									
Sep 2016	\$11,603									

PTD	\$1,805,126	\$1,806,725	\$1,784,822	1.00	1.01
-----	-------------	-------------	-------------	------	------

- | | | | | | |
|------|---|----------------------------------|------|---|---------------------------------|
| 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. |

High-Level Waste Facility

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 High-Level Waste (HLW) Facility will receive the separated HLW concentrate from the Pretreatment (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.

Currently, HLW Facility activities are being performed in accordance with the fiscal year (FY) 2015/FY 2016, 2-Year Interim Work Plan. Efforts are focused on completing activities required to obtain full-production authorization by the U.S. Department of Energy (DOE), including developing longer-term work plans. Limited construction is continuing with the concrete placements, installation of support steel, and crane rails in the melter caves. Bechtel National, Inc. (BNI) has completed a 5-year work plan for activities beyond FY 2016.

Engineering is focused on activities to support implementation of technical core team recommendations, performance of engineering studies, and analysis to disposition design and operability review comments. One of these engineering studies, the decontamination handling system engineering study, has been issued. Phase II of the HLW Facility melter off-gas treatment process/process vessel vent engineering study, which is evaluating options for system changes to improve the design and operability is in progress. Design of the remaining portions of the radioactive liquid disposal (RLD) system (Phase II) is in progress following incorporation of the recently approved RLD Preliminary Documented Safety Analysis (PDSA) Change Package.

Process hazard analysis has been completed and preparation of the facility PDSA update to align design and the safety basis has begun, with the expected submission to the DOE Office of River Protection (ORP) in November 2016.

Systems engineering continues to develop system design descriptions, and incorporate system design description requirements into a requirements management system to ensure all requirements are incorporated into the facility design and subsequently verified prior to completion of HLW Facility commissioning.

Multiple high-efficiency particulate air (HEPA) filter media designs are planned to be tested to ensure the qualified filters support the needs for the HLW Facility, along with the Low-Activity Waste (LAW) Facility, Balance of Facilities (BOF), and Analytical Laboratory (LAB) (collectively known as LBL, including LBL facility services). Testing of the full-scale filter designs at Mississippi State University is ongoing. One filter design, known as “Design 4” has been through three rounds of successful full-scale design testing. The final round of testing on the “Design 4” filter was completed, again showing positive and successful test results. Nuclear Quality Assurance-1 (NQA-1) qualification testing of the “Design 4” filter is proceeding. Fabrication of the additional filters and testing continues. Qualification testing of Flanders filters has begun.

Significant Accomplishments during the Prior Three Months:

- Completed successful full-scale tests of the fourth “Design 4” HEPA filter.
- Began NQA-1 HEPA filter qualification testing of the “Design 4” filters.
- Began NQA-1 HEPA filter qualification testing of Flanders filters.
- Issued decontamination handling system engineering study.
- Completed HLW Facility melter handling system and HLW Facility off-gas process system Phase I engineering studies to disposition some of the design and operability issues and recommendations.
- Issued HLW Facility hazards analysis to support PDSA update.
- 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.
- Completed roof flashing at interface between the annex and the main facility, thereby rain-proofing the annex.

Significant Planned Activities in the Next Three Months:

- Continue full-scale HEPA filter testing to select and qualify additional filter(s) that will support the Waste Treatment and Immobilization Plant (WTP) ventilation and off-gas needs
- Release material procurement and fabrication for vessel RLD-7

- Issue the radioactive waste handling system and melter cave support handling system engineering studies
- Issue an engineering study detailing the potential addition of a melter assembly building/airlock and an additional import/export dock for waste handling
- Submit draft PDSA revision to the ORP
- Continue civil build-out of the HLW Facility focusing on weathering in the building.

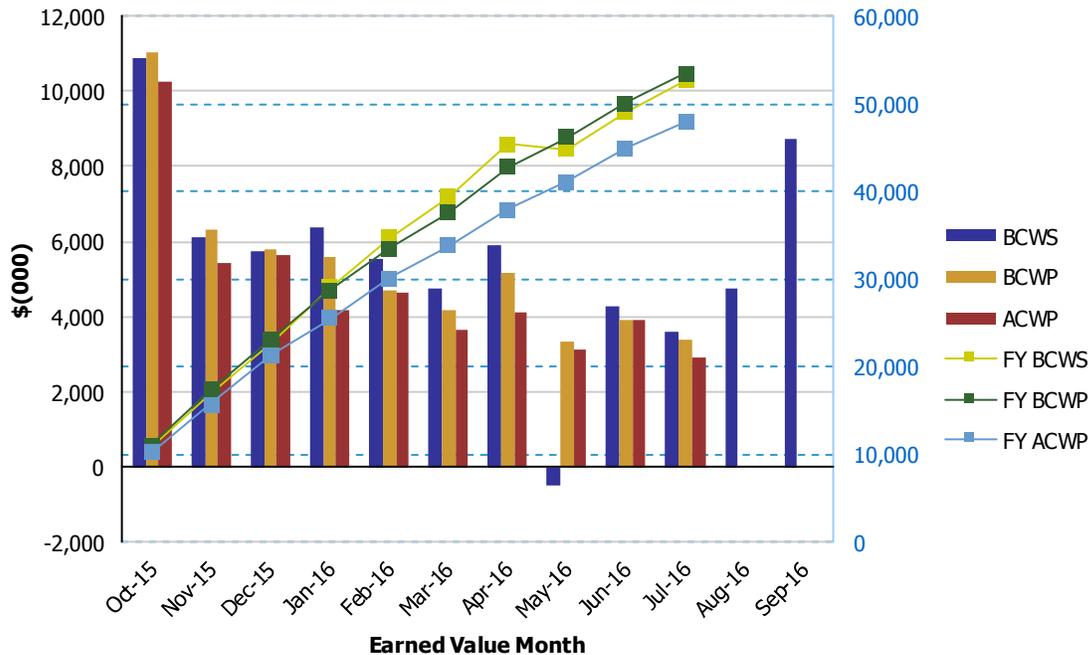
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2016 Earned Value Data

Data as of: July 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 2015	\$10,905	\$11,028	\$10,257	1.01	1.08	\$10,905	\$11,028	\$10,257	1.01	1.08
Nov 2015	\$6,103	\$6,326	\$5,452	1.04	1.16	\$17,008	\$17,355	\$15,708	1.02	1.10
Dec 2015	\$5,737	\$5,795	\$5,634	1.01	1.03	\$22,745	\$23,150	\$21,343	1.02	1.08
Jan 2016	\$6,368	\$5,591	\$4,174	0.88	1.34	\$29,113	\$28,741	\$25,517	0.99	1.13
Feb 2016	\$5,551	\$4,711	\$4,631	0.85	1.02	\$34,664	\$33,453	\$30,148	0.97	1.11
Mar 2016	\$4,740	\$4,169	\$3,673	0.88	1.14	\$39,405	\$37,622	\$33,821	0.95	1.11
Apr 2016	\$5,921	\$5,168	\$4,141	0.87	1.25	\$45,325	\$42,789	\$37,962	0.94	1.13
May 2016	(\$497)	\$3,353	\$3,116	-6.74	1.08	\$44,828	\$46,143	\$41,078	1.03	1.12
Jun 2016	\$4,259	\$3,918	\$3,904	0.92	1.00	\$49,087	\$50,060	\$44,982	1.02	1.11
Jul 2016	\$3,616	\$3,394	\$2,935	0.94	1.16	\$52,703	\$53,454	\$47,917	1.01	1.12
Aug 2016	\$4,747									
Sep 2016	\$8,726									

PTD	\$1,253,991	\$1,253,720	\$1,234,047	1.00	1.02
-----	-------------	-------------	-------------	------	------

- | | | | | | |
|------|---|----------------------------------|------|---|---------------------------------|
| 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. |

Low-Activity Waste Facility

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 Low-Activity Waste (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, and 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 July 2016, the LAW Facility was 56 percent complete overall, with engineering design 77 percent complete, procurement 72 percent complete, construction 81 percent complete, and startup and commissioning 7 percent complete.

Significant Accomplishments during the Prior Three Months:

- Completed gas barrier lid #2 refractory placements
- Started LAW secondary off-gas/vessel vent process system pipe tie-ins between thermal catalytic oxidizer (TCO) and ammonia skid
- Installed 140 linear feet of process piping
- Installed 640 linear feet of conduit and pulled 7,270 linear feet of cable
- Installed 30 process area penetration seals
- Welded TCO assembly in place in its final location on the 48-foot elevation
- Completed melter #1 gas barrier lid welding.

Significant Planned Activities in the Next Three Months:

- Set gas barrier lid for melter #2.
- Set shield lid for melter #1.
- Evaluate preliminary hazard category calculation for LAW Facility.
- Continue the re-baselining review process.
- Perform additional welds required on the melter base to support seismic analysis.

- Address public comments and receive approval of melter dangerous waste permits. Bechtel National, Inc. (BNI); U.S. Department of Energy (DOE), Office of River Protection (ORP); and the Washington State Department of Ecology will work to resolve all comments received.
- Complete radiographic testing on the caustic scrubber and deliver the vessel.
- Start procurement evaluation process for the spare melter.
- Develop hazard identification checklist, what-if tables, and process hazard analysis events for accident scenarios to support preliminary documented safety analysis (PDSA) update development.

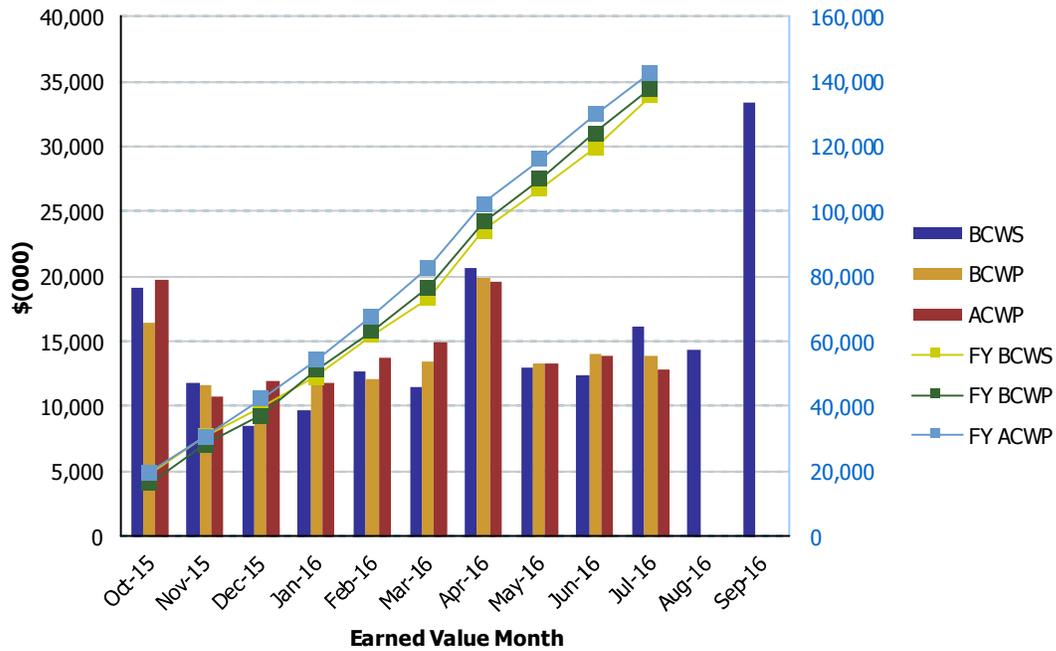
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2016 Earned Value Data

Data as of: July 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 2015	\$19,131	\$16,406	\$19,702	0.86	0.83	\$19,131	\$16,406	\$19,702	0.86	0.83
Nov 2015	\$11,764	\$11,637	\$10,735	0.99	1.08	\$30,896	\$28,043	\$30,436	0.91	0.92
Dec 2015	\$8,520	\$9,132	\$11,880	1.07	0.77	\$39,416	\$37,175	\$42,316	0.94	0.88
Jan 2016	\$9,694	\$14,071	\$11,790	1.45	1.19	\$49,110	\$51,245	\$54,105	1.04	0.95
Feb 2016	\$12,760	\$12,055	\$13,698	0.94	0.88	\$61,870	\$63,300	\$67,804	1.02	0.93
Mar 2016	\$11,541	\$13,513	\$14,986	1.17	0.90	\$73,411	\$76,814	\$82,790	1.05	0.93
Apr 2016	\$20,619	\$19,828	\$19,641	0.96	1.01	\$94,030	\$96,641	\$102,431	1.03	0.94
May 2016	\$13,012	\$13,289	\$13,364	1.02	0.99	\$107,042	\$109,930	\$115,795	1.03	0.95
Jun 2016	\$12,326	\$14,005	\$13,959	1.14	1.00	\$119,369	\$123,936	\$129,754	1.04	0.96
Jul 2016	\$16,183	\$13,956	\$12,866	0.86	1.08	\$135,552	\$137,891	\$142,620	1.02	0.97
Aug 2016	\$14,347									
Sep 2016	\$33,435									

PTD	\$1,353,750	\$1,346,147	\$1,344,109	0.99	1.00
-----	-------------	-------------	-------------	------	------

- 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.

Balance of Facilities

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

The Balance of Facilities (BOF) will provide services and utilities to support operation of the main production facilities: Pretreatment (PT), High-Level Waste (HLW), Low-Activity Waste (LAW), and Analytical Laboratory (LAB). As of July 2016, BOF was 59 percent complete overall, with engineering design 80 percent complete, procurement 77 percent complete, construction 86 percent complete, and startup and commissioning 19 percent complete.

Engineering activities continue in support of the direct-feed low-activity-waste (DFLAW) initiative. Current efforts are focused on progressing the design of the Effluent Management Facility (EMF), providing documents to support the EMF Secondary Containment Permit, and supporting procurement activities. Construction efforts are focused on rebar placement for the EMF basemat and completion of the remaining items required for energization of the Waste Treatment and Immobilization Plant (WTP) switchgear building from the permanent power supply.

Significant Accomplishments during the Prior Three Months:

- Completed the Acceptance Test Report for Switchgear Buildings 87 and 91
- Completed functional review of installation of the fire detection and alarm system fire detection equipment in the Water Treatment Building (86) and Cooling Tower Facility (83)
- Performed 60 percent design review of EMF, including representation from Bechtel National, Inc. (BNI); the U.S. Department of Energy (DOE), Office of River Protection (ORP); and Washington State Department of Ecology.
- Completed drilling activities and installation of vertical anodes for cathodic protection system
- Completed rectifier installation as part of the WTP cathodic protection system upgrade effort
- Initiated bid evaluations and the selection process for the EMF evaporator subcontract
- Continued installing communications in the switchgear buildings and nonradioactive liquid waste disposal
- Completed Underwriter's Laboratory testing of the battery monitoring systems in the switchgear buildings.

Significant Planned Activities in the Next Three Months:

- Begin placement of the construction aids (soldier piles) that support excavation of EMF low point drain

- Energize WTP switchgear from the permanent power supply and complete energized testing in support of DFLAW.

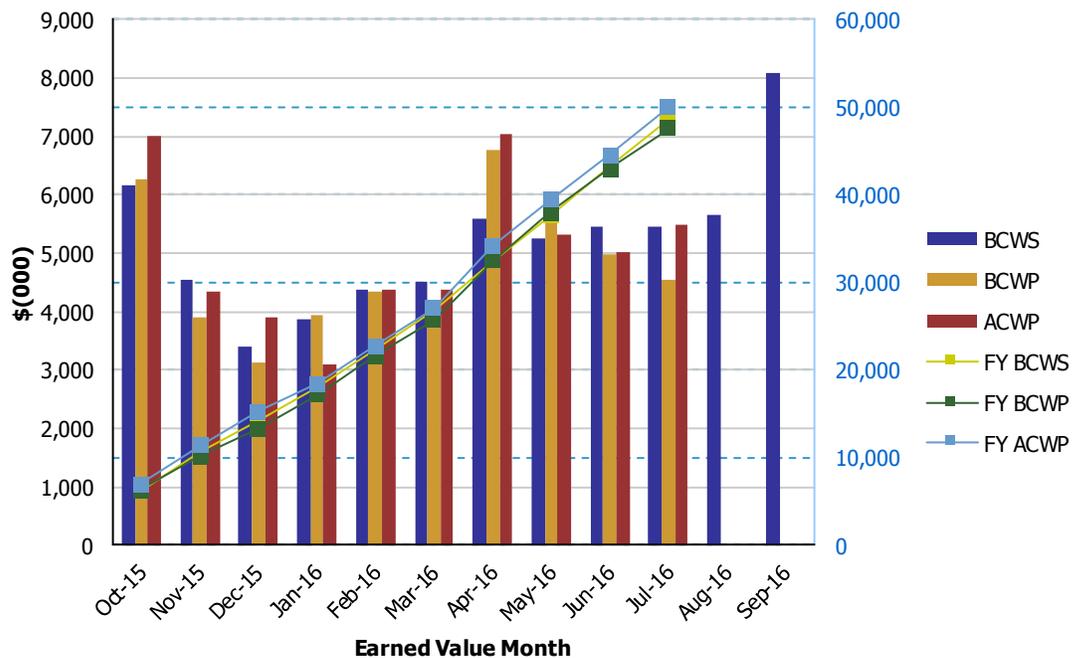
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2016 Earned Value Data

Data as of: July 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 2015	\$6,160	\$6,249	\$7,006	1.01	0.89	\$6,160	\$6,249	\$7,006	1.01	0.89
Nov 2015	\$4,555	\$3,913	\$4,344	0.86	0.90	\$10,715	\$10,162	\$11,350	0.95	0.90
Dec 2015	\$3,400	\$3,134	\$3,917	0.92	0.80	\$14,115	\$13,296	\$15,267	0.94	0.87
Jan 2016	\$3,874	\$3,917	\$3,108	1.01	1.26	\$17,989	\$17,214	\$18,375	0.96	0.94
Feb 2016	\$4,367	\$4,344	\$4,357	0.99	1.00	\$22,356	\$21,557	\$22,732	0.96	0.95
Mar 2016	\$4,492	\$4,111	\$4,381	0.92	0.94	\$26,848	\$25,668	\$27,113	0.96	0.95
Apr 2016	\$5,581	\$6,780	\$7,042	1.21	0.96	\$32,429	\$32,448	\$34,155	1.00	0.95
May 2016	\$5,233	\$5,511	\$5,307	1.05	1.04	\$37,662	\$37,959	\$39,461	1.01	0.96
Jun 2016	\$5,435	\$4,995	\$5,016	0.92	1.00	\$43,097	\$42,954	\$44,477	1.00	0.97
Jul 2016	\$5,446	\$4,537	\$5,483	0.83	0.83	\$48,543	\$47,491	\$49,960	0.98	0.95
Aug 2016	\$5,658									
Sep 2016	\$8,083									

PTD	\$478,037	\$472,692	\$473,582	0.99	1.00
-----	-----------	-----------	-----------	------	------

- 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.

Analytical Laboratory

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

LAB = analytical laboratory.

The Analytical Laboratory (LAB) will support Waste Treatment and Immobilization Plant (WTP) operations by analyzing feed, vitrified waste, and effluent streams. As of July 2016, the LAB was 61 percent complete overall, with engineering design 79 percent complete, procurement 88 percent complete, construction 95 percent complete, and startup and commissioning 13 percent complete.

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

Significant Accomplishments during the Prior Three Months:

- Completed installation of the test engineers workstation and turned equipment over to startup
- Continued development of procedures for the WTP analytical methods development process
- Began final wall and floor coatings
- Completed turnover of the process control system in support of the test engineers' workstation to startup.

Significant Planned Activities in the Next Three Months:

- Complete LAB system walkdowns and design in support of DFLAW modifications
- Complete C5V system operations engineering study in a DFLAW configuration
- Process the trend to rebaseline the LAB startup schedule to help maximize resources in fiscal year (FY) 2017 and FY 2018
- Complete turnover of the fire protection water system in support of the test engineers workstation to startup
- Select temporary laboratory space, which allows for earlier laboratory methods development and training to ensure laboratory staff are ready at the start of commissioning.

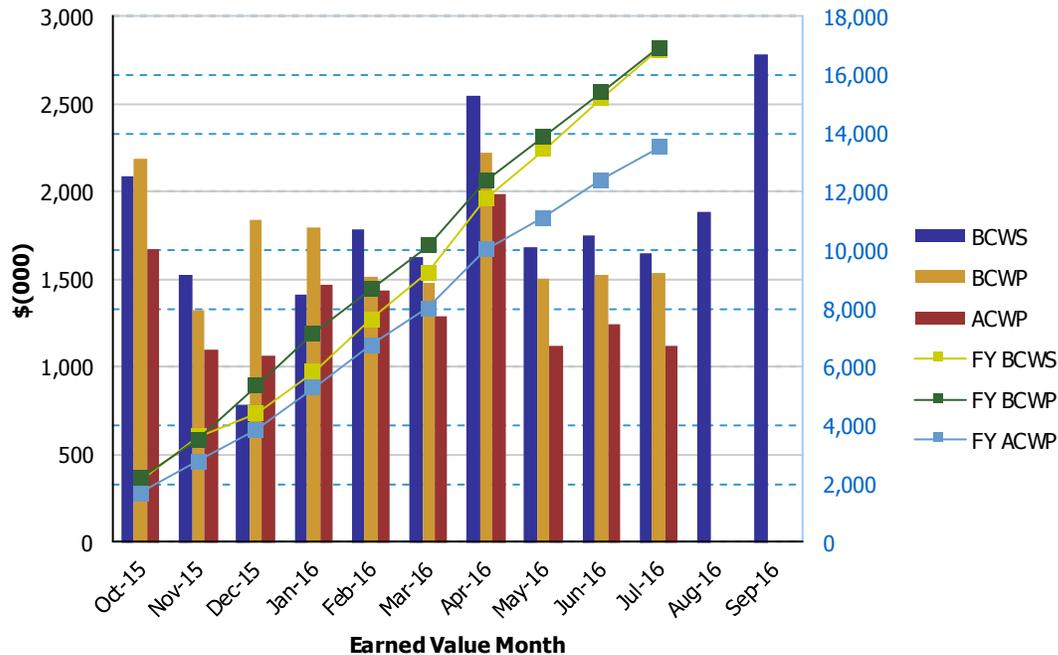
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2016 Earned Value Data

Data as of: July 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 2015	\$2,083	\$2,188	\$1,674	1.05	1.31	\$2,083	\$2,188	\$1,674	1.05	1.31
Nov 2015	\$1,528	\$1,324	\$1,093	0.87	1.21	\$3,611	\$3,513	\$2,768	0.97	1.27
Dec 2015	\$789	\$1,844	\$1,060	2.34	1.74	\$4,399	\$5,356	\$3,827	1.22	1.40
Jan 2016	\$1,415	\$1,797	\$1,472	1.27	1.22	\$5,815	\$7,153	\$5,299	1.23	1.35
Feb 2016	\$1,786	\$1,511	\$1,438	0.85	1.05	\$7,601	\$8,665	\$6,738	1.14	1.29
Mar 2016	\$1,628	\$1,478	\$1,291	0.91	1.15	\$9,229	\$10,143	\$8,028	1.10	1.26
Apr 2016	\$2,541	\$2,223	\$1,990	0.87	1.12	\$11,770	\$12,366	\$10,019	1.05	1.23
May 2016	\$1,682	\$1,507	\$1,117	0.90	1.35	\$13,452	\$13,874	\$11,136	1.03	1.25
Jun 2016	\$1,745	\$1,520	\$1,249	0.87	1.22	\$15,197	\$15,394	\$12,385	1.01	1.24
Jul 2016	\$1,649	\$1,531	\$1,117	0.93	1.37	\$16,846	\$16,926	\$13,502	1.00	1.25
Aug 2016	\$1,879									
Sep 2016	\$2,785									

PTD	\$329,412	\$327,844	\$321,850	1.00	1.02
-----	-----------	-----------	-----------	------	------

- | | | | | | |
|------|---|----------------------------------|------|---|---------------------------------|
| 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. |

Waste Treatment Plant Project Percent Complete Status (Table)

Waste Treatment Plant Project - (LBL/Project Services) Percent Complete Status																		
Through July 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	2,279.5	1,271.1	56%	541.2	415.2	77%	372.2	268.1	72%	664.5	538.1	81%	697.6	45.7	7%	4.0	4.0	100%
Balance of Facilities	753.3	445.0	59%	149.6	119.0	80%	71.2	54.9	77%	256.2	219.6	86%	275.8	51.0	19%	0.5	0.5	100%
Analytical Lab	527.7	319.9	61%	106.1	84.1	79%	65.4	57.4	88%	161.5	152.8	95%	194.3	25.2	13%	0.5	0.5	100%
Direct Feed LAW	377.3	55.0	15%	81.9	38.9	48%	57.1	1.8	3%	229.4	11.1	5%	0.0	0.0	0%	8.9	3.1	35%
LBL Facility Services	606.0	127.2	21%	0.0	0.0	0%	56.4	18.1	32%	131.5	27.5	21%	260.2	41.6	16%	157.9	39.9	25%
Total LBL	4,543.9	2,218.2	49%	878.9	657.2	75%	622.3	400.3	64%	1,443.1	949.1	66%	1,427.8	163.6	11%	171.8	48.0	28%
Project Services	1,018.1	338.3	33%	128.2	48.6	38%	74.0	31.7	43%	118.1	66.6	56%	1.7	1.7	100%	696.1	189.8	27%
Total Project Services	1,018.1	338.3	33%	128.2	48.6	38%	74.0	31.7	43%	118.1	66.6	56%	1.7	1.7	100%	696.1	189.8	27%
Total LBL, DFLAW & Project Services	5,562.0	2,556.5	46%	1,007.1	705.8	70%	696.3	432.0	62%	1,561.2	1,015.6	65%	1,429.6	165.3	12%	867.8	237.7	27%
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	14,284.8	8,521.7	60%	3,180.2	2,654.7	83%	2,261.8	1,556.8	69%	4,448.8	2,780.4	62%	2,188.1	308.5	14%	2,205.9	1,221.2	55%
<small>Source: Preliminary WTP Contract Performance Report - Format 1, Data for July 2016</small>																		
<small>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.</small>																		