OFFICE OF RIVER PROTECTION
P.O. Box 450, MSIN H6-60
Richland, Washington 99352

FEB 1 4 2019

19-ECD-0008

Ms. Alexandra K. Smith, Program Manager
Nuclear Waste Program
Washington State
Department of Ecology
3100 Port of Benton Blvd.
Richland, Washington 99354

Ms. Smith:

FEBRUARY 2019 QUARTERLY REPORT FOR THE STATE OF WASHINGTON VS. U.S. DEPARTMENT OF ENERGY, CASE NO. 08-5085-RMP, FOR WASTE TREATMENT AND IMMOBILIZATION PLANT CONSTRUCTION AND STARTUP ACTIVITIES AND TANK RETRIEVAL ACTIVITIES – OCTOBER 1, 2018, THROUGH DECEMBER 31, 2018

This letter transmits the U.S. Department of Energy February 2019 Quarterly Report (Attachment) under Section IV-C-1 of the subject Consent Decree, for the period of October 1, 2018, through December 31, 2018. Pursuant to the Consent Decree, this report provides the status and progress made during the reporting period.

As requested by the Washington State Department of Ecology, copies of the directives given to contractors for work required by the Consent Decree are included in the Attachment.

If you have any questions, please contact Thomas W. Fletcher, Assistant Manager, Waste Treatment and Immobilization Plant Project, (509) 376-4941, or Robert G. Hastings, Assistant Manager, Tank Farms Project, (509) 376-9824.

Brian T. Vance
Manager

ECD:RLE

Attachment

cc: See page 2

cc w/attach:
L.C. Suttora, EM-3
J. Moon, EM-3.31
S.R. Ross, EM-4.31
E.A. Connell, EM-4.4
J.S. Decker, Ecology
J.J. Lyon, Ecology
J.D. McDonald, Ecology
K. Niles, Oregon Energy
M.J. Turner, MSA
J. Atwood, YN
Administrative Record

cc w/o attach:
M. Johnson, CTUIR
S.L. Dahl, Ecology
J.B. Price, Ecology
C.L. Whalen, Ecology
D.R. Einan, EPA
S. Leckband, HAB
J. Bell, NPT (Acting)
G. Bohnee, NPT
R. Buck, Wanapum
R. Longoria, YN (Acting)

Attachment
19-ECD-0008
(56 Pages Excluding Cover Sheet)

U.S. Department of Energy, Office of River Protection
Quarterly Report, October 1, 2018, through December 31, 2018, and
Tank Farm / Waste Treatment and Immobilization Plant
Direction Letters

Attachment
19-ECD-0008

Office of River Protection
Quarterly Report
October 1, 2018, through December 31, 2018[1]

Consent Decree, *State of Washington v. Dept. of Energy*, No: 08-5085-FVS (October 25, 2010)

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

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

Third Amended Consent Decree, *State of Washington v. Dept. of Energy*, No: 2:08-CV-5085-RMP (October 12, 2018)

2440 Stevens Center Place
Richland, Washington 99352
Office of River Protection

B.J. Harp, Deputy Manager
Office of River Protection

2/14/2019
Date

[1] Except where otherwise expressly stated, the narrative descriptions of progress in this report cover the period from October 1, 2018, through December 31, 2018. Earned Value Management System data and descriptions cover the period ending November 30, 2018.

[2] The Consent Decree, Amended Consent Decree and Second Amended Consent Decree 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 Intervener, under the same case numbers.

Topic **Page**

Acronyms and Abbreviations

BNI	Bechtel National, Inc.
BOF	Balance of Facilities
CGD	commercial grade dedication
CV	cost variance
DFLAW	direct-feed low-activity waste
DNFSB	Defense Nuclear Facilities Safety Board
DOE	U.S. Department of Energy
DSA	documented safety analysis
Ecology	Washington State Department of Ecology
EMF	effluent management facility
EVMS	Earned Value Management System
FY	fiscal year
HEPA	high-efficiency particulate air
HLW	High-Level Waste (Facility)
LAB	Analytical Laboratory
LAW	Low-Activity Waste (Facility)
LBL	Low-Activity Waste Facility, Balance of Facilities, and Analytical Laboratory
ORP	U.S. Department of Energy, Office of River Protection
PJM	pulse-jet mixer
PT	Pretreatment (Facility)
SHSV	standard high-solids vessel
SV	schedule variance
USACE	U.S. Army Corps of Engineers
WTP	Waste Treatment and Immobilization Plant

Introduction

The U.S. Department of Energy's (DOE) Office of River Protection (ORP) submits the following information to satisfy its obligation to provide "a written report documenting the WTP construction and startup activities and tank retrieval activities," as required by Section IV-C-1 of the Second Amended Consent Decree in *State of Washington v. United States Department of Energy*, No: 2:08-CV-5085-RMP (April 12, 2016).

Except where otherwise stated, the narrative descriptions of progress in this report cover the period from October 1, 2018, through December 31, 2018. Earned Value Management System (EVMS) data and descriptions cover the period ending November 30, 2018; this includes the facility completion percentage estimates included at various locations in the Waste Treatment and Immobilization Plant (WTP) section.

As the Washington State Department of Ecology (Ecology) has requested, written directives, not previously submitted, for the period addressed by this report for work required by the Amended Consent Decree are included with this report.

Tank Farm Actions and Milestones

Numbers	Titles	Due Date	Status
	Actions		
D-16E-01	DOE must purchase by December 31, 2016, a spare E-A-1[1] reboiler for the 242-A Evaporator.	12/31/2016	Complete
D-16E-02	Have a spare E-A-1[1] reboiler available by December 31, 2018.	12/31/2018	Complete
	Milestones		
D-16B-03	"Of the 12 SSTs referred to in B-1 and B-2, complete retrieval of tank waste in at least 5."	06/30/2021[2]	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	Complete
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."	09/30/2026[2]	Under Analysis[3]

[1] The Consent Decrees referred to the 242-A reboiler as "A-E-1"; the correct designation is "E-A-1."

[2] Third Amended Consent Decree, *State of Washington v. Dept. of Energy*, No: 2:08-CV-5085-RMP (October 12, 2018).

[3] As discussed in the joint motion to amend the Consent Decree filed October 1, 2018, DOE is engaged in ongoing analysis of non-vapors-related retrieval challenges and tank condition issues associated with Tanks A-104 and A-105 (i.e., two of the nine tanks currently specified for retrieval under the B-2 Milestone). These issues are under analysis, and could require issuance of a "serious risk" notice or another request for amendment of the Consent Decree (including the B-2 Milestone). DOE met with the Washington State Department of Ecology and attorneys from the Washington State Office of the Attorney General on August 30, 2018, to discuss the retrieval challenges and issues with the condition of tanks A-104 and A-105. Since August 2018, DOE has had several discussions with Ecology on this topic.

DOE = U.S. Department of Energy.
Ecology = Washington State Department of Ecology.
SST = single-shell tank.
WMA-C = C Tank Farm waste management area.

Single-Shell Tank Retrieval Program

Quarterly Statement: Tank retrieval activities have 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.

On October 1, 2018, the United States and the State of Washington filed a joint motion to amend the Consent Decree, along with a proposed stipulation and order modifying of the Amended Consent Decree between DOE and the State of Washington in *State of Washington v. Dept. of Energy*, No: 2:08-CV-5085-RMP. The parties requested that the court amend the Amended Consent Decree by extending the completion dates for the B-2 and B-3 milestones. On October 12, 2018, the court granted the joint motion and entered the Third Amended Consent Decree, which extended the B-3 Milestone due date to June 30, 2021, and the B-2 Milestone to September 30, 2026.

Tank Farms Assistant Manager: Rob Hastings

Federal Program Manager: Jeff Rambo

Accomplishments in the Reporting Period

Completed Accomplishments:

- Completed Tank AX-104 hose-in-hose transfer line installation from the tank to the diversion box
- Completed asbestos gasket abatement on thermocouples (AX-103 7A, AX-103 7D, and AX-101 7C), which passed the lift test
- Completed riser investigation at Tanks AX-101 and AX-103
- Completed placement of the A Tank Farm portable exhausters (POR518 and POR519) on the pad
- Removed the Tank AX-103 riser 09B thermocouple
- Completed excavations from diversion box to AX-102 A, B, C, and D pits
- Installed the AX-102 02D Pit extended reach sluicer
- Completed installation of hose-in-hose transfer line from Tank AZ-102 to AX Tank Farm diversion box
- Completed internal wiring in control room trailer (POR471)
- Completed installation of the A Tank Farm ventilation system manifold concrete pad
- Completed installation of electrical rack power supply to portable exhauster (POR496).

Ongoing Activities:

- Continue installation of the electrical infrastructure (power and control systems) in the AX Tank Farm.
- Continue field activities for long-length equipment removals at Tank AX-103.
- Continue installation of retrieval equipment at Tank AX-102.
- Continue direct-push sampling of soil near Tanks A-104 and A-105 (installation of two additional boreholes).
- Continue installation of caustic and water system piping from portable exhauster POR496 to the AX Tank Farm.
- Continue Phase II of installation of the control trailer for portable exhausters POR471 and POR498 near Tanks AX-102 and AX-104.
- Continue installation of A Tank Farm ventilation system.
- Install miscellaneous steel (decks, platforms, rails) for the POR518 and POR519 portable exhausters.
- Continue to install ventilation manifold supports.
- Continue to remove cover blocks, clean pits, and remove thermocouple trees from risers (to connect the ventilation system).
- Continue work on AX01A Pit cleanout: the pit was found to have substantial floor contamination and two contaminated equipment skids, which require removal to access the floor drain. On one of the skids, the lifting connections are inaccessible, which requires engineering calculations and a special lift plan to remove. Currently testing alternate removal methods to remove the skid. The inability to readily remove the equipment skid has impacted progress of the cleanout of this pit.
- Continue excavation from AX Tank Farm diversion box to pits 04A, B, C, and D. This work was rescheduled.
- Continue Tank AX-104 diversion box hose barn installation. This work was rescheduled.
- Two thermocouples are stuck in their risers; alternate riser locations will be used for the equipment installation.
- Continue field activities for long-length equipment removals at Tank AX-103.

Accomplishments Expected in the Next Reporting Period

- Complete installation of AX-102 Pit 02C extended reach sluicer system
- Complete internal wiring in control trailer (POR498)
- Remove thermocouple from Tank AX-103 riser 07D
- Complete AX Tank Farm conduit installations for east/west electrical system
- Complete A Tank Farm POR518 and POR519 portable exhauster structural steel installation.

Issues Encountered in the Reporting Period

- Reduced worker efficiencies associated with mandatory use of supplied air continued to impact work in the tank farms.
- DOE is engaged in ongoing analysis of non-vapors-related retrieval challenges and condition issues associated with Tanks A-104 and A-105 (i.e., two of the nine tanks currently specified for retrieval under the B-2 Milestone)[3]. These issues are under analysis and could require issuance of a "serious risk" notice or another request for amendment of the Consent Decree (including the B-2 Milestone).
- The as-found condition of existing abandoned equipment in AX Tank Farm has impacted DOE's ability to efficiently remove the equipment and is impacting the cost and schedule

Issues Expected in the Next Reporting Period

- Reduced worker efficiencies associated with mandatory use of supplied air are expected to continue to impact work in the tank farms.
- DOE expects to continue analysis of and discussions with Ecology about the retrieval challenges and tank conditions issues associated with tanks A-104 and A-105.
- The as-found condition of existing abandoned equipment in AX Tank Farm is expected to negatively impact the efficient removal of the equipment and is expected to continue to impact cost and schedule.

Actions Initiated or Taken to Address Potential Schedule Slippage

- As reported above, on October 1, 2018, the United States and the State of Washington filed a Joint Motion to amend the Consent Decree. On October 12, 2018, the court granted the Joint Motion and entered the Third Amended Consent Decree extending the B-3 Milestone due date to June 30, 2021, and the B-2 Milestone to September 30, 2026.
- Washington River Protection Solutions LLC is continuing to address reduced worker efficiencies by hiring additional personnel such as health physics technicians, industrial hygiene technicians, and skilled construction workforce to support tank waste retrieval efforts in the A and AX tank farms. These increases may take place through additional hiring or transfers from other onsite contractors; however, there are challenges with availability of certain craft and excess personnel.

[3] The U.S. Department of Energy met with the Washington State Department of Ecology and attorneys from the Washington State Office of the Attorney General on August 30, 2018, to discuss the retrieval challenges and issues with the condition of tanks A-104 and A-105. The U.S. Department of Energy has had several discussions with the Washington State Department of Ecology on this topic since August 2018.

Tank Waste Retrieval Work Plan Status

Tank	TWRWP	Expected Revisions	First	Second	Third
AX-101	RPP-RPT-58932, Rev. 1	Complete	Sluicing with ERSS	High-Pressure Water deployed with ERSS	–
AX-102	RPP-RPT-58933, Rev. 1	Complete	Sluicing with ERSS	High-Pressure Water deployed with ERSS	–
AX-103	RPP-RPT-58934, Rev. 1	Complete	Sluicing with ERSS	High-Pressure Water deployed with ERSS	–
AX-104	RPP-RPT-58935, Rev. 1	Complete	Sluicing with ERSS	High-Pressure Water deployed with ERSS	–

ERSS = extended reach sluicer system.
TWRWP = tank waste retrieval work plan.

Accomplishments in the Reporting Period

- None.

Accomplishments Expected in the Next Reporting Period

- None.

Issues Encountered in the Reporting Period

- None.

Issues Expected in the Next Reporting Period

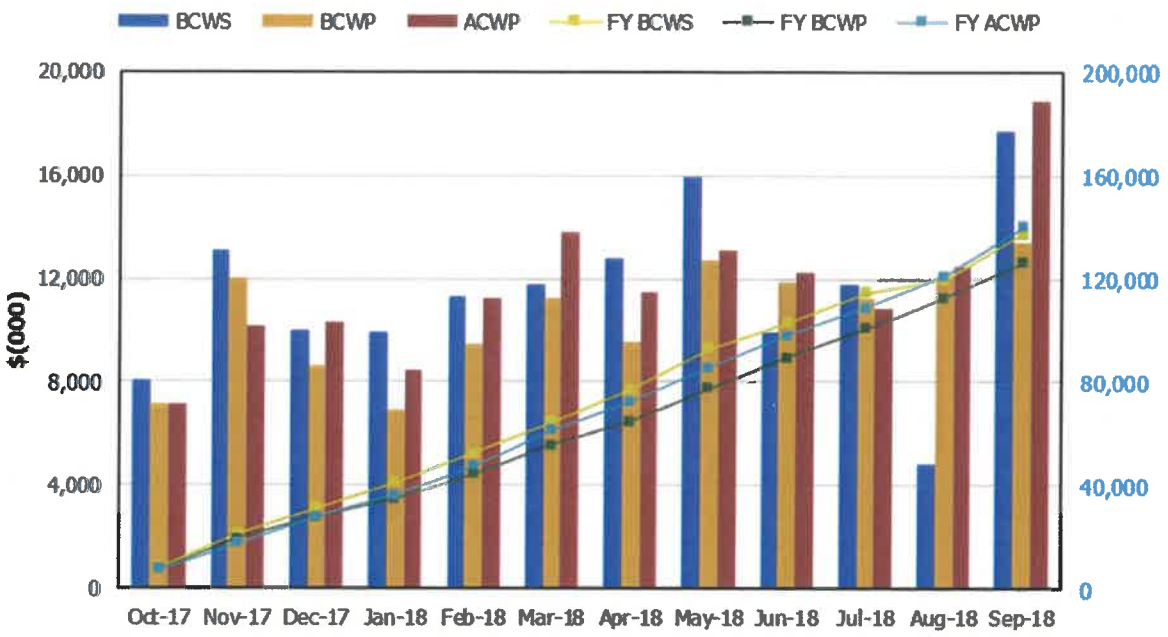
- None.

Tank Farm Earned Value Management System Quarterly Analysis

Earned Value Data: Fiscal Year 2018 — September-18

Tank Farms ORP-0014
WBS 5.2 - Retrieve and Close SSTs

EVMS Monthly and Fiscal Year Values



Earned Value Month

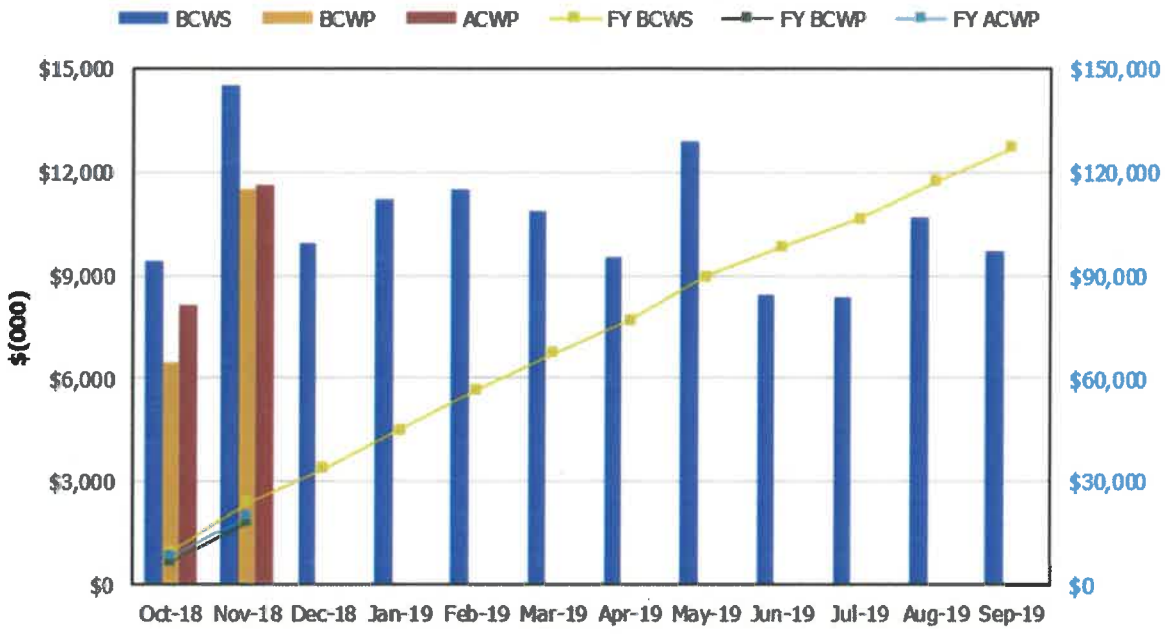
Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2017	$8,053	$7,119	$7,127	0.88	1.00	$8,053	$7,119	$7,127	0.88	1.00
Nov 2017	$13,058	$11,996	$10,119	0.92	1.19	$21,111	$19,115	$17,246	0.91	1.11
Dec 2017	$9,964	$8,572	$10,318	0.86	0.83	$31,075	$27,686	$27,563	0.89	1.00
Jan 2018	$9,940	$6,911	$8,464	0.70	0.82	$41,015	$34,597	$36,027	0.84	0.96
Feb 2018	$11,310	$9,456	$11,225	0.84	0.84	$52,326	$44,053	$47,252	0.84	0.93
Mar 2018	$11,787	$11,248	$13,799	0.95	0.82	$64,113	$55,301	$61,051	0.86	0.91
Apr 2018	$12,763	$9,509	$11,495	0.75	0.83	$76,875	$64,810	$72,546	0.84	0.89
May 2018	$15,972	$12,694	$13,076	0.79	0.97	$92,848	$77,504	$85,622	0.83	0.91
Jun 2018	$9,930	$11,819	$12,233	1.19	0.97	$102,778	$89,323	$97,855	0.87	0.91
Jul 2018	$11,803	$11,257	$10,812	0.95	1.04	$114,581	$100,580	$108,667	0.88	0.93
Aug 2018	$4,836	$12,075	$12,438	2.50	0.97	$119,416	$112,655	$121,105	0.94	0.93
Sep 2018	$17,752	$13,412	$18,841	0.76	0.71	$137,168	$126,068	$139,946	0.92	0.90
CTD	$940,739	$930,730	$978,498	0.99	0.95					

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.

Earned Value Data: Fiscal Year 2019 | November-18

Tank Farms ORP-0014
WBS 5.2 - Retrieve and Close SSTs

EVMS Monthly and Fiscal Year Values



Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2018	$9,402	$6,448	$8,124	0.69	0.79	$9,402	$6,448	$8,124	0.69	0.79
Nov 2018	$14,501	$11,516	$11,634	0.79	0.99	$23,902	$17,964	$19,757	0.75	0.91
Dec 2018	$9,904					$33,806				
Jan 2019	$11,173					$44,980				
Feb 2019	$11,490					$56,470				
Mar 2019	$10,845					$67,314				
Apr 2019	$9,523					$76,837				
May 2019	$12,881					$89,718				
Jun 2019	$8,424					$98,142				
Jul 2019	$8,350					$106,492				
Aug 2019	$10,696					$117,188				
Sep 2019	$9,694					$126,882				
CTD	$964,642	$948,695	$998,255	0.98	0.95					

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.

Earned Value Management System Quarterly Analysis

Retrieve and Close Single-Shell Tanks (5.02)[4]

Project EVMS reflects data for September 2018, October 2018, and November 2018.

Schedule Variance Summary:

Work completed ahead of the planned schedule is reported as a favorable schedule variance (SV) for the month in which it is completed, but results in an unfavorable SV in the month the work was planned.

The September 2018 **unfavorable** SV of ($4,339,600) was due to:

- A significant portion of the work for the SX Tank Farm interim barrier was to be performed in September; the work was actually accomplished in August, resulting in negative performance in September.

The October 2018 **unfavorable** SV of ($2,953,400) was due to:

- The need for alternative respiratory protection during rebar installation for the A Tank Farm exhauster manifold pad that delayed work and impacted the installation of exhausters POR-518 and POR-519 and structural steel.
- The shortage of site-qualified and trained electricians continued to slow the subcontractor's work on installing the AX Tank Farm electrical backbone.

The November 2018 **unfavorable** SV of ($2,984,800) was due to:

- The shortage of site qualified and trained electricians continued to impact the subcontractor's work on installing the AX Tank Farm electrical system. Additional electricians have been hired and have completed required site training.
- Delays in retrieval equipment installation at Tank AX-102 occurred due to electrical infrastructure scope taking longer than planned due to several obstructions found during excavation, which blocked access to areas at the AX-102 C Pit and A Pit.
- Cleanout of A-103 03C Pit was delayed until the cover block was core drilled to allow a video inspection as to the condition of the pit. Pit C contains a large amount of debris and required video inspection to assess the conditions prior to removal of the cover block.

[4] "Closure" activities are expressly excluded from the Consent Decree. See 2010 Consent Decree, Appendix C, first paragraph: "Processes not covered by a TWRWP (e.g., tank closure) are not established under this Consent Decree."

Cost Variance Summary:

The September 2018 **unfavorable** cost variance (CV) of ($5,428,700) was due to:

- A significant amount of overtime was required to complete asphalt laying for the SX Tank Farm interim barrier
- Use of additional work crews and labor overtime to recover the schedule for the installation of infrastructure equipment in support of AX Tank Farm retrievals
- Work continued to be impacted by inefficiencies associated with the use of self-contained breathing apparatus.

The October 2018 **unfavorable** CV of ($1,675,300) was due to:

- Increased work crews and the use of overtime to recover schedule during infrastructure equipment installation in support of AX Tank Farm retrievals
- Crews made multiple unsuccessful attempts to loosen three stuck thermocouples in risers at Tank AX-101
- Work continued to be impacted by inefficiencies associated with the use of self-contained breathing apparatus use.

The November 2018 **unfavorable** CV of ($117,900) was due to:

- Increased work crews and the use of overtime to recover schedule for the installation of infrastructure equipment in support of AX Tank Farm retrievals
- Work continued to be impacted by inefficiencies associated with the use of self-contained breathing apparatus use.

Retrieval Labor Hours on Self-Contained Breathing Apparatus

Tank Farms Assistant Manager: Rob Hastings

Federal Program Manager: Jeff Rambo

Labor Hours Expended on Single-Shell Tank Retrieval Self-Contained Breathing Apparatus
October 1, 2018, through December 31, 2018.

	SCBA Direct Labor Hours	SCBA Subcontractor Hours[1]	Total SST Operation Hours	Total Hours[2]	Total Percent on SCBA	Detrimental Impacts Days[3]
C Tank Farm	1,101	0	1,101	2,993	37%	56
A/AX Tank Farms	24,624	39,570	64,194	178,902	36%	58
Total	**25,725**	**39,570**	**65,295**	**181,895**	**36%**	**58**

1 Subcontractor hours include labor hours from subcontractors including North Point Electrical Contracting, Inc.; Geophysical Survey, Inc.; Fowler General Construction; American Electric; BNL Technical Services; and Intermech Inc. Improvements were made in the process for collecting subcontractor hours, resulting in more accurate accounting.

2 Includes all labor hours supporting SST farms in retrieval including support outside farm fence (Engineering, Project Management, and other support accounts).

3 Detrimental impacts are presented as the number of days in which a stop work related to SCBA use prevented field operations from continuing. It is limited to SCBA stop works only and excludes vapor impacts (i.e., AOP-15 events).

SCBA = self-contained breathing apparatus.
SST = single-shell tank.

Written Directives for Tank Farms

Written directives issued by DOE to the Tank Operations Contractor from October 1, 2018, through December 31, 2018, for work required by the Consent Decrees.

One letter of direction was issued to Washington River Protection Solutions LLC during the reporting period in reference to Contract No. DE-AC-08RV14800, *Tank Operations Contract.* The letter is listed below and a copy is attached:

1. 18-TF-0108, "Contract No. DE-AC27-08RV14800 – U.S. Department of Energy, Office of River Protection Request for Proposal and Issuance of a Not To Exceed Value for Additional Work Scope for Fiscal Year 2019," dated November 15, 2018.

Waste Treatment and Immobilization Plant Project

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

The WTP Project continues to focus on completion of the Low-Activity Waste (LAW) Facility, Balance of Facilities (BOF), and Analytical Laboratory (LAB) (collectively referred to as LBL, including direct-feed low-activity waste [DFLAW] and LBL Facility services).

As of November 2018, DFLAW modifications for the WTP Project were 57 percent complete, engineering design was 88 percent complete, procurement was 59 percent complete, and construction was 42 percent complete. As of November 2018, total LBL facilities were 69 percent complete, engineering design was 92 percent complete, procurement was 84 percent complete, construction was 86 percent complete, and startup and commissioning was 30 percent complete.

At the request of DOE, the U.S. Army Corps of Engineers (USACE) conducted a parametric analysis of certain options and funding scenarios to evaluate the likelihood of achieving certain milestones established by the Amended Consent Decree for the High-Level Waste (HLW) and Pretreatment (PT) facilities. The analysis indicated there is a low probability that DOE can meet the milestones for constructing and commissioning these facilities established by the Amended Consent Decree under the current funding profile.

The DOE Office of Project Management conducted an independent assessment of the USACE report. The Office of Project Management's assessment concluded the USACE analyses were generally accurate, although not sufficiently detailed for budget purposes and they potentially understate the funding needed to complete the HLW and PT facilities on the schedule established by the Amended Consent Decree.

Federal Project Director: Tom Fletcher

Deputy Federal Project Director: Mat Irwin[5]

Accomplishments during the Reporting Period:

- ORP participated in ongoing meetings with Ecology to discuss the tank waste mission and high-level waste approaches.
- ORP received the DFLAW replan schedule from Bechtel National, Inc. (BNI), including an updated strategy and details for meeting the interim contract milestones and associated internal baseline change proposal. The DFLAW replan schedule was implemented by BNI in October 2018.

[5] Mat Irwin was appointed Deputy Assistant Manager, Waste Treatment and Immobilization Plant Project, effective December 23, 2018.

- BNI completed an Integrated Safety Management System Phase 1 review of its commissioning programs. The review evaluated the BNI documentation that forms the basis of the programs, which will be used to commission WTP. The review was completed satisfactorily with no major deficiencies.
- Other significant accomplishments during the reporting period are noted in project reports for the PT Facility, HLW Facility, LAW Facility, BOF, and LAB.

Accomplishments Expected Next Reporting Period:

- ORP expects to meet with Ecology on a regular basis to continue to discuss the tank waste treatment mission and high-level waste treatment approaches.
- Other significant planned activities in the next reporting period are noted in project reports for the PT Facility, HLW Facility, LAW Facility, BOF, and LAB.

Issues Encountered during the Reporting Period:

- Significant issues encountered during the reporting period are noted in project reports for PT Facility, HLW Facility, LAW Facility, BOF, and LAB.

Issues Expected in the Next Reporting Period:

- Significant issues expected in the next reporting period are noted in project reports for PT Facility, HLW Facility, LAW Facility, BOF, and LAB.

Waste Treatment and Immobilization Plant Milestones

Milestone	Title	Due Date	Status
Waste Treatment and Immobilization Plant Project			
D-00A-06	Complete Methods Validations	06/30/2032	On Schedule
D-00A-17	Hot Start of Waste Treatment Plant	12/31/2033	Under Analysis[1]
D-00A-01	Achieve Initial Plant Operations for WTP	12/31/2036	Under Analysis[1]
Pretreatment Facility			
D-00A-18	Complete Structural Steel Erections Below Elevation 56′ in PT Facility	12/31/2009	Complete
D-00A-19	Complete Elevation 98′ Concrete Floor Slab Placements in PT Facility	12/31/2031	Under Analysis[1]
D-00A-13	Complete Installation of Pretreatment Feed Separation Vessels FEP-SEP-OOOO1A/1B	12/31/2031	Under Analysis[1]
D-00A-14	PT Facility Construction Substantially Complete	12/31/2031	Under Analysis[1]
D-00A-15	Start PT Facility Cold Commissioning	12/31/2032	Under Analysis[1]
D-00A-16	PT Facility Hot Commissioning Complete	12/31/2033	Under Analysis[1]
High-Level Waste Facility			
D-00A-20	Complete Construction of Structural Steel to Elevation 14′ in HLW Facility	12/31/2010	Complete
D-00A-21	Complete Construction of Structural Steel to Elevation 37′ in HLW Facility	12/31/2012	Complete
D-00A-02	HLW Facility Construction Substantially Complete	12/31/2030	Under Analysis[1]
D-00A-03	Start HLW Facility Cold Commissioning	06/30/2032	Under Analysis[1]
D-00A-04	HLW Facility Hot Commissioning Complete	12/31/2033	Under Analysis[1]
Low-Activity Waste Facility			
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

Milestone	Title	Due Date	Status
Balance of Facilities			
D-00A-12	Steam Plant Construction Complete	12/31/2012	Complete
Analytical Laboratory			
D-00A-05	LAB Construction Substantially Complete	12/31/2012	Complete

The U.S. Army Corps of Engineers' final report on its parametric analysis of certain options and funding scenarios indicated there is a low probability that DOE can meet the milestones for constructing and commissioning the PT and HLW facilities in the amended consent decree under the current funding profile. Based on the results of this analysis, DOE considers the milestones for the HLW and PT facilities as "Under Analysis." DOE also considers milestones A-1 and A-17 as being "Under Analysis" because the definition of Hot Start in Section IV-A-2 states: "'Hot Start of Waste Treatment Plant' means the initiation of simultaneous operation of the Pretreatment (PT) Facility, High-Level Waste (HLW) Facility and Low-Activity Waste (LAW) Facility (including as needed the operations of the Analytical Laboratory (LAB) and the Balance of Facilities) treating Hanford tank wastes and producing a waste glass product."

DOE = U.S. Department of Energy.
HLW = high-level waste.
LAB = analytical laboratory.
LAW = low-activity waste.
PT = pretreatment.
WTP = Waste Treatment and Immobilization Plant.

WTP Earned Value Management System Quarterly Analysis

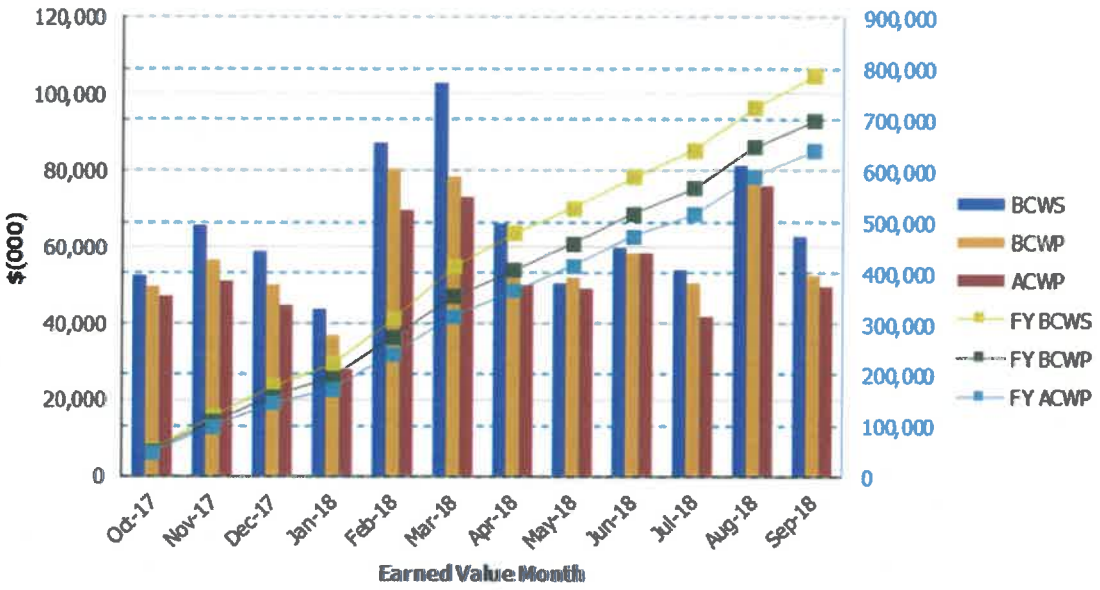
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2018 Earned Value Data

Data as of: September 2018

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 2017	$52,662	$49,804	$46,894	0.95	1.06	$52,662	$49,804	$46,894	0.95	1.06
Nov 2017	$65,935	$56,513	$51,026	0.86	1.11	$118,597	$106,317	$97,920	0.90	1.09
Dec 2017	$58,797	$50,134	$44,924	0.85	1.12	$177,394	$156,452	$142,844	0.88	1.10
Jan 2018	$43,622	$36,665	$28,076	0.84	1.31	$221,016	$193,117	$170,920	0.87	1.13
Feb 2018	$86,995	$80,565	$69,775	0.93	1.15	$308,011	$273,683	$240,695	0.89	1.14
Mar 2018	$102,749	$78,481	$72,880	0.76	1.08	$410,760	$352,163	$313,575	0.86	1.12
Apr 2018	$65,995	$52,537	$50,050	0.80	1.05	$476,755	$404,701	$363,625	0.85	1.11
May 2018	$50,537	$52,199	$49,027	1.03	1.06	$527,292	$456,900	$412,653	0.87	1.11
Jun 2018	$59,842	$58,499	$58,483	0.98	1.00	$587,134	$515,399	$471,135	0.88	1.09
Jul 2018	$53,752	$50,561	$41,973	0.94	1.20	$640,886	$565,961	$513,108	0.88	1.10
Aug 2018	$81,376	$79,255	$76,035	0.97	1.04	$722,262	$645,216	$589,143	0.89	1.10
Sep 2018	$62,937	$52,592	$49,476	0.84	1.06	$785,200	$697,808	$638,620	0.89	1.09
PTD	$11,296,794	$11,155,705	$11,022,034	0.99	1.01					

ACWP	=	actual cost of work performed.	PTD	=	project 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.

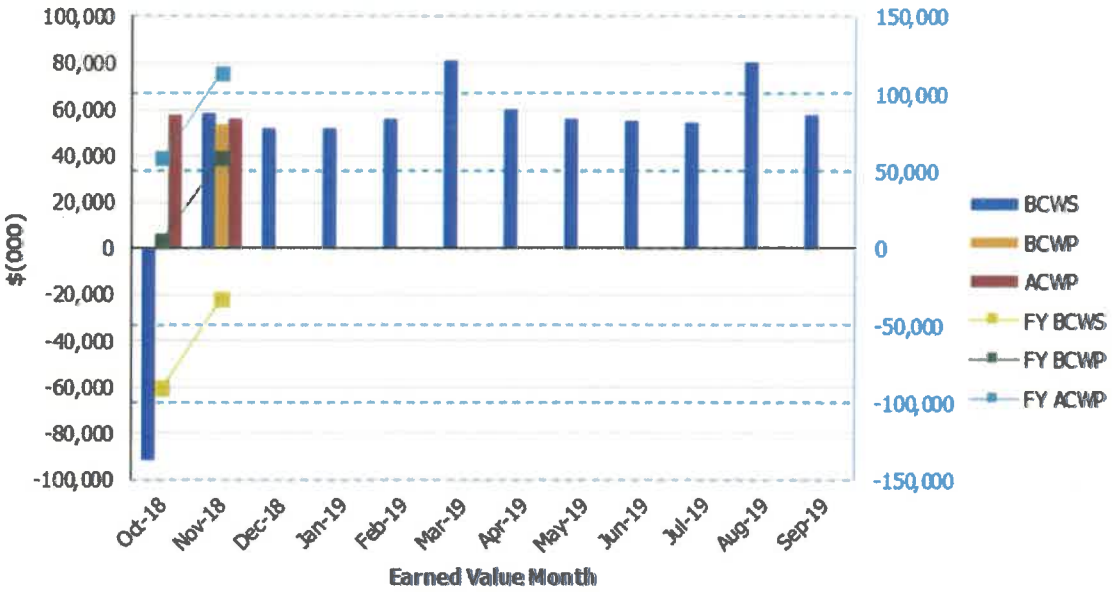
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2019 Earned Value Data

Data as of: November 2018

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 2018	($91,134)	$4,875	$57,739	-0.05	0.08	($91,134)	$4,875	$57,739	-0.05	0.08
Nov 2018	$58,216	$53,397	$55,568	0.92	0.96	($32,918)	$58,273	$113,307	-1.77	0.51
Dec 2018	$52,253									
Jan 2019	$51,501									
Feb 2019	$55,822									
Mar 2019	$80,793									
Apr 2019	$59,833									
May 2019	$55,535									
Jun 2019	$55,112									
Jul 2019	$54,679									
Aug 2019	$80,074									
Sep 2019	$57,207									
PTD	$11,263,876	$11,213,978	$11,135,340	1.00	1.01					

ACWP	=	actual cost of work performed.	PTD	=	project 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.

Performance Tracking	SV ($x1,000)	CV ($x1,000)
Cumulative (through November 2018)	($49,898)	$78,637
Fiscal Year 2019 to-date	$91,190	($55,034)
November 2018	($4,819)	($2,171)
October 2018	$96,009	($52,863)
September 2018	($10,345)	$3,116

SV = schedule variance. CV = cost variance.

Earned Value Management System Analysis

Schedule Variance Summary:

For the **September 2018** EVMS reporting period, a net **unfavorable** SV of approximately ($10.3 million) was reported, primarily due to the following:

- LAW Facility Plant Equipment reported an unfavorable SV due to a delay in the procurement of the programmable protection system. This resulted from independent testing, which determined a breaker in the system needed to be replaced.
- LAW Facility Construction craft continued to report an unfavorable SV due to delays in starting the LAW Facility Documented Safety Analysis (DSA)-related piping and electrical scope.
- LAW Facility Startup reported an unfavorable SV primarily attributing to delays in procedure development, which has been impacted by resource availability.
- BOF Construction reported a favorable SV due to the heat trace, special protective coatings, and insulation subcontractor working ahead of schedule.
- BOF Startup reported an unfavorable SV due to system startup testing delays in the chiller compressor plant and ammonia facility, along with delayed delivery of diesel fuel oil. Turnover of the ammonia facility to Startup was delayed, which temporarily paused the schedule for testing.
- LAB Construction reported a favorable SV primarily relating to the high purity gas subcontractor working ahead of schedule.
- LBL Plant Management (i.e., commissioning) continued to show an unfavorable SV due to a planned delay of staff increases. The evaluation of LBL staffing needs to support commissioning is now complete. These control accounts will begin to show the new staffing levels in the budgeting tools as a result of BNI implementing the DFLAW replan schedule in October 2018.

For the **October 2018** EVMS reporting period, a net **favorable** SV of approximately $96 million was reported, primarily due to the following:

- Implementation of the internal baseline change proposal associated with the DFLAW replan schedule drove the significantly favorable SV for the current period, which aligned the performance measurement baseline schedule to the March 2018 target plan. As part of the replan implementation:
  - Budgeted cost of work scheduled and budgeted cost of work performed were set equal to the actual cost of work performed as of March 2018, and remaining scope was aligned to the March 2018 target plan. However, cumulative variances of approximately ($33.5 million) from April through September have been retained. Plant equipment, bulk materials, construction craft (LAW Facility), and BOF/LAB startup activities were the major contributors to that unfavorable SV.
  - The replan schedule resulted in a net of approximately $256 million of scope being moved from fiscal year (FY) 2019 to FY 2020 and/or FY 2021, of which about $129 million was prior scheduled scope. This contributed to the overall favorable SV.
  - Interim contract milestone dates were unchanged by the replan schedule. However, the current Forecast schedule reflects some negative float associated with these interim contract milestones.

For the **November 2018** EVMS reporting period, a net **unfavorable** SV of approximately ($4.8 million) was reported, primarily due to the following:

- LAW Facility Construction reported an unfavorable SV due to delays in equipment deliveries, specifically the melter power supply, switchgear, pressure regulators, gas analyzers, and vacuum breakers.
- LAW Facility Commissioning reported an unfavorable SV related to delaying the initial equipment calibration scope to align in the replan schedule with LAW Facility startup testing. In addition, the delayed procurement of the mechanical handling lid equipment contributed to this unfavorable SV.
- BOF Plant Equipment reported an unfavorable SV related to Control System Emulator scope that is no longer required.
- Effluent Management Facility (EMF) Plant Material reported an unfavorable SV due to delays in pipe delivery. This SV is forecast for recovery by the end of January 2019.
- EMF Construction craft and subcontracts reported an unfavorable SV due to installation of underground radiological waste transfer lines being impacted by required coating repairs. This delayed excavations, installs, and backfills. In addition, ultrasonic testing and pre-engineered building subcontracts have all been impacted by delayed design release.
- EMF Plant Equipment reported a favorable SV primarily related to partial schedule recovery of the AL6XN vessels.

- HLW Facility Engineering reported a favorable SV due to implementation of Internal Forecast trend 18-0055, which replanned uncompleted FY 2018 scope. Items replanned for future reporting periods include, but are not limited to the following:
  - HLW rebaseline
  - Elevation 58-foot slab design
  - Updates to the preliminary fire hazard analysis
  - Plant equipment quality support.
- HLW Facility Plant Equipment reported a favorable SV due to schedule recovery for cranes, power manipulators, autosamplers, and vessels.

Cost Variance Summary:

For the **September 2018** EVMS reporting period, a net **favorable** CV of approximately $3.1 million was reported, primarily due to the following:

- LBL Plant Management (i.e., commissioning) continued to report a favorable CV because current spending priorities are different from the existing baseline. Revised commissioning spend plans have been incorporated into the DFLAW replan schedule and BNI's internal baseline change proposal, which was implemented in October 2018.
- LBL Facility Services reported a favorable CV due to the delayed procurement of communications equipment, now forecast for procurement by January 2019.
- DFLAW Construction reported a favorable CV due to concrete work scheduled for this reporting period being completed in an earlier reporting period.
- LAW Facility Startup reported an unfavorable CV due to equipment and component failures, which led to a test pause and retesting. In addition, level-of-effort work scope exceeded the plan for the reporting period.
- LAW Facility Engineering reported an unfavorable CV due to exceeding the punchlist baselined unit rates for more complex scope efforts (i.e., analytical limits, probability of failure on demand, set-point calculations, etc.).

For the **October 2018** EVMS reporting period, a net **unfavorable** CV of approximately ($52.9 million) was reported, primarily due to the following:

- Implementation of the internal baseline change proposal associated with the DFLAW replan schedule drove the significantly unfavorable CV for the current period as the budgeted cost of work scheduled and the budgeted cost of work performed were set equal to the actual cost of work performed as of March 2018. Implementation of the replan schedule resulted in:
  - An unfavorable CV for the current period of almost ($53 million), as a result of setting the budgeted cost of work performed equal to the actual cost of work performed, as much of the budgeted cost of work performed value was overstated related to level-of-effort scope and not working to the baselined scope.

- The cumulative favorable CV of approximately $16 million for April through September was retained and is related to prior Project Services allocations, which also factored in some negative performance in LAW Facility Engineering, procurement staff, startup, and construction labor accounts.

For the **November 2018** EVMS reporting period, a net **unfavorable** CV of approximately ($2.2 million) was reported, primarily due to the following:

- BOF Commissioning reported an unfavorable CV related to emergent corrective maintenance in support of Startup testing.
- EMF Engineering reported an unfavorable CV related to an earnings correction in the period for controls and instrumentation procurement support, as well as training and management support costing more than planned.
- EMF Procurement reported an unfavorable CV due to delayed procurements, and the staffing level remains above plan for FY 2019.
- HLW Facility Engineering, Design Authority, and Nuclear Safety Engineering reported a favorable CV due to a delay in obtaining budgeted resources associated with level-of-effort restart planning.

WTP Project Cumulative through November 2018

The WTP Project is behind the planned work scheduled by approximately ($49.8 million) through November 2018, but it has cost approximately $78.6 million less to perform the work than originally estimated. The cumulative-to-date SVs and CVs are reported against the LBL/DFLAW Performance Measurement Baseline.

Note: Because the HLW Facility, PT Facility, and Project Services baselines have not been updated since 2012, the variances for the PT Facility and Project Services are reported against interim 2-year BNI work plans, while the HLW Facility is reported against a 5-year work plan (also referred to as the Internal Forecast).

Pretreatment Facility

Federal Project Director: Tom Fletcher

Facility Federal Project Director: Wahed Abdul

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, engineering design was 85 percent complete, procurement was 56 percent complete, construction was 43 percent complete, and startup and commissioning was 3 percent complete. The physical percent complete analysis for the PT Facility was frozen in September 2012, pending development of a revised baseline to address technical and design issues.

ORP and BNI continue to work on resolving the remaining technical issues identified in the "Third Order Regarding Motions to Modify Consent Decrees,"[6] which includes "Ensuring Control of the Pulse Jet Mixers" (i.e., T4 in relation to pulse-jet mixer [PJM] vessel mixing and control); "Protecting Against Possible Erosion and Corrosion" (i.e., T5 in relation to erosion/corrosion in piping and ancillary vessels); and "Ensuring Ventilation Balancing" (i.e., T8 in relation to facility ventilation/process offgas treatment).[7]

Preliminary engineering work, documented previously in a BNI and ORP study, was completed and demonstrates how the standard high-solids vessel (SHSV) design can be implemented in the PT Facility (i.e., T6 in relation to design redundancy and in-service inspection). The engineering study showed that 16 SHSVs could be incorporated into the PT Facility, while meeting the PT Facility throughput contract requirements.

A previously documented engineering study provided technical support for a determination that the PT Facility vessel vent process system could support normal and post-design basis event operations of the SHSV concept design alternative (i.e., T8).

Testing and assessments for the resolution of the remaining PT Facility technical issues are mostly complete. The erosion/corrosion technical issue (T5) is being updated to correct a calculation error. An update of the calculation to support resolution of T5 is expected to be completed in the third quarter of FY 2019.

A final peer review in December 2018, addressing the vessel mixing concerns associated with PJMs (T4), resulted in the need to develop additional documentation and is expected to be completed in the second quarter of FY 2019. Final resolution of T4 is expected to be completed in the third quarter of FY 2019.

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[6] *State of Washington v. Dept. of Energy*, No: 2:08-CV-5085-RMP (March 11, 2016) (ECF-221).

[7] At the outset of the U.S. Department of Energy's identification of the technical issues, the issues were grouped into eight issues. During the litigation, some issues were combined with others creating five groups of issues. Consequently, the descriptions of the issues listed above may be both different by number and somewhat different by description.

Quarterly Statement: There are no missed milestones that may affect compliance with other milestones.

Accomplishments during the Reporting Period:

- ORP continued to work with BNI on completing final resolution documentation for the remaining open technical issue related to PJM vessel mixing and control (T4).
- BNI issued documentation to support completion of endpoint deliverables for the technical issue related to erosion/corrosion (T5).
- BNI continued to implement ongoing asset maintenance at the PT Facility to protect equipment and structures and ensure design documents are maintained.

Accomplishments Expected in the Next Reporting Period:

- BNI is expected to issue the calculation to validate the analytical method for requirements verification of installed low solids PJM vessels (i.e., T4 in relation to PJM vessel mixing and control) in the second quarter of FY 2019.
- BNI is expected to issue the update to the calculation to support resolution of the erosion/corrosion technical issue (i.e., T5 in relation to erosion/corrosion in piping and ancillary vessels) in the third quarter of FY 2019.
- ORP intends to submit resolution of technical issues T4 and T5 to the Defense Nuclear Facilities Safety Board (DNFSB) in the third quarter of FY 2019. The resolution of the technical issues is likely to require significant design changes to the PT Facility.
- BNI will continue to implement ongoing asset maintenance at the PT Facility to protect equipment and structures and ensure design documents are maintained.

Issues Encountered during the Reporting Period:

- The PT Facility planned work was reprioritized because of the need for additional resources to support DFLAW/LBL activities. Reduced resources resulted in a slower pace on technical issue resolution related to erosion/corrosion in piping and vessels and progression of the conceptual design incorporating the SHSV test design prototype.
  - *Impact*: Delay in completing PT Facility technical issue resolution and redesign activities.
  - *Actions initiated or taken to address potential project schedule slippage*: ORP is analyzing the potential impacts of continued funding limitations on the WTP Project by considering the USACE parametric analysis, the Office of Project Management's independent assessment of the USACE's parametric analysis, the BNI parametric analysis, the PT Facility workshop discussions, and other inputs as appropriate.

Issues Expected in the Next Reporting Period:

- The PT Facility planned work will continue to be reprioritized due to increased focus on higher priority DFLAW/LBL activities.
  - *Impact*: The PT Facility redesign is likely to continue to be delayed.

Status of Outstanding WTP Technical Issues

ORP has determined the nuclear safety technical issues, "Preventing Potential Hydrogen Build-Up" (i.e., T1 and T3) and "Preventing Criticality" (i.e., T2) have been sufficiently resolved to allow engineering to proceed in support of design and safety basis development. Work will continue on resolving remaining technical issues, "Ensuring Control of the Pulse Jet Mixers" (i.e., T4), "Protecting against Possible Erosion and Corrosion" (i.e., T5), and "Ensuring Ventilation Balancing" (i.e., T8). Resolution of the remaining technical issues, with notification to the DNFSB, is expected in the third quarter of FY 2019.

ORP worked with BNI to develop closure packages for each technical issue, defining workscope, required deliverables, and technical issue closure criteria. The status of each of the five technical issues identified in the Third Order Regarding Motions to Modify Consent Decrees is provided below:

- ***Preventing Potential Hydrogen Build-Up:***
  - *Issue*: This issue encompasses two separate but related hydrogen risks:
    - Risk of combustion in vessel headspace due to hydrogen accumulation (i.e., T1).
    - Risk of hydrogen in piping and ancillary vessels that could lead to a hydrogen deflagration or detonation in a piping system (i.e., T3).
  - *Status*:
    - *Hydrogen in Vessels*: As noted in previous quarterly reports, this technical issue has been sufficiently resolved to allow engineering to proceed in support of design and safety basis development.
    - *Hydrogen in Piping and Ancillary Vessels*: As noted in previous quarterly reports, this technical issue has been sufficiently resolved to allow engineering to proceed in support of design and safety basis development.
- ***Preventing Criticality***:
  - *Issue*: A total of 16 Hanford waste tanks may contain plutonium particles of the size and density that makes them prone to settling in a WTP process vessel into a configuration that could result in an inadvertent criticality event (i.e., T2).
  - *Status*: As noted in previous quarterly reports, this technical issue has been sufficiently resolved to allow engineering to proceed in support of design and safety basis development.

- ***Ensuring Control of the PJM:***
  - *Issue*: Concern with adequacy of PJMs and PJM controls to adequately mix high-solids slurries in PT Facility process vessels (i.e., T4 ["Ensuring Control of the Pulse Jet Mixers"]).
  - *Status*:
    - As noted in previous reports, BNI conducted a test program to demonstrate the ability of PJM vessels to adequately mix high-solids slurries in the PT Facility. Results from the first and second phase of PJM control system testing were previously provided. The final phase of PJM control system testing is complete.
    - ORP and BNI identified a proposed PJM mixing SHSV design to replace a number of vessel designs in the PT Facility. A prototype of the 16-foot-diameter SHSV design was commissioned for the final stage of PJM control system testing to support resolution of PJM mixing and control issues applicable to vessels with high-solids concentrations and non-Newtonian slurries. Testing demonstrated the required PJM control parameters and control approach to be used during the qualification of the design for the SHSV implementation. PJM controls testing was completed in April 2017. Mixing testing was completed in September 2017. BNI completed data analysis and documentation for the completed full-scale PJM mixing system testing and the results from the final stage testing are expected to provide the required design and operations information to perform PT Facility design.
    - A final peer review in December 2018, addressing the vessel mixing concerns associated with PJMs (T4), resulted in the need to develop additional documentation and is expected to be completed in the second quarter of FY 2019. ORP intends to submit resolution of technical issues T4 and T5 to the DNFSB in the third quarter of FY 2019.
- ***Protecting against Possible Erosion and Corrosion***:
  - *Issue*: Uncertainties exist in waste feed characteristics and the ability to meet a 40-year service life, requiring confirmation of the erosion/corrosion design basis, including margin, through testing and analysis (i.e., T5).
  - *Status*:
    - BNI developed an engineering study for jet impingement erosion in PJM vessels.
    - BNI developed an engineering calculation to address localized erosion wear allowance for PJM vessels.
    - Laboratory scale corrosion testing to assess localized corrosion material degradation mechanisms is complete. This testing involved immersion of small metal samples in fluids representing anticipated WTP chemistries. Material degradation mechanisms evaluated included pitting, crevice cracking, and stress cracking.
    - A testing program to provide the technical information to underpin the design basis for erosion and corrosion was implemented.

- A WTP basis of design change notice establishing the erosion/corrosion basis of design parameters was issued.
- A pipe loop test platform to evaluate wear in piping is complete and the test plan is in final development. Additional assessments are being made to determine how much of this testing is required.
- The erosion/corrosion technical issue (T5) is being updated to correct a calculation error. An update of the calculation to support resolution of T5 is expected to be complete in April, the third quarter of FY 2019. ORP intends to submit resolution of technical issues T4 and T5 to the DNFSB in the third quarter of FY 2019.

- ***Ventilation System:***
  - *Issue*: There are multiple technical challenges associated with the PT Facility ventilation system, including cascading airflows from lower to higher contaminated areas and performance of high-efficiency particulate air (HEPA) filters (i.e., T8).
  - *Status*:
    - Resolution of this technical issue required completing engineering/nuclear safety assessments to ensure the PT Facility ventilation system meets performance requirements, which was completed following completion of PJM testing and its ventilation demands.
    - HEPA filter design and qualification testing have been performed and reported under the HLW Facility section. Several filter designs were under consideration for testing and qualification. One of the filter designs has successfully completed Nuclear Quality Assurance-1 qualification testing at Mississippi State University for all WTP normal and off-normal conditions. Based on the successful filter design bounding all WTP normal and off-normal conditions, it was concluded that alternative filter designs and testing were not required. Testing of HEPA filters to ensure they can withstand environmental conditions and loading during normal and off-normal operating conditions is complete.
    - A previously documented engineering study provided technical support for a determination that the PT Facility's vessel vent process system could support normal and post-design basis event operations of the SHSV concept design alternative (i.e., T8).

High-Level Waste Facility

Federal Project Director: Tom Fletcher

Facility Federal Project Director: Wahed Abdul

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, engineering design was 89 percent complete, procurement was 81 percent complete, construction was 43 percent complete, and startup and commissioning was 4 percent complete. The physical percent complete analysis for the HLW Facility was frozen in September 2012, pending development of a revised baseline to address technical and design issues.

Work on the HLW Facility is being performed in accordance with the FY 2017 through FY 2021 Interim Work Plan, which initially was for work primarily associated with asset maintenance and key ongoing procurement activities. With the receipt of increased funding in FY 2018 (noted below), additional engineering workscope was performed and is planned for FY 2019 in anticipation of receiving engineering resources from DFLAW/LBL activities.

Quarterly Statement: There are no missed milestones that may affect compliance with other milestones.

Accomplishments during the Reporting Period:

- BNI continued to implement the plan that ORP approved to develop limited engineering design products for FY 2019 based on carry-over funding from the HLW Facility in the *Consolidated Appropriations Act, 2018.*
- BNI is updating the hydrogen mitigation strategy in support of the safety basis.
- ORP participated in ongoing meetings with Ecology to discuss the tank waste mission and high-level waste treatment approaches.
- BNI continued fabrication of radioactive liquid waste disposal vessels RLD-7 and RLD-8 to support expected delivery in FY 2019. These vessels are to be installed in the wet process cell to allow concrete slab placement above the wet cell. This activity supports roof installation and building enclosure.
- BNI continued to focus on implementing asset maintenance at the HLW Facility to protect equipment and structures and ensure design documents are maintained.

Accomplishments Expected in the Next Reporting Period:

- In accordance with the funding received for the HLW Facility in the FY 2018 congressional appropriation (noted above), BNI continues to ramp-up engineering design activities on key mechanical and process systems for the HLW Facility. Engineering

resources are being hired and transitioned from DFLAW/LBL modifications, as available.

- ORP expects to meet with Ecology on a regular basis to continue to discuss the tank waste treatment mission and high-level waste treatment approaches.
- ORP expects to brief Ecology in the second quarter of 2019 on the resolution of Ecology holds on the radioactive liquid waste disposal system.
- BNI will continue to implement ongoing asset maintenance at the HLW Facility to protect equipment and structures and ensure design documents are maintained.

Issues Encountered during the Reporting Period:

- The HLW Facility planned work has been reprioritized because of the need for additional resources to support DFLAW/LBL activities. Reduced resources resulted in limited engineering assets to perform production work and in construction curtailment. Reprioritizing work activities impacted design and construction such that installation of roofing and siding on the facility was delayed.
  - *Impact*: Delay in completing HLW Facility redesign activities.
  - *Actions initiated or taken to address potential project schedule slippage*: In accordance with the additional funding received for the HLW Facility in the *Consolidated Appropriations Act, 2018*, enacted on March 23, 2018, BNI has developed a plan for additional activities for the HLW Facility in FY 2019. Engineering resources from DFLAW/LBL modifications will be transitioned to support production engineering efforts for the HLW Facility as they become available.

Issues Expected in the Next Reporting Period:

- The HLW Facility planned work is impacted by the delay of engineering resources transitioning from higher priority DFLAW/LBL activities. Engineering resource will continue to transition to HLW activities as they complete their DFLAW/LBL activities. The impact of this delay is expected to continue into the next reporting period.
  - *Impact*: The HLW Facility redesign will progress only to the extent that additional funding and engineering resources allow.
  - *Actions initiated or taken to address potential project schedule slippage*: As discussed above, BNI has developed a plan for additional HLW Facility activities, in accordance with the additional funding received for the HLW Facility in the *Consolidated Appropriations Act, 2018*. BNI expects to continue implementing that plan in the next reporting period.
- BNI will continue seeking and transitioning engineering resources to support HLW Facility engineering restart.

Low-Activity Waste Facility[8]

Federal Project Director: Tom Fletcher

Facility Federal Project Director: Wahed Abdul

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 2018, the LAW Facility was 74 percent complete overall, engineering design was 93 percent complete, procurement was 89 percent complete, construction was 95 percent complete, and startup and commissioning was 18 percent complete.

Recent BNI efforts at the LAW Facility have focused on incorporating design changes, development of safety basis for the design changes, procurement, and construction of the remaining open items from the LAW Facility DSA changes. Additionally, Construction is walking down completed systems with the Startup organization in support of turnover to Startup for testing and subsequent handover to the Plant Management organization. To date, more than half of the LAW Facility systems have been turned over from Construction to the Startup organization.

Quarterly Statement: There are no missed milestones that may affect compliance with other milestones.

Accomplishments during the Reporting Period:

- BNI completed development of the Specialized Requirements Verification Matrix process used to verify that systems, structures, and components meet the safety and quality functional requirements identified in the LAW Facility DSA. Initial reviews of the Specialized Requirements Verification Matrix pilot program implemented in October 2018, demonstrated this process can be used to determine that commercial grade dedication (CGD) evaluations performed by BNI are aligned with the approved LAW Facility DSA.
- BNI Engineering completed its quality assurance review of Requirements Verification Phase 1 and completed selection of cyber security controls.

[8] Information about the related Low-Activity Waste Pretreatment System and tank-side cesium removal is included in the monthly reports submitted under the *Hanford Federal Facility Agreement and Consent Order* (also known as the Tri-Party Agreement or TPA).

- BNI Engineering completed its review of the following CGD extent of condition priority 1 documents:
  - System design description for the LAW Facility primary offgas process
  - LAW Facility secondary offgas/vessel vent process system.
- BNI issued a request for proposal for the LAW Facility spare melter and received the following procurements from vendors:
  - Safety-significant on/off valves integral solenoid and limit switch
  - Pressure safety valve for the sodium hydroxide reagent system
  - Process gas analyzers and continuous emissions monitoring system
  - Safety-significant function temperature elements for the melter No. 2 power supply
  - Distribution panels and breakers
  - Refurbished LAW Facility melter No. 1 power supply
  - Instrument tub fittings.
- BNI Construction completed the 3-week walkdowns in support of turning the following systems over to the Startup organization:
  - Plant cooling water system (PCW-L-01)
  - LAW Facility container export handling system (LEH-L-01)
  - C2 ventilation system (C2V-L-01)
  - Breathing service air system (BSA-L-01)
  - LAW Facility container pour handling system (LPH-L-01)
  - LAW Facility melter handling system (LMH-L-01)
  - Radioactive solid waste handling system (RWH-L-01)
  - LAW Facility melter equipment support handling system (LSH-L-01)
  - Process and mechanical handling closed circuit television system (PTJ-L-01).
- BNI's Startup organization accepted turnover of the following systems from the Construction organization:
  - LAW Facility container receipt handling system (LRH-L-01)
  - LAW Facility annex lights (LTE-L-02)
  - Plant cooling water systems 1, 3, and 4 (PCW-L-01, PCW-L-03, and PCW-L04)
  - C5 ventilation system (C5V-L-01)
  - LAW Facility melter handling system (LMH-L-01)
  - Mechanical handling control system (MHJ-L-01)
  - Autosampling system (ASX-L-01)
  - Plant cooling water system (PCW-L-05)
  - Glass formers reagent system (GFR-L-01).
- BNI's Operations organization accepted handover of the following building area:
  - B20-L-06 – LAW Facility annex.

Accomplishments Expected in the Next Reporting Period:

- BNI is expected to receive the following procurements from vendors:
  - Input switchgear cabinets for melter power supply
  - Refurbish LAW Facility melter No. 2 power supply
  - Programmable protection system hardware and remote alarms
- BNI Construction expects to complete the 3-week walkdowns in support of turning the following systems over to the Startup organization:
  - LAW Facility primary offgas process system (LOP-L-02)
  - Radiological personnel monitoring system (RPJ-L-01)
  - Environmental monitoring system (EMJ-L-01)
  - LAW Facility concentrate receipt process systems 1 and 2 (LCP-L-01, LCP-L-02)
- BNI Construction is expected to install the power supply unit for melter No. 1
- BNI's Startup organization expects to accept the following systems turned over from the Construction organization:
  - Radioactive solid waste handling system (RWH-L-01)
  - Breathing service air system (BSA-L-01)
  - C2 ventilation system (C2V-L-01)
  - LAW Facility melter equipment support handling system (LSH-L-01)
  - Process and mechanical handling closed circuit television system (PTJ-L-01)
  - LAW Facility container pour handling system (LPH-L-01)
  - Radioactive liquid waste handling system (RLD-L-01)
  - C3 ventilation system (CV3-L-01)
  - LAW Facility container finishing handling systems 1 and 2 (LFH-L-01, LFH-L-02)
  - LAW Facility concentrate receipt process systems 1 and 2 (LCP-L-01, LCP-L-02):
    - As systems continue to be turned over, functional and system testing will be performed to support handover to plant management.

Issues Encountered during the Reporting Period:

- The concern with BNI's CGD Program noted in previous reports remains an issue for the WTP Project.
  - *Impact*: Deficiencies in BNI's CGD Program may put some of the equipment purchased for the LAW Facility at risk, including equipment that performs a specific safety function in the LAW Facility.
  - *Actions expected to be initiated or taken to address potential project schedule slippage*:
    - Updated CGD plans are being developed to streamline the CGD verification of equipment to ensure it meets the updated safety function requirements in the LAW Facility DSA.

- Material requisitions with vendors are in the process of being revised or reestablished to incorporate the updated safety function requirements in the LAW Facility DSA.
- CGD plans produced by both vendors and WTP are in the process of being updated; additional documentation and testing may be required to meet the updated safety function requirements in the LAW Facility DSA.

Issues Expected in the Next Reporting Period:

- There are minor concerns with BNI completing the CGD verification of equipment process (noted above) by the target date of March 2019.
  - *Actions expected to be initiated or taken to address potential project schedule slippage*: BNI and ORP have increased staffing efforts to meet the target date. Progress is monitored on a weekly basis.
- Completion of simulator software and procedures associated with Loss of Power testing has been identified as a risk.
  - *Actions expected to be initiated or taken to address potential project schedule slippage*: While testing is not scheduled until August 2020, BNI is providing senior-level attention to support the timely completion of operator training.

Balance of Facilities

Federal Project Director: Tom Fletcher

Facility Federal Project Director: Jason Young

BOF will provide services and utilities to support operation of the main production facilities: PT, HLW, LAW, and LAB. As of November 2018, BOF was 78 percent complete overall, engineering design was 94 percent complete, procurement was 95 percent complete, construction was 87 percent complete, and startup and commissioning was 53 percent complete. Design of the EMF was 95 percent complete.

BNI engineering efforts are focused on confirming EMF design, supporting EMF procurement activities, and providing field support for BOF startup activities. Construction efforts are focused on the installation of EMF pipe racks; piping; and heating, ventilation, and air-conditioning ducting. Startup testing continues for systems in the steam plant and chiller compressor plant.

The BOF systems are designed to support operation of the entire WTP, and construction is complete for the majority of BOF systems. To improve operational flexibility and support WTP operations in a DFLAW configuration, additional construction and facility modifications are required. Operational flexibility improvements to the BOF include:

- Design and construction of an EMF to concentrate effluents from the LAW Facility, allow transfer of secondary effluent stream to the Liquid Effluent Retention Facility/Effluent Treatment Facility, and provide a low-point drain for potential contaminated systems during DFLAW operations
- Addition of a fourth rotary screw air compressor to the chiller compressor plant and piping reconfigurations to optimize operations at a reduced facility output level
- Modifications to steam plant piping and equipment to optimize operations at a reduced facility output level
- Construction of a fenced area to separate the portion of WTP actively operating in a DFLAW configuration from construction activities for the HLW and PT facilities
- Improved isolation capabilities for BOF systems to maintain safe control and isolation within the DFLAW operations area.

Quarterly Statement: There are no missed milestones that may affect compliance with other milestones.

Accomplishments during the Reporting Period:

- BNI completed protective coatings application for the low-point drain vessel area.
- BNI completed installation of the low-point drain vessel.
- BNI continued installation of structural steel in the low-point drain vessel area.

- BNI completed installation of an equipment support platform in the EMF evaporator feed vessel area.
- BNI initiated construction of piping and equipment supports in the EMF evaporator feed vessel area.
- BNI initiated installation of piping in the EMF evaporator feed vessel area.
- BNI received the EMF evaporator feed vessel.
- BNI completed turnover of the BOF low-voltage electrical system that supports the ammonia reagent system from Construction to Startup.
- BNI received three EMF evaporator concentrate receipt vessels.
- BNI completed placement of the EMF secondary reboiler in the C3 secondary reboiler and condenser area.
- BNI completed installation of the roof for the EMF C3 secondary reboiler and condenser area, and installed the B-decking to support weathering in the area.
- BNI completed weathering in of the EMF C3 secondary reboiler and condenser area.
- BNI completed placement of the EMF primary reboiler in the EMF C5 evaporator cell.
- BNI completed placement of the EMF evaporator and tower assembly in the EMF C5 evaporator cell.
- BNI completed placement of the EMF evaporator feed filter and platform in the EMF C5 evaporator cell.
- BNI completed installation of structural steel to support the roof of the EMF C5 evaporator cell.
- BNI completed installation of the EMF C5 evaporator cell roof structure.
- BNI completed installation of B-decking as part of weathering in the EMF C5 evaporator cell.
- BNI completed weathering in the EMF C5 evaporator cell.
- BNI continued startup testing of the BOF chilled water system.
- BNI continued startup testing of the BOF steam systems.
- BNI continued startup testing of the BOF plant service air system.

Accomplishments Expected in the Next Reporting Period:

- BNI Construction expects to continue installation of piping; along with heating, ventilation, and air-conditioning ducting at EMF.
- BNI Construction is expected to place the concrete roof structure above the low-point drain vessel area.

Issues Encountered during the Reporting Period:

- The EMF overall construction schedule is being challenged by the late arrival of bulk materials (piping, valves, and structural steel) and the compact configuration of the facility.
  - *Impact*: Delays to the EMF construction schedule narrow the available periods for startup testing and commissioning of EMF. However, the effect of the delays in the project schedule are not anticipated to affect DOE's ability to achieve Amended Consent Decree milestones for the LAW Facility at this time.
  - *Actions initiated or taken to address potential project schedule slippage*:
    - BNI is constructing large items, such as the C3 and C5 roof structures, outside of the EMF footprint to minimize interferences and disruptions during installation.
    - BNI is accelerating discrete work items such as the C3 and C5 roof structures where possible.
    - A night shift has been initiated to accelerate completion of pipe installation and de-conflict work interferences between the installations of different commodity types.
    - BNI is communicating daily with vendors in an effort to improve quality and accelerate delivery.
- The installation of waste transfer piping has been delayed due to the identification of manufacturing defects and inadequate verification testing by the piping supplier.
  - *Impact*: This issue is not currently affecting the overall DFLAW schedule, but the effort required to correct the situation is substantial. No impact is anticipated on DOE's ability to achieve Amended Consent Decree milestones for the LAW Facility at this time.
  - *Actions initiated or taken to address potential project schedule slippage*:
    - BNI is working with the vendor to repair identified manufacturing defects
    - BNI is working with the vendor to correct and verify the procedures that resulted in testing errors.

Issues Expected in the Next Reporting Period:

- Continued challenges with the delivery of bulk construction materials for EMF, as described above.
- Continued challenges with waste transfer piping repair, retesting, and installation, as described above.

Analytical Laboratory

Federal Project Director: Tom Fletcher

Facility Federal Project Director: Jason Young

The LAB will support WTP operations by analyzing feed, vitrified waste, and effluent streams. As of November 2018, the LAB was 75 percent complete overall, engineering design was 91 percent complete, procurement was 92 percent complete, construction was 98 percent complete, and startup and commissioning was 30 percent complete.

Activities in the LAB are focused on system turnovers and startup testing of LAB systems. To date, BNI has completed the turnover for 34 of 35 systems to the Startup organization. Procedure and methods development continues at the offsite laboratory facility, and BNI is preparing to move a limited amount of analytical equipment onsite to the LAB. The LAW Facility Annex continues to support startup testing for systems in LBL.

Quarterly Statement: There are no missed milestones that may affect compliance with other milestones.

Accomplishments during the Reporting Period:

- BNI Construction completed turnover of the LAB closed circuit television system to Startup.
- BNI Construction completed turnover of the LAB potable water system to Startup.
- BNI completed turnover of the following systems from Construction to Startup:
  - LAB bottled argon gas system
  - LAB bottled helium gas system
  - LAB bottled nitrogen gas system.
- BNI Construction has completed the turnover of all mechanical systems in the LAB to Startup.
- BNI completed handover of the LAB office space and general building areas to the operations organization. This allows the initial installation of limited analytical equipment.
- BNI continued component and system startup testing.
- BNI continued offsite activities to progress LAB procedure development and analytical method validation.

Accomplishments Expected in the Next Reporting Period:

- BNI is expected to continue startup testing of LAB systems and handover of systems to Operations when startup testing of systems is complete.

Issues Encountered during the Reporting Period:

- None.

Issues Expected in the Next Reporting Period:

- None.

Written Directives for WTP

Written directives given by DOE to the WTP contractor from October 1, 2018, through December 31, 2018, for work required by the Consent Decrees.

Eight letters of direction were issued to BNI during the reporting period in reference to Contract No. DE-AC27-01RV14136, *Design, Construction, and Commissioning of the Hanford Tank Waste Treatment and Immobilization Plant*. The letters are listed below and copies are attached:

- 18-WTP-0120, "Contract No. DE-AC27-01RV14136 – Response to Bechtel National, Inc., Request Regarding Activity Milestone A-5, LBL Physical Plant Complete," dated October 10, 2018
- 18-CPM-0143, "Contract No. DE-AC27-01RV14136 – Approval of Bechtel National, Inc., Revised Commercial Grade Dedication Extent of Condition Review Plan and Transmittal of Contract Modification 438 – Increase in the Not-To-Exceed Value for Performing Extent of Condition Reviews," dated October 11, 2018
- 18-WTP-0133, "Contract No. DE-AC27-01RV14136 – Approval of Bechtel National, Inc., Revised Contract Deliverable 1.2 – 24590-WTP-PL-TE-01-012, Revision 9, Project Execution Plan," dated November 12, 2018
- 18-WSC-0083, "Contract No. DE-AC27-01RV14136 – U.S. Department of Energy's Intent to Revise Contract Section C, to Remove Requirement to Use Carbon Dioxide for Low-Activity Waste Decontamination," dated November 14, 2018
- 18-NSD-0031, "Contract No. DE-AC27-01RV14136 – Approval of the Bechtel National, Inc., Safety Evaluation Process, 24590-WTP-GPP-RANS-NS-0002, Revision 5," dated November 17, 2018
- 18-WTP-0134, "Contract No. DE-AC27-01RV14136 – Approval of Baseline Change Proposal 24590-WTP-TN-PC-18-0139, Implementation of ASME B13.3 Code Break in EMF Low-Point Drain Bldg," dated November 19, 2018
- 18-WSC-0089, "Contract No. DE-AC27-01RV14136 – Cancellation of Waste Treatment and Immobilization Plant Hot Commissioning Operations Authorization Agreement Between the U.S. Department of Energy, Office of River Protection and Bechtel National, Inc.," dated December 6, 2018
- 18-QAD-0081, "Contract No. DE-AC27-01RV14136 – Concurrence with Bechtel National, Inc., Proposed Commercial Grade Dedication Corrective Action Plan Closure," dated December 14, 2018.

Enclosure

(11 Pages Excluding Cover Sheet)

Written Directives from October 1, 2018, through December 31, 2018

OFFICE OF RIVER PROTECTION
P.O. Box 450, MSIN H6-60
Richland, Washington 99352

NOV 15 2018

18-TF-0108

Ms. Katie A. Downing, Contracts Manager
Washington River Protection Solutions LLC
2425 Stevens Center Place
Richland, Washington 99354

Ms. Downing:

CONTRACT NO. DE-AC27-08RV14800 – U.S. DEPARTMENT OF ENERGY, OFFICE OF RIVER PROTECTION REQUEST FOR PROPOSAL AND ISSUANCE OF A NOT TO EXCEED VALUE FOR ADDITIONAL WORK SCOPE FOR FISCAL YEAR 2019

The purpose of this letter is to request two contract change proposals for the Phase 1 work scope and the Phase 2 work scope identified in the attached table. With the additional appropriation for Fiscal Year (FY) 2019, the Office of River Protection (ORP) and Washington River Protection Solutions LLC (WRPS) have collaborated to define this work scope to accelerate Tank Farms mission.

To make best use of the additional funding, this advance work authorization includes a not-to-exceed (NTE) value of $10,875,000 for Phase 1 work scope and for two items to be accelerated from a previous contract change proposal containing FY 2020 work scope, as indicated in the attached table.

WRPS is requested to:

- Transmit the Phase 1 contract change proposal by January 31, 2019, defining urgent work scope that must commence immediately to allow completion within the remaining contract term.
- Transmit the Phase 2 contract change proposal by February 14, 2019, defining the FY 2019 additional work scope.

ORP and WRPS have identified additional work scope from a previous WRPS proposal for FY 2020 that will be accelerated into FY 2019, which is indicated in the third table of the attachment. ORP will perform the necessary reviews and negotiations and issue the contract modification for this work scope.

NOV 15 2018

If you have any questions, please contact me, or your staff may contact Stephen H. Pfaff, Acting, Director, Tank Farms Programs, at (509) 376-2188.

Wade E. Hader
Contracting Officer

TF:SHP

Attachment

cc w/attach:
P.K. Brockman, WRPS
J.R. Eschenberg, WRPS
C.A. Simpson, WRPS
WRPS Correspondence

OFFICE OF RIVER PROTECTION
P.O. Box 450, MSIN H6-60
Richland, Washington 99352

OCT 10 2018

18-WTP-0120

Mr. C.K. Binns
Business Services Manager
Bechtel National, Inc.
2435 Stevens Center Place
Richland, Washington 99354

Mr. Binns:

CONTRACT NO. DE-AC27-01RV14136 – RESPONSE TO BECHTEL NATIONAL, INC. REQUEST REGARDING ACTIVITY MILESTONE A-5, LBL PHYSICAL PLANT COMPLETE

Reference: BNI letter from C.K. Binns to R.L Dawson, ORP, "BNI Response to ORP Validation of Completion of Milestone Activity A-5, LBL Physical Plant Complete," CCN: 308612, dated August 17, 2018.

In accordance with the Bechtel National, Inc. (BNI) request for U.S. Department of Energy, Office of River Protection (ORP) to reconsider determination of the completion date for the Milestone A-5, *LBL Physical Plant Complete* (Reference), ORP has met with BNI and re-evaluated the completion determination. Based on the re-evaluation and the subsequent communication with BNI, ORP concluded that the A-5 milestone completion date is July 13, 2018, as originally stated.

If you have any questions, please contact Wahed Abdul, Federal Project Director for Low-Activity Waste, High-Level Waste, and Pretreatment facilities, at (509) 438-0455.

Ronnie L. Dawson
Contracting Officer

Thomas W. Fletcher
Assistant Manager, Federal Project Director
Waste Treatment and Immobilization Plant

WTP:WA

cc: BNI Correspondence

OFFICE OF RIVER PROTECTION
P.O. Box 450, MSIN H6-60
Richland, Washington 99352

OCT 1 1 2018

18-CPM-0143

Mr. C.K. Binns
Business Services Manager
Bechtel National, Inc.
2435 Stevens Center Place
Richland, Washington 99354

Mr. Binns:

CONTRACT NO. DE-AC27-01RV14136 – APPROVAL OF BECHTEL NATIONAL, INC. REVISED COMMERCIAL GRADE DEDICATION EXTENT OF CONDITION REVIEW PLAN AND TRANSMITTAL OF CONTRACT MODIFICATION 438 - INCREASE IN THE NOT-TO-EXCEED VALUE FOR PERFORMING EXTENT OF CONDITION REVIEWS

References:

1. ORP letter from T.W Fletcher and R.E. Cone to C.K. Binns, BNI, "Revised Direction for Completing the Commercial Grade Dedication Extent of Condition Review Authorized by Contract Modification 397," 18-CPM-0106, dated July 19, 2018.

2. BNI letter from C.K. Binns to R.L. Dawson, ORP, "Transmittal of 24590-WTP-PL-ENG-16-0003, Rev. 1, Extent of Condition Plan for Review of CGD Documentation for RCA-MGT-0038 CA, for ORP Approval, CCN: 308032, dated October 1, 2018

3. BNI letter from C.K. Binns to R.L. Dawson, ORP, "Notice of Reaching 75% of the Not-to-Exceed Value for Commercial Grade Dedication Extent of Condition, CCN: 308025, dated August 7, 2018

In Reference 1, the U.S. Department of Energy, Office of River Protection directed Bechtel National, Inc. (BNI) to submit a revised commercial grade dedication (CGD) extent of condition (EOC) review plan that reflects implementation of a revised CGD EOC approach utilizing the specialized requirements verification matrix, and to update the previously-submitted request for equitable adjustment (REA 2017-12) to incorporate the revised approach. The details of the revised approach and benefits of using the specialized requirements verification matrix for conducting the CGD EOC reviews are documented in Reference 1. In Reference 2, BNI submitted the revised CGD EOC plan, 24590-WTP-PL-ENG-0003, Rev. 1, *Extent of Condition Plan for Review of CGD Documentation for 24590-WTP-RCA-MGT-15-00338*. In Reference 3, BNI submitted a request to increase the not-to-exceed (NTE) value for conducting the CGD EOC reviews from $1,000,000 (previously authorized in Contract Modification 397) to a total of $1,500,000.

Contract Modification 438 (attached) increases the NTE value for conducting the CGD EOC reviews by $500,000 to a total of $1,500,000. The revised CGD EOC plan transmitted by Reference 2 is approved and is authorized for use in conducting further CGD EOC reviews within the NTE limitations authorized by Contract Modification 438. BNI shall submit the revised Request for Equitable Adjustment for CGD EOC review no later than October 31, 2018. It is noted the CGD EOC plan and NTE for performing the EOC reviews applies only to the Waste Treatment and Immobilization Plant facilities required for Direct Feed Low-Activity Waste. Plans for conducting any similar reviews for the Pretreatment and High-Level Waste facilities will be determined at a later date.

If you have any questions, please contact Ron Cone or Tom Fletcher; or your staff may contact Paul Hirschman, WTP Engineering Division Director, at (509) 373-8939.

Benton J. Harp
Deputy Manager

Ronnie L. Dawson
Contracting Officer

CPM:KAM

Attachment

cc w/attach:
BNI Correspondence

OFFICE OF RIVER PROTECTION
P.O. Box 450, MSIN H6-60
Richland, Washington 99352

NOV 1 2 2018

18-WTP-0133

Mr. C.K. Binns
Business Services Manager
Bechtel National, Inc.
2435 Stevens Center Place
Richland, Washington 99354

Mr. Binns:

CONTRACT NO. DE-AC27-01RV14136 – APPROVAL OF BECHTEL NATIONAL, INC. REVISED CONTRACT DELIVERABLE 1.2 – 24590-WTP-PL-TE-01-012, REVISION 9, PROJECT EXECUTION PLAN

Reference: BNI letter from C.K. Binns to R.L. Dawson, ORP, "Contract Deliverable 1.2 – 24590-WTP-PL-TE-01-012, Rev 9, Project Execution Plan," CCN: 308031, dated September 20, 2018.

Revision 8 of the Bechtel National, Inc. (BNI) Waste Treatment and Immobilization Plant Project Execution Plan (PEP) has been revised by BNI to account for revised organization structures within BNI (optimization activities), administrative updates (e.g., citations to numerous updated BNI document deliverables and procedures), and clerical changes. This is a contract deliverable requiring approval by the U.S. Department of Energy, Office of River Protection (ORP). ORP approves the Reference deliverable.

If you have any questions, please contact Mr. Jon Peschong, Director, Waste Treatment and Immobilization Plant, Project Controls Division, (509) 376-4424.

Ronnie L. Dawson
Contracting Officer

FOR Thomas W. Fletcher
Assistant Manager, Federal Project Director
Waste Treatment and Immobilization Plant

WTP:RLC

cc:
BNI Correspondence

OFFICE OF RIVER PROTECTION
P.O. Box 450, MSIN H6-60
Richland, Washington 99352

NOV 1 4 2018

18-WSC-0083

Ms. Valerie McCain
Project Director
Bechtel National, Inc.
2435 Stevens Center Place
Richland, Washington 99354

Ms. McCain:

CONTRACT NO. DE-AC27-01RV14136 – U.S. DEPARTMENT OF ENERGY'S INTENT TO REVISE CONTRACT SECTION C, TO REMOVE REQUIREMENT TO USE CARBON DIOXIDE FOR LOW-ACTIVITY WASTE DECONTAMINATION

The U.S. Department of Energy, Office of River Protection intends to revise Section C.7.(d).3.(v) to remove the requirement to use a Carbon Dioxide decontamination process for Immobilized Low-Activity Waste (ILAW) product containers. This change will allow Bechtel National, Inc. (BNI) to consider additional options to mitigate the obsolescence risk associated with the robotic controllers and components for this system. The contract section would be revised as follows:

Low-Activity Waste Container Closure, Decontamination, and Inspection: Container closure, decontamination, and inspection shall be conducted in accordance with Specification 2, "Immobilized Low-Activity Waste Product." The ILAW product container is sealed, decontaminated, and then the container is weighed and checked for dimensionality. ~~The container is decontaminated using a solid carbon dioxide abrasion process.~~ Temperature and gamma dose rate measurements will be taken on selected containers.

BNI shall provide the potential impacts of the change to the Waste Treatment Immobilization Plant (WTP) scope, schedule and price within 30 days of the receipt of this letter. Based on the information, the Contracting Officer will decide whether to modify Section C. BNI shall identify any other changes to other contract terms and conditions, in support of the above change of this Contract.

If you have any questions, please contact me, or your staff may contact Thomas Fletcher Assistant Manager, WTP Division, (509) 376-2711.

Ronnie L. Dawson
Contracting Officer

Thomas W. Fletcher
Contracting Officer Representative

WSC:JAR

cc: BNI Correspondence

OFFICE OF RIVER PROTECTION
P.O. Box 450, MSIN H6-60
Richland, Washington 99352

NOV 17 2018

18-NSD-0031

Valerie McCain, Project Director
Bechtel National, Inc.
2435 Stevens Center Place
Richland, Washington 99354

Mrs. McCain:

CONTRACT NO. DE-AC27-01RV14136 – APPROVAL OF THE BECHTEL NATIONAL, INC., SAFETY EVALUATION PROCESS, 24590-WTP-GPP-RANS-NS-0002, REVISION 5

Reference: BNI letter from V. McCain to T.W. Fletcher, ORP, "Regulatory Deliverable 9.1 – Submittal of 24590-WTP-GPP-RANS-NS-0002, Rev 5, *Safety Evaluation Process*, for ORP Review and Approval," CCN: 298371, dated October 26, 2018.

The U.S. Department of Energy, Office of River Protection (ORP) approves 24590-WTP-GPP-RANS-NS-0002, Rev. 5, *Safety Evaluation Process*, as submitted in the Reference. This process is used to evaluate proposed design or process changes in Waste Treatment and Immobilization Plant facilities to identify when ORP approval is required. This revision modifies the scope of the procedure to expand the personnel that are allowed to implement the process to include all Bechtel National, Inc. and Waste Treatment Completion Company, LLC personnel who are trained and qualified to perform the procedure. 24590-WTP-GPP-RANS-NS-0002, Rev. 5, was provided to ORP for in-process review and all comments were resolved prior to being formally transmitted by the Reference.

If you have any questions, please contact John P. Harris, Director, Nuclear Safety Division, (509) 376-8128.

Ronnie L. Dawson
Contracting Officer

Ben J. Harp
Deputy Manager

NSD:MGA

cc: BNI Correspondence

OFFICE OF RIVER PROTECTION
P.O. Box 450, MSIN H6-60
Richland, Washington 99352

NOV 19 2018

18-WTP-0134

Valerie McCain, Project Director
Bechtel National, Inc.
2435 Stevens Center Place
Richland, Washington 99354

Mrs. McCain:

CONTRACT NO. DE-AC27-01RV14136 – APPROVAL OF BASELINE CHANGE PROPOSAL 24590-WTP-TN-PC-18-0139, IMPLEMENTATION OF ASME B13.3 CODE BREAK IN EMF LOW POINT DRAIN BLDG

Reference: BNI letter from Valerie McCain, to T.W. Fletcher, ORP, "Baseline Change Proposal 24590-WTP-TN-PC-18-0139, Implementation of ASME B13.3 Code break in EMF low point drain bldg", CCN: 308477, dated October 18, 2018.

2. ORP letter from K.A. Mair, to C.K. Binns, BNI, "Transmittal of Contract Modification No. 432, Change Order for Actuated On/Off Valve and Notice to Proceed," 18-CPM-0123, dated August 20, 2018.

The U.S. Department of Energy, Office of River Protection, in accordance with the Waste Treatment and Immobilization Plant Contract, Section C, Standard 1(a), hereby approves the subject Baseline Change Proposal (BCP), Reference 1. The scope for the subject BCP, which was added to the contract by Contract Modification No. 432 (Reference 2), includes the design, procurement, and installation of a 3-inch actuated On/Off valve into the Effluent Management Facility's low point drain tank building. This BCP adds the subject scope and budget to the current Control Account budgeted cost of work scheduled, increasing the Performance Measurement Baseline by $315.5K.

If you have any questions, please contact me, or you may contact Jon Peschong, Director, Waste Treatment and Immobilization Plant Project Controls Division, (509) 376-0375.

Thomas W. Fletcher
Assistant Manager, Federal Project Director
Waste Treatment and Immobilization Plant

WTP: DCM

cc:
BNI Correspondence

OFFICE OF RIVER PROTECTION
P.O. Box 450, MSIN H6-60
Richland, Washington 99352

DEC 0 6 2018

18-WSC-0089

Ms. Valerie McCain, Project Director
Bechtel National, Inc.
2435 Stevens Center Place
Richland, Washington 99354

Ms. McCain:

CONTRACT NO. DE-AC27-01RV14136 – CANCELLATION OF WASTE TREATMENT AND IMMOBILIZATION PLANT HOT COMMISSIONING OPERATIONS AUTHORIZATION AGREEMENT BETWEEN THE U.S. DEPARTMENT OF ENERGY, OFFICE OF RIVER PROTECTION AND BECHTEL NATIONAL, INC.

Reference: ORP letter from R.L. Dawson and W.F. Hamel to C.K. Binns, BNI, "Cancellation of Construction Authorization Agreement Between the U.S. Department of Energy, Office of River Protection and Bechtel National, Inc.," 17-WTP-0068, dated May 15, 2017.

The referenced letter established a Waste Treatment and Immobilization Plant hot commissioning operations authorization agreement to be developed prior to the operational readiness review to identify the preconditions for the entry into that project sub-phase.

Requirements for Waste Treatment and Immobilization Plant contract work authorization including the hot commissioning phase are captured in Contract No. DE-AC27-01RV14136 and associated requirements documents. The authorization agreement contained in the referenced letter is no longer required.

If you have any questions, please contact me, or your staff may contact Larry Earley, Director, Waste Treatment Operations, Commissioning, Maintenance, and Operations Division, (509) 373-9309.

Ronnie L. Dawson
Contracting Officer

Thomas W. Fletcher
Assistant Manager, Federal Project Director
Waste Treatment and Immobilization Plant

WSC:AMR

cc: BNI Correspondence

OFFICE OF RIVER PROTECTION
P.O. Box 450, MSIN H6-60
Richland, Washington 99352

DEC 14 2018

18-QAD-0081

Valerie McCain, Project Director
Bechtel National, Inc.
2435 Stevens Center Place
Richland, Washington 99354

Mrs. McCain:

CONTRACT NO. DE-AC27-01RV14136 – CONCURRENCE WITH BECHTEL NATIONAL, INC. PROPOSED COMMERCIAL GRADE DEDICATION CORRECTIVE ACTION PLAN CLOSURE

References:
1. BNI letter from V. McCain to R.L. Dawson, ORP, "Proposed Commercial Grade Dedication Corrective Action Plan Closure," CCN: 309723, dated November 30, 2018.
2. ORP letter from R.L. Dawson and K.W. Smith to M.G. McCullough, BNI, "Audit Report U-14-QAD-RPPWTP-003 – U.S. Department of Energy, Office of River Protection Audit of Bechtel National, Inc. Commercial Grade Dedication Program," 15-QAD-0038, dated August 6, 2015.

In Reference 1, Bechtel National, Inc. (BNI) proposed a set of actions to close all commercial grade dedication (CGD) actions related to the U.S. Department of Energy, Office of River Protection (ORP) 2014 audit of BNI's CGD program documented in Reference 2, and to provide final closure for all CGD-related correspondence dated from August 2015 to date (Reference 1 provides an accounting of the significant applicable CGD correspondence).

ORP concurs with BNI's proposed path forward for closure of the CGD-related actions necessary to address ORP's 2014 CGD audit finding. ORP will work closely with BNI over the coming weeks to ensure continued alignment on the remaining closure actions, and to ensure the required BNI and ORP effectiveness reviews are appropriately coordinated while maintaining the required level of ORP independence.

If you have any questions, please contact me, or your staff may contact Paul A. Schroder, Director, Quality Assurance Division, (509) 373-8939.

Thomas W. Fletcher
Assistant Manager, Federal Project Director
Waste Treatment and Immobilization Plant

QAD:TMO

cc: BNI Correspondence

WTP External DocSearch Account Application (Non-WTP)

WTP User Admin
Lori King
2435 Stevens Center Place
Mail Stop: MS14-1B
Richland, WA 99354
Phone: (509) 371-2091
wtpusrad@bechtel.com

Instructions:

- Applicant completes and signs Section A. **(Type or print clearly)**
- Applicant forwards signed form to appropriate approver.
- Approver completes and signs Section B.
- Scan and email completed form to WTP User Admin.

Section A - Required Applicant Information/Acceptance Policy

Applicant Organization:	
☐ **DNFSB**	
☒ **DOE Employee**	☐ **Yes** ☒ **No** **If no, please provide company name below.**
☐ **Support Contractor**	**(Company Name)** Eagle Research INc
NDA (Support Contractors)	**Do you have a signed BNI NDA on file?** ☐ **Yes** ☒ **No**

Name	James D Kekacs		
Phone	(843) 459-340	**Email Address**	jbkekacs@bellsouth.net

Please provide a justification for access request: Need to perform oversight of Nuclear Safety for HQ EA-31

Please provide length of time that access will be needed: ☐ 6 Months ☒ 12 Months Other

Acceptance Policy

- I will use this account only for WTP Project support.
- I will maintain the confidentiality of my DocSearch account. I will not share my user name and password.
- I will inform the WTP User Admin (wtpusrad@bechtel.com) when access is no longer needed.

Applicant's Signature _____ **Date** 02/07/19

Applicant's Supervisor Signature _____ **Date** _____

Section B - Management Approval (Management approval is required for access)

DOE and Support Contractor Approver	**DNFSB Approver**	**WTP Approver**
Jon C. Peschong, DOE 2440 Stevens Center Place Richland, WA 99354 (509) 376-4424 Jon.Peschong@orp.doe.gov	Ricky Hyson, DOE-ORP/DNFSB 2440 Stevens Center Place Richland, WA 99354 (509) 376-0865 ricky.hyson@orp.doe.gov	WTP Manager/Supervisor (Print/Type) Organization
Management Approval Signature		**Date**

Section C - IT Use ONLY

Date Received	**Date Issued**	**Date Tested**	**Date Requestor Notified**	**Review Date**

☐ **Password E-Mailed**
(User ID/password will be sent by e-mail)

☐ **User Notified by phone**

Administrator Notes:

Administrator Signature: _____ (*Print/Type Name*) _____ (*Signature*) _____ (*Date*)

SISM Signature: _____ (*Print/Type Name*) _____ (*Signature*) _____ (*Date*)