



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

MAY 14 2019

19-ECD-0035

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

Ms. Smith:

**MAY 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 – JANUARY 1, 2019, THROUGH MARCH 31, 2019**

This letter transmits the U.S. Department of Energy May 2019 Quarterly Report (Attachment) under Section IV-C-1 of the subject Consent Decree, for the period of January 1, 2019, through March 31, 2019. 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.

A handwritten signature in black ink, appearing to read "B.T. Vance".

Brian T. Vance
Manager

ECD:BRT

Attachment

cc: See page 2

Ms. Alexandra K. Smith
19-ECD-0035

-2-

MAY 14 2019

cc w/attach:

L.C. Suttora, EM-3
J. Moon, EM-3.31
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M.J. Turner, MSA
J. Atwood, YN
Administrative Record

cc w/o attach:

M. Johnson, CTUIR
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J. Bell, NPT (Acting)
G. Bohnee, NPT
R. Buck, Wanapum
R. Longoria, YN (Acting)

Attachment
19-ECD-0035
(69 Pages Excluding Cover Sheet)

U.S. Department of Energy, Office of River Protection
Quarterly Report, January 1, 2019, through March 31, 2019, and
Tank Farm / Waste Treatment and Immobilization Plant
Direction Letters

Office of River Protection Quarterly Reporting Period

January 1, 2019, through March 31, 2019¹

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

Date

¹ Except where otherwise expressly stated, the narrative descriptions of progress in this report cover the period from January 1, 2019, through March 31, 2019. Earned Value Management System data and descriptions cover the period ending February 28, 2019.

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.

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Acronyms and Abbreviations

BNI	Bechtel National, Inc.
BOF	Balance of Facilities
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 January 1, 2019, through March 31, 2019. Earned Value Management System (EVMS) data and descriptions cover the period ending February 28, 2019; 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
<i>Actions</i>			
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
<i>Milestones</i>			
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 on 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 A Tank Farm POR518 and POR519 portable exhauster installation.
- Completed fabrication and delivery of A Tank Farm ventilation exhauster manifold.
- Completed installation of A Tank Farm ventilation system demisters.
- Completed removal of AX-103-09B thermocouple (previously incorrectly identified as the riser 07D thermocouple.)
- Completed Tank AX-101 01A pit cleanout.
- Completed AX-102 02A Pit pump installation.
- Completed in service leak test for AX-102/104 diversion box to AX drop leg.
- Completed placement of Tank AX-102 hydraulic power units and manifold removal efforts at the stuck shield plug in AX-102 02B pit have been unsuccessful and that work has been terminated.
- Completed excavation and hose-in-hose transfer line installation from AX Tank Farm diversion box to Tank AX-102 pits 02A and 02B.
- Completed installation of caustic and water system piping from POR496 to the AX Tank Farm.
- Completed installation of Tank AX-102 pits 02A, 02B, and 02C hose-in-hose transfer line shield plates and hose barns.
- Completed north/south electrical backbone conduct installation and backfill.
- Completed installation of cathodic protection system.

- Completed removal of the A-104 thermocouple (ventilation system tie in point).
- Removed the top section of Tank AX-103 R7C thermocouple.
- Set all six sections of the A Tank Farm exhaust manifold on the pad.
- Completed installation of one of two boreholes near Tanks A-104 and A-105 (samples taken).
- Completed Tank A-103 C pit inspection.

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 remaining additional borehole).
- 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.
 - Continue to install ventilation exhauster manifold (anchoring and grouting).
 - Continue to install ventilation ductwork.
 - Continue to remove cover blocks, clean pits, and remove thermocouple trees from risers (to connect the ventilation system).
 - Removal of Tank A-101 riser 2 thermocouple.
- 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 high-resolution resistance leak detection monitoring, fabrication and installation.
- Continue the waste retrieval design for A Tank Farm (Tanks 101, 102, 103, and 106).

Accomplishments Expected in the Next Reporting Period

- Complete Phase II of the AX-102/AX-104 tanks control trailer installation (POR471 and POR498).

- Initiate the A-285 building construction acceptance tests and operational acceptance tests to support Tank AX-102 retrieval operations.
- Complete removal of Tank AX-103 R7C thermocouple.

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.
- Adverse weather conditions during the reporting period negatively impacted planned work activities.
- On December 3, 2018, Ecology sent ORP and the DOE Richland Operations Office a letter (18-NWP-177, “Hanford Site Ambient Air Boundary Concerns”) regarding the Hanford Site ambient air boundary. Ecology expressed its concern that the ambient air boundary appears to have changed as a result of increased public access to parts of the Hanford Site. DOE, Ecology, and the Washington State Department of Health have met several times to attempt to develop a shared understanding of existing conditions and a path forward.
- On January 28, 2019, ORP received a Washington River Protection Solutions LLC letter (WRPS-1900243, “Contract Number DE-AC27-08RV14800 – Washington River Protection Solutions LLC Anticipated Consent Decree Milestone Impacts due to Lack of State of Washington, Department of Ecology Approval Order”), which outlines potential impacts to tank retrievals at A and AX Tank Farms, due to a lack of Ecology regulatory approval associated with the 241-A and 241-AX Tank Farms exhausters. On March 4, 2019, DOE transmitted WRPS-1900243 to ensure Ecology is aware of potential impacts to A and AX Tank Farm retrievals, and possibly associated Consent Decree milestones, if Ecology does not approve a pending notice of construction application in the near future. DOE is continuing to evaluate the information in the letter, as well as whether amendment of the Consent Decree (including potential invocation of *force majeure* provisions) or other actions may be necessary.

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 Ecology on this topic since August 2018.

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 the retrieval challenges and tank conditions issues associated with Tanks A-104 and A-105 to continue.
- DOE expects the ambient air boundary issue to continue.
- On April 19, 2019, Ecology transmitted two letters to DOE pertaining the A and AX Tank Farm exhausters (19-NWP-063, “Notice of Incompleteness Determination for the *Criteria and Toxics Air Emissions Notice of Construction for the Operation of Portable Exhausters Supporting Single-Shell Tank Waste Retrieval at the 241-A and 241-AX Tank Farms*,” and 19-NWP-062, “Need for Department of Ecology’s Approval of Pending Notice of Construction Application for the 241-A and 241-AX Tank Farm Exhausters”). DOE is evaluating Ecology’s letters. As previously noted, DOE anticipates that if Ecology does not approve the pending A and AX notice of construction application in the near future, amendment of the Consent Decree (including potential invocation of *force majeure* provisions) or other actions may be necessary.
- 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.
- DOE expects to continue analysis of, and discussions with, Ecology about the retrieval challenges and tank conditions associated with Tanks A-104 and A-105.
- DOE expects to continue analysis of, and discussions with, Ecology and the Washington State Department of Health about the ambient air boundary issue.
- On March 4, 2019, DOE transmitted WRPS-1900243 to ensure Ecology is aware of potential impacts to A and AX Tank Farm retrievals, and possibly associated Consent Decree milestones, if Ecology does not approve a pending notice of construction application in the near future for 241-A and 241-AX Tank Farms exhausters. DOE is continuing to evaluate the information in the letter, as well as whether amendment of the

Consent Decree (including potential invocation of *force majeure* provisions) or other actions may be necessary.

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

- RPP-RPT-58933, *241-AX-102 Tank Waste Retrieval Work Plan*, modification to update schedule and vapor monitoring sections. Draft modification under review.

Issues Encountered in the Reporting Period

- None.

Issues Expected in the Next Reporting Period

- None.

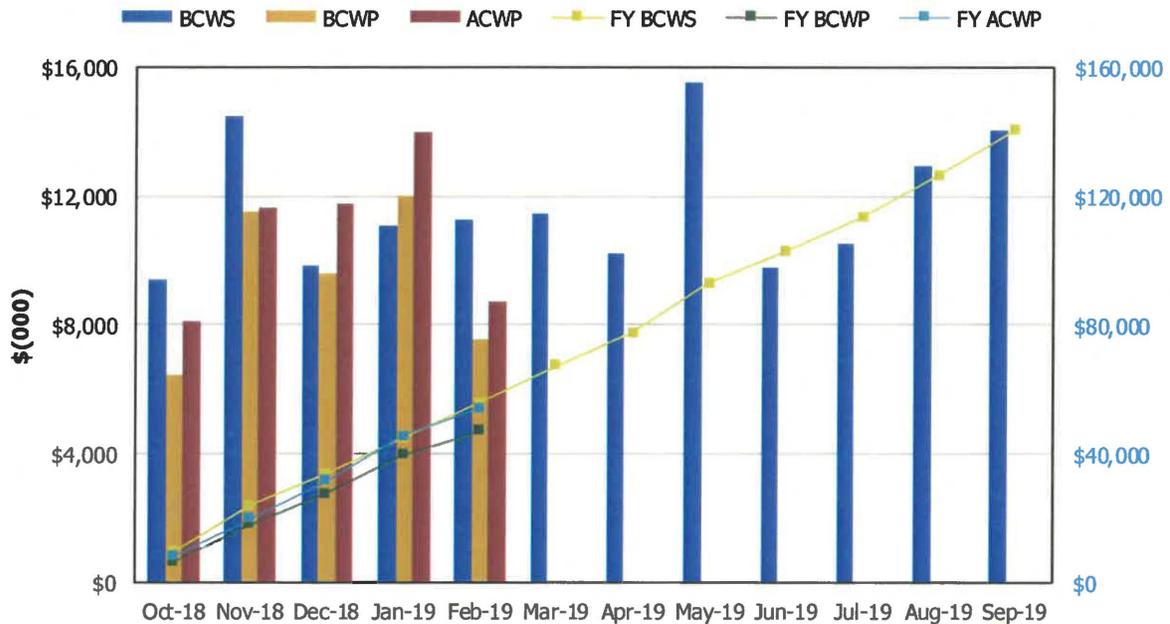
Tank Farm Earned Value Management System Quarterly Analysis

Earned Value Data: Fiscal Year 2019

February-19

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 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	\$9,824	\$9,620	\$11,762	0.98	0.82	\$33,726	\$27,585	\$31,519	0.82	0.88
Jan 2019	\$11,060	\$12,034	\$13,959	1.09	0.86	\$44,786	\$39,618	\$45,479	0.88	0.87
Feb 2019	\$11,259	\$7,545	\$8,742	0.67	0.86	\$56,046	\$47,163	\$54,221	0.84	0.87
Mar 2019	\$11,437					\$67,483				
Apr 2019	\$10,243					\$77,726				
May 2019	\$15,506					\$93,232				
Jun 2019	\$9,802					\$103,034				
Jul 2019	\$10,542					\$113,576				
Aug 2019	\$12,947					\$126,523				
Sep 2019	\$14,029					\$140,552				

CTD	\$996,785	\$977,893	\$1,032,719	0.98	0.95
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ACWP = actual cost of work performed.
BCWP = budgeted cost of work performed.
BCWS = budgeted cost of work scheduled.
CPI = cost performance index.

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

Earned Value Management System Quarterly Analysis

Retrieve and Close Single-Shell Tanks (5.02)⁴

Project EVMS reflects data for December 2018, January 2019, and February 2019.

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 December 2018 **unfavorable** SV of (\$203,700) was due to:

- A shortage of site-qualified and trained electricians that 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.

The January 2019 **favorable** SV of \$973,700 was due to:

- Schedule recovery of the grading and site preparation activities for the SX Tank Farm expansion barrier. Crews have taken advantage of mild weather so far this winter to continue this work, which was originally scheduled to suspend in November.
- Schedule recovery of the AX-102 slurry pump installation in pit A.

The February 2019 **unfavorable** SV of (\$3,714,100) was due to:

- Adverse weather conditions and inoperable equipment that prevented crews from performing planned work:
 - Snow contributed to 7.5 days of missed workdays.
 - The AX Tank Farm crane and exhausters being inoperable contributed to an additional 1.5 missed days.
 - Delayed work on electrical wire pulls for the AX Tank Farm electrical backbone.
 - Impacted the start of excavation work for the AX Tank Farm lighting installation.
 - Required substantial snow removal activities.

Cost Variance Summary:

The December 2018 **unfavorable** cost variance (CV) of (\$2,141,700) was due to:

- Additional work crews and the use of overtime in attempting to recover schedule for the installation of infrastructure equipment in support of AX Tank Farm retrievals. This work

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."

continues to be impacted by inefficiencies associated with self-contained breathing apparatus use.

- Installation of the A Tank Farm exhausters structural steel was more time consuming than planned, therefore taking longer to complete.

The January 2019 **unfavorable** CV of (\$1,925,800) was due to:

- Additional engineering and construction hours needed in removing underground electrical utility lines while performing grading and site preparation activities for the SX Tank Farm expansion barrier.
- Installation of the A Tank Farm exhausters structural steel required rework on safety-significant bolts and on uneven spacing between platform landings and first step.

The February 2019 **unfavorable** CV of (\$1,196,700) was due to:

- Adverse weather conditions resulted in 6 days of snow removal efforts that:
 - Impacted access to tank farm entry while incurring subcontractor standby costs.
 - Impacted the efficiency of subcontractor construction crews, when performing planned work.
 - Resulted in inoperable equipment due to the freezing temperatures, which required thawing.
 - Personnel warm-up times increased from 15 minutes to 30 minutes for every 20 minutes spent working in the farms.

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
 January 1, 2019, through March 31, 2019.

	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	0	1	315	0%	56
A/AX Tank Farms	17,111	36,740	53,851	181,619	30%	59
Total	17,112	36,740	53,852	181,934	30%	

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 total 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).

Note: During an internal audit, it was discovered that the SCBA data reported for the period July 2018 to September 2018 was incorrect. The total hours worked with SCBA should be 75,536 (a 77 percent increase over what was reported). The total SST retrieval hours should have been 195,677 (a 19 percent increase over what was reported). The total percentage of hours on SCBA was 39 percent, rather than 11 percent previously reported.

SCBA = self-contained breathing apparatus.

SST = single-shell tank.

Written Directives for Tank Farms Project

Written directives issued by DOE to the Tank Operations Contractor from January 1, 2019, through March 31, 2019, for work required by the Consent Decrees.

Two letters of direction were issued to Washington River Protection Solutions LLC during the reporting period in reference to Contract No. DE-AC-08RV14800, *Tank Operations Contract*. The letters are listed below and copies are attached:

- 19-TF-0017, “Contract No. DE-AC27-08RV14800 Additional Appropriation for Fiscal Year 2019,” dated February 26, 2019.
- 19-TF-0044, “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 Procurement Staging Package for Fiscal Year 2020,” dated March 7, 2019.

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 February 2019, DFLAW modifications for the WTP Project were 63 percent complete, engineering design was 90 percent complete, procurement was 70 percent complete, and construction was 49 percent complete. As of February 2019, total LBL facilities were 72 percent complete, engineering design was 93 percent complete, procurement was 87 percent complete, construction was 88 percent complete, and startup and commissioning was 34 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.

Ecology sent ORP and the Richland Operations Office a letter (18-NWP-177) on December 3, 2018, regarding the Hanford Site ambient air boundary. Ecology expressed its concern that the ambient air boundary appears to have changed as a result of increased public access to parts of the Hanford Site. DOE, Ecology, and the Washington State Department of Health have met several times to attempt to develop a shared understanding of existing conditions and a path forward.

Federal Project Director: Tom Fletcher

Deputy Federal Project Director: Mat Irwin

Accomplishments during the Reporting Period:

- DOE awarded the Analysis of Alternatives contract for the high-level waste treatment mission in March 2019.
- ORP participated in ongoing meetings with Ecology to discuss the tank waste mission and high-level waste treatment approaches.

- 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-00001A/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

1 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 HLW and PT 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.	LAW	=	low-activity waste.
HLW	=	high-level waste.	PT	=	pretreatment.
LAB	=	analytical laboratory.	WTP	=	Waste Treatment and Immobilization Plant.

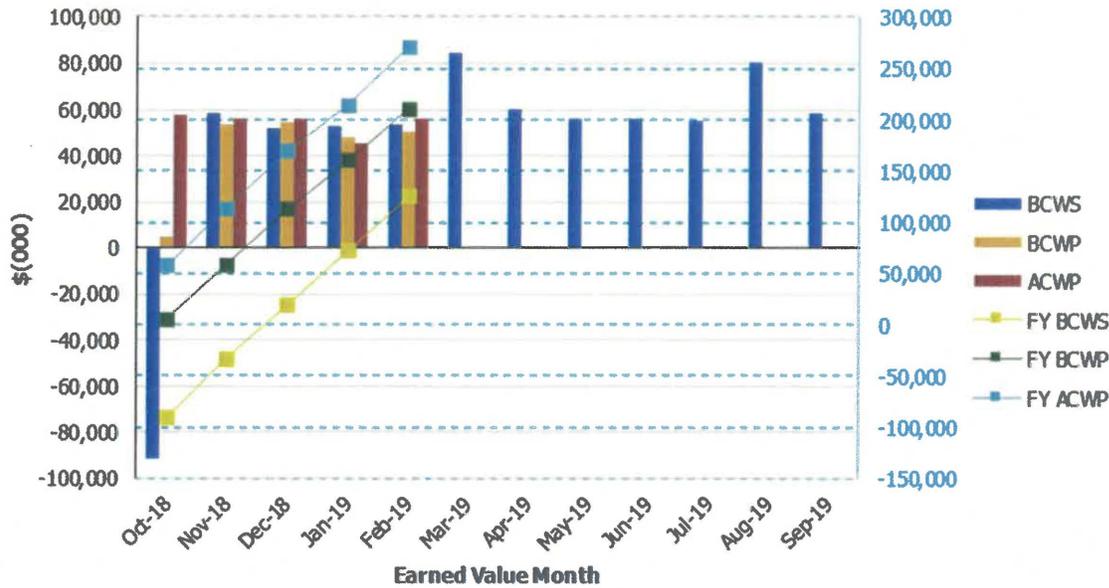
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2019 Earned Value Data

Data as of: February 2019

**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	\$53,988	\$56,033	1.03	0.96	\$19,336	\$112,261	\$169,340	5.81	0.66
Jan 2019	\$52,627	\$47,946	\$45,129	0.91	1.06	\$71,963	\$160,207	\$214,469	2.23	0.75
Feb 2019	\$53,452	\$50,130	\$56,314	0.94	0.89	\$125,415	\$210,337	\$270,782	1.68	0.78
Mar 2019	\$84,278									
Apr 2019	\$60,002									
May 2019	\$56,039									
Jun 2019	\$55,802									
Jul 2019	\$54,907									
Aug 2019	\$80,581									
Sep 2019	\$58,641									

PTD	\$11,422,209	\$11,366,042	\$11,292,816	1.00	1.01
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ACWP = actual cost of work performed.
 BCWP = budgeted cost of work performed.
 BCWS = budgeted cost of work scheduled.
 CPI = cost performance index.

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

Performance Tracking	SV (\$x1,000)	CV (\$x1,000)
Cumulative (through February 2019)	(\$56,167)	\$73,226
Fiscal Year 2019 to-date	\$84,922	(\$60,446)
December 2018	\$1,735	(\$2,045)
January 2019	(\$4,681)	\$2,817
February 2019	(\$3,323)	(\$6,184)

SV = schedule variance.

CV = cost variance.

Earned Value Management System Analysis

Schedule Variance Summary:

For the December 2018 Earned Value Management System reporting period, a net favorable SV of approximately \$1.7 million was reported, primarily due to the following:

- Effluent Management Facility (EMF) Plant Equipment reported a favorable SV due to partial schedule recovery of the prefabricated electrical powerhouse and the density, radiation, and flow monitoring system.
- BOF Plant Equipment reported a favorable SV due to partial schedule recovery of programmable protection system scope.
- LAW Facility Commissioning reported an unfavorable SV due to delays in procurement of the mechanical handling lid equipment, delays in defining the cold commissioning simulant part B specifications, delays in purchase of the glass former system spares, and aging equipment replacement.
- LAW Facility Startup reported an unfavorable SV due to procedure development, along with component and system testing, which is being delayed by resource availability and failed components.
- BOF Construction reported an unfavorable SV due to required coating repairs of underground radiological waste transfer lines. This delayed excavations, installs, and backfills.
- HLW Facility Engineering reported an unfavorable SV due to delays in obtaining engineering resources from DFLAW/LBL. Areas delayed include process engineering, vessel analysis, civil/structural, mechanical systems, and control systems.

For the January 2019 Earned Value Management System reporting period, a net unfavorable SV of approximately (\$4.7 million) was reported, primarily due to the following:

- DFLAW/EMF Construction craft and subcontracts reported an unfavorable SV due to the following:
 - DFLAW underground radiological waste transfer lines have been impacted by required coating repairs, which has delayed excavations, installations, and backfills.

- Equipment installations originally scheduled for January were completed earlier.
- Procurement delays resulted in schedule impacts to steel and pipe installation.
- Construction of the pre-engineered utility building is behind schedule.
- Work associated with the EMF stainless steel liner plate originally scheduled for this month was completed earlier.
- EMF Plant Equipment reported an unfavorable SV due to a delay in vendor fabrication and assembly related to radar level detection instrumentation and pressure transmitters.
- LAW Facility Commissioning reported an unfavorable SV due to work scope being realigned in coordination with LAW Facility startup testing and a delay in issuing the LAW Facility operations procedure.
- LAW Construction reported a favorable SV due to recovery of schedule for the LAW Facility Documented Safety Analysis (DSA) electrical cabling and subcontract work for installation of insulation/blankets being ahead of schedule.
- BOF Construction reported an unfavorable SV due to performing repairs on the underground radiological waste transfer lines pipe coatings, in lieu of performing baseline work scope.
- HLW Facility Engineering continues to report an unfavorable SV due to delays in obtaining engineering resources from DFLAW/LBL. Areas delayed include system engineering, process engineering, vessel analysis, civil/structural, mechanical systems, and control systems.

For the February 2019 EVMS reporting period, a net unfavorable SV of approximately (\$3.3 million) was reported, primarily due to the following:

- LAW Facility Startup reported an unfavorable SV due to system turnover delays impacting component testing. The February reporting period was due to the container finishing handling system. It was scheduled for component testing, but has not been turned over yet.
- LAW Facility Plant Management reported an unfavorable SV due to initial calibration and procedure scope being realigned in the schedule to coincide with LAW Facility startup testing.
- DFLAW/EMF Construction reported an unfavorable SV due to construction delays related to underground radiological waste transfer line coating issues and material delays pushing out EMF steel/vessel platform installation.
- DFLAW/EMF Plant Equipment reported an unfavorable SV due to multiple discrete plant equipment orders in this reporting period resulting in full or partial schedule recovery, or forecasted schedule recovery during the third quarter of fiscal year (FY) 2019.
- BOF Construction reported an unfavorable SV due to delays in final grading impacted by design completion.

- BOF Startup reported an unfavorable SV due to the steam plant testing subcontract taking longer to finalize than planned.
- LAW Facility Plant Equipment reported a favorable SV due to discrete plant equipment orders in this reporting period for the programmable protection system, active safety process gas analyzers, and stack discharge monitoring instruments that resulted in either partial or full schedule recovery.

For the December 2018 EVMS reporting period, a net unfavorable CV of approximately (\$2.0 million) was reported, primarily due to the following:

- Facility Services reported an unfavorable CV in construction related to purchases of electrical communications equipment budgeted in prior periods, but paid for in this reporting period. In addition, Facility Services site commissioning reported an unfavorable CV due to higher-than-planned overtime to support weekend work.
- BOF Construction reported an unfavorable CV due to higher-than-planned need for resources in support of the BOF completions and turnover scope, along with sitewide underground scope.
- BOF Startup reported an unfavorable CV due to labor inefficiencies in craft level-of-effort related work scope, component testing, and system testing.
- BOF Commissioning reported an unfavorable CV due to emergent corrective maintenance in support of startup activities.
- EMF Construction reported a favorable CV due to the completion of the stainless steel subcontract under budget.
- BOF Construction Crafts reported an unfavorable CV due to DFLAW transfer pipe coating repairs, higher-than-planned overtime and winterization activities, as well as inefficiencies for EMF pipe installation related to material delays interrupting the continuous flow of work and the availability of trained pipe fitters.

For the January 2019 EVMS reporting period, a net favorable CV of approximately \$2.8 million was reported, primarily due to the following:

- LAW Facility Commissioning reported a favorable CV due to decreased demand for refurbishments.
- LAW Facility Engineering reported an unfavorable CV due to overrunning punchlist unit rates in support of construction.
- LAW Facility Construction reported an unfavorable CV due to higher-than-planned support by field nonmanual workers for turnover of LAW Facility systems to the Startup organization.
- BOF Commissioning reported an unfavorable CV due to subcontract performance related to the sanitary drain system dosing chamber.
- BOF Construction reported an unfavorable CV due to higher-than-planned support by field nonmanual workers for turnover of BOF systems to the Startup organization.

- DFLAW/EMF Construction reported an unfavorable CV due to DFLAW transfer line pipe coating repairs and procurement challenges impacting steel/pipe installation unit rates.
- LBL Facility Services reported a favorable CV due to delays in cost expenditures related to radiological control and industrial hygiene equipment purchases and delays in staff hiring.
- PT Facility Test Completion Team reported a favorable CV due to the demobilization subcontract being awarded for less than estimated.
- PT Facility Technical Teams reported an unfavorable CV due to comment resolution on technical decision deliverables taking longer than planned.

For the February 2019 EVMS reporting period, a net unfavorable CV of approximately (\$6.2 million) was reported, primarily due to the following:

- LAW Facility Engineering reported an unfavorable CV due to the accelerated specialized requirements verification matrix schedule for the commercial grade dedication review of extent of condition requiring a higher unit rate to execute than originally planned.
- LAW Facility Startup reported an unfavorable CV due to equipment and component failures during flush testing, which resulted in additional testing and troubleshooting.
- BOF Construction reported an unfavorable CV due to higher-than-planned support needed by field nonmanual workers for BOF completions/turnover.
- BOF Startup reported an unfavorable CV due to component failures discovered during system testing, which needing repairs and refurbishment and required additional retesting, as well as performing startup activity guides for the plant cooling and chilled water systems.
- BOF Plant Management reported an unfavorable CV due to additional nonlabor work associated with the sanitary sewer refurbishment and material purchases associated with aging equipment.
- DFLAW/EMF Construction reported an unfavorable CV due to construction delays related to underground radiological waste line coating issues and material delays pushing out EMF steel/vessel platform installation.

WTP Project Cumulative through February 2019

The WTP Project is behind the planned work scheduled by approximately (\$56.1 million) through February 2019, but it has cost approximately \$73.2 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 Bechtel National, Inc. (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,”⁵ 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).⁶

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

⁵ *State of Washington v. Dept. of Energy*, No: 2:08-CV-5085-RMP (March 11, 2016) (ECF-221).

⁶ 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.

completed in the third quarter of FY 2019. Final resolution of T4 is expected to be completed in the third quarter of FY 2019.

ORP is expected to submit a letter to the Defense Nuclear Facilities Safety Board (DNFSB) in the third quarter of FY 2019 acknowledging resolution of technical issues T4 through T8. This letter will include acknowledging resolution of two technical issues (T6 and T7)⁷ not specifically identified in the Third Order Regarding Motions to Modify Consent Decrees.

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 issues related to PJM vessel mixing and control (T4) and erosion/corrosion in piping and vessels (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 continue work on 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).
- BNI is expected to continue work on updating the calculation to support resolution of the erosion/corrosion technical issue (i.e., T5 in relation to erosion/corrosion in piping and ancillary vessels).
- ORP intends to submit resolution of technical issues T4 through T8 to the 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.

⁷ Technical issue T6 relates to design redundancy and in-service inspection. Technical issue T7 relates to black cell vessel/equipment structural integrity.

- *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 third quarter of FY 2019. ORP intends to submit resolution of technical issue T4 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 completed in the third quarter of FY 2019. ORP intends to submit resolution of technical issue 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). ORP intends to submit resolution of technical issue T8 to the DNFSB in the third quarter of FY 2019.

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, additional engineering workscope was performed and is planned for FY 2019 in anticipation of receiving engineering resources from DFLAW/LBL activities.

The planned work on the HLW Facility is being impacted by the delay of engineering staff transitioning from higher priority DFLAW/LBL activities. Engineering staff will continue to transition to HLW Facility activities as they complete their DFLAW/LBL activities. The impact of this delay is expected to continue into the next reporting period.

In March 2019, DOE awarded the Analysis of Alternatives contract for the high-level waste treatment mission. The purpose of the Analysis of Alternatives is to identify all viable options to meet mission needs and reduce risk, while providing decision-quality analysis and results to inform the acquisition authority and other stakeholders of all the alternatives to meet both Departmental and the Office of Environmental Management policy requirements.

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

Accomplishments during the Reporting Period:

- BNI continued to update the hydrogen mitigation strategy in support of the safety basis.
- ORP continued to participate in ongoing meetings with Ecology to discuss the tank waste mission and high-level waste treatment approaches.
- BNI continued fabrication of RLD-7 and RLD-8 vessels 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:

- BNI is expected to complete an engineering study to document the HLW Facility hydrogen control strategy to align with the safety basis.
- BNI will continue to ramp-up engineering design activities on key mechanical and process systems for the HLW Facility. Engineering staff will continue to be hired and transitioned from DFLAW/LBL modifications, as they become available.
- ORP expects to continue meeting with Ecology on a regular basis to discuss the tank waste treatment mission and high-level waste treatment approaches.
- ORP expects to brief Ecology on April 11, 2019, on the resolution of Ecology's 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 expected to continue to be 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.
 - *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 Facility⁸

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 February 2019, the LAW Facility was 75 percent complete overall, engineering design was 94 percent complete, procurement was 91 percent complete, construction was 96 percent complete, and startup and commissioning was 21 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, 55 of the 94 LAW Facility systems have been turned over from Construction⁹ to the Startup organization. In addition, Plant Management has accepted handover of 7 of the 94 LAW Facility systems from the Startup organization. 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:

- ORP conducted the inaugural DFLAW Operations Leadership Workshop. More than 80 participants representing 14 different organizations, including federal, contractor, regulatory, and labor leadership attended. Discussions focused on the work each organization will be leading at the Hanford Site to support the startup of DFLAW commissioning.
- The LAW Facility annex began housing a 12-person crew for 24/7 operations.

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).

⁹ Bechtel National, Inc. Construction will direct transfer the communications electrical systems to Plant Management.

- ORP completed its closure verification and effectiveness reviews of BNI's corrective actions for both the commercial grade dedication and quality verification documents findings. 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 evaluations performed by BNI are aligned with the approved LAW Facility DSA.
- BNI awarded a purchase order for the LAW Facility spare melter and received the following procurements from vendors:
 - Input switchgear cabinets for melter power supplies.
 - Refurbished LAW Facility melter No. 2 power supply.
 - Programmable protection system hardware and remote alarms.
 - Pressure sensor and alarm panel equipment.
 - Flow instruments.
 - Butterfly actuated on/off valves.
 - Melter power supply pressure safety valves.
 - Stack discharge monitoring instruments for the stack discharge monitoring system (SDJ-L-01).
 - High-efficiency particulate air filters.
- BNI Construction completed installation of the following items:
 - Instrumentation for the LAW Facility secondary offgas/vessel vent process system (LVP-L-01).
 - Bulk cable related to LAW Facility DSA additional requirements.
 - Batteries for the uninterruptible power electrical system.
- BNI Construction completed the three-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).
- BNI's Startup organization completed energization of the following systems:
 - LAW Facility C1 ventilation system (C1V-L-02).
 - LAW Facility C5 ventilation system (C5V-L-01).

- Autosampling system (ASX-L-01).
- Plant cooling water systems 3 and 4 (PCW-L-03/4).
- BNI's Startup organization completed *System Available for Use* status for the following system:
 - Instrument service air system (ISA Master).
- BNI's Startup organization submitted handover of the following LAW Facility systems to Plant Management:
 - Low-voltage electrical (480/208/120 V) system 2 (LVE-L-02).
 - Domestic potable water system (DOW-L-01).
 - LAW Facility C1 ventilation system (C1V-L-01).
 - DC electrical (125 V) system (DCE-L-01).
- BNI's Plant Management accepted handover of the following systems from the Startup organization:
 - Fire detection and alarm (FDE-L-01).
 - Low-voltage electrical (480/208/120 V) (LVE-L-02).
 - Fire protection water system (FPW-L-01).
- BNI's Plant Management completed refurbishment of the following systems:
 - Plant cooling water systems 3 and 4 (PCW-L-03/4).
 - LAW Facility melter handling system (LMH-L-01).
- BNI's Startup organization accepted turnover of the following system from the Construction organization:
 - Breathing service air system (BSA-L-01).

Accomplishments Expected in the Next Reporting Period:

- BNI expects to continue receiving new procurements for the LAW Facility.¹⁰
- BNI Construction expects to complete the three-week walkdowns in support of turning the following systems over to the Startup organization:
 - LAW Facility concentrate receipt process systems 1 and 2 (LCP-L-01, LCP-L-02).
- BNI Construction expects to continue completing additional three-week walkdowns on various systems in support of turning those systems over to the Startup organization.¹¹

¹⁰ In future reports procurements will be noted in the prior month section only after delivery.

¹¹ In future reports new three-week walkdowns will be noted in the prior month section only after they occur.

- BNI's Startup organization expects to accept the following system turned over from the Construction organization:
 - Radioactive solid waste handling system (RWH-L-01).
- BNI Construction expects to turn the following LAW Facility systems over to the Startup organization:
 - LAW Facility C3 ventilation system (C3V-L-01)
 - LAW Facility concentrate receipt process systems 1 and 2 (LCP-L-01, LCP-L-02)
 - Process and mechanical handling closed circuit television system (PTJ-L-01).
 - LAW Facility container finishing handling systems 1 and 2 (LFH-L-01, LFH-L-02)
 - LAW Facility C2 ventilation system (C2V-L-01)
 - LAW Facility melter equipment support handling system (LSH-L-01)
 - LAW Facility container pour handling system (LPH-L-01)
 - Radioactive liquid waste handling system (RLD-L-01).
- BNI Construction expects to continue turning LAW Facility systems over to the Startup organization.¹²

Issues Encountered during the Reporting Period:

- None.

Issues Expected in the Next Reporting Period:

- 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.

¹² In future reports turnover of new systems from Construction to Startup will be noted in the prior month section only after they occur.

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 February 2019, BOF was 80 percent complete overall, engineering design was 95 percent complete, procurement was 96 percent complete, construction was 88 percent complete, and startup and commissioning was 57 percent complete. Design of the EMF was 96 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 ductwork. Startup testing continues for systems in the steam plant and chiller compressor plant.

To date, 51 of the 57 BOF systems have been turned over from the Construction¹³ organization to Startup. In addition, 28 of the 57 BOF systems have been handed over from the Startup organization to Plant Management.

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.

¹³ Bechtel National, Inc. Construction will direct transfer the communications electrical systems to Plant Management. In addition, the sanitary disposal and lighting/electrical systems are now under the Island Completion team.

Accomplishments during the Reporting Period:

- BNI Construction continued to install EMF pipe racks between the process building and utility buildings.
- BNI Construction completed placement of the concrete lid at the EMF low-point drain.
- BNI's Startup organization submitted handover of the steam plant facility to Plant Management.
- BNI Engineering continued test matrix updates for several of the BOF systems.
- EMF received delivery of vessels DEP 4A/B. These vessels will receive the overheads from the EMF evaporator.
- BNI Construction continued installation of heating, ventilation, and air-conditioning (HVAC) commodities and large- and small-bore piping at the EMF utilities building.
- BNI Construction completed installation of structural steel to support placement of an elevated slab that will act as a cover over the EMF low-point drain.
- BNI Construction continued installation of large- and small-bore piping in the EMF.
- BNI Construction began installation of rebar for the EMF low-point drain elevated slab.
- BNI received structural steel to support construction of the EMF north/south service distribution rack.
- BNI Construction continued installation of large- and small-bore piping in the EMF C5 evaporator cell and the C3 secondary reboiler and condenser area.
- BNI's Startup organization completed initial startup testing of the rotary screw air compressors in the chiller compressor plant.

Accomplishments Expected in the Next Reporting Period:

- BNI Construction expects to continue installation of structural steel and piping, along with HVAC ductwork at EMF.
- BNI expects to receive vessels DEP 5A/B, and receive and place the EMF powerhouse.

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 has constructed large items, such as the C3 and C5 roof structures, outside of the EMF footprint to minimize interferences and disruptions during installation.
 - BNI has accelerated discrete work items such as the C3 and C5 roof structures where possible.
 - A night shift was 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 February 2019, the LAB was 76 percent complete overall, engineering design was 94 percent complete, procurement was 98 percent complete, construction was 98 percent complete, and startup and commissioning was 34 percent complete.

Activities in the LAB are focused on system turnovers and startup testing of LAB systems. To date, all LAB systems have been turned over from the Construction¹⁴ organization to Startup. In addition, 11 of the 35 LAB systems have been handed over from the Startup organization to Plant Management. 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.

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

Accomplishments during the Reporting Period:

- BNI Construction completed oversight and certification of the fire detection system installation.
- BNI's Startup organization completed energization of the LAB process vacuum air system (PVA-A-01).
- BNI's Startup completed hydrolyzing for the LAB low-pressure steam system (LPS-A-01).
- BNI Startup continued component and system startup testing for multiple LAB systems.
- BNI Plant Management continued operational testing and refurbishment of multiple LAB systems.
- BNI's Startup organization completed handover of the LAB low-voltage electrical system and plant service air system to Plant Management for operations.
- 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.

¹⁴ Bechtel National, Inc. Construction will direct transfer the communications electrical systems to Plant Management.

Issues Encountered during the Reporting Period:

- None.

Issues Expected in the Next Reporting Period:

- None.

Written Directives for Waste Treatment and Immobilization Plant Project

Written directives given by DOE to the WTP contractor from January 1, 2019, through March 31, 2019, for work required by the Consent Decrees.

Thirteen 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:

- 19-WTP-0002, “Contract No. DE-AC27-01RV14136 – Approval of Point Adjustment Associated with Baseline Change Proposal 24590-WTP-TN-PC-18-0181, Rev 0, ‘LAW-PDSA – Construction Quantity Awareness,’” dated January 14, 2019
- 19-WTP-0003, “Contract No. DE-AC27-01RV14136 – Approval of Point Adjustment Associated with Baseline Change Proposal 24590-WTP-TN-PC-18-0103, ‘DFLAW – Replan to Align PMB Target Schedule and Approved Baseline Change Proposals APR-SEPT 2018,’” dated January 28, 2019
- 19-QAD-0001, “Contract No. DE-AC27-01RV14136 – U.S. Department of Energy, Office of River Protection Approval of Deliverable 7.2 – Commissioning and Operations Quality Assurance Program Document Revisions,” dated January 30, 2019
- 19-NSD-0001, “Contract No. DE-AC27-01RV14136 – Proposed Revisions to Contract Section C Standard 9 Requirements,” dated January 30, 2019
- 19-WTP-0005, “Contract No. DE-AC27-01RV14136 – Approval of Baseline Change Proposal 24590-WTP-TN-PC-18-0137, ‘CGD EOC Requirements Verification Matrix for LAW Q Equipment,’” dated February 4, 2019
- 19-WTP-0007, “Contract No. DE-AC27-01RV14136 – Approval of Point Adjustment Associated with Baseline Change Proposal 24590-WTP-TN-PC-18-0195, ‘DFLAW – EMF Transfer of HTE Scope to a Subcontract,’” dated February 14, 2019
- 19-WTP-0008, “Contract No. DE-AC27-01RV14136 – Approval of Point Adjustment Associated with Baseline Change Proposal 24590-WTP-TN-PC-18-0106, ‘BOF Steam Plant Testing Subcontract,’” dated February 14, 2019
- 19-WTP-0009, “Contract No. DE-AC27-01RV14136 – Approval of Point Adjustment Associated with Baseline Change Proposal 24590-WTP-TN-PC-18-0119, ‘WTCC Safety & Health Staffing & ODC,’” dated February 14, 2019
- 19-WTP-0023, “Contract No. DE-AC27-01RV14136 – Approval of Baseline Change Proposal 24590-WTP-TN-PC-18-0139, ‘DFLAW – Implementation of ASME B31.3 Code Break in EMF Low Point Drain Bldg,’” dated March 18, 2019
- 19-WTP-0030, “Contract No. DE-AC27-01RV14136 – Approval of Point Adjustment Associated with Baseline Change Proposal 24590-WTP-TN-PC-18-0148, ‘LAW: Return Budget for Suspended Operations Research and G2 Modeling Work to Management Reserve,’” dated March 18, 2019

- 19-WTP-0031, “Contract No. DE-AC27-01RV14136 – Approval of Point Adjustment Associated with Baseline Change Proposal 24590-WTP-TN-PC-18-0019, ‘LAW-LAB Re-purpose and Support of Interface Equipment Between the Integrated Control Network and the Plant Information Network,’” dated March 18, 2019
- 19-WTP-0037, “Contract No. DE-AC27-01RV14136 – Approval of Point Adjustment Associated with Baseline Change Proposal 24590-WTP-TN-PC-18-0010, ‘BOF – Delete Startup System DIW-B-02,’” dated March 25, 2019
- 19-QAD-0012, “Contract No. DE-AC27-01RV14136 – U.S. Department of Energy, Office of River Protection Closure of Priority Level 2 Findings U-14-QAD-RPPWTP-003-F01 (Commercial Grade Dedication) and S-17-QAD-RPPWTP-002-F01 (Quality Verification Documents),” dated March 26, 2019.
- 19-QAD-0007, “Contract No. DE-AC27-01RV14136 – U.S. Department of Energy, Office of River Protection Closure of Priority Level 1 Findings U-13-QAT-RPPWTP-001-F01, Quality Assurance Program Review,” dated March 27, 2019

Enclosure

(24 Pages Excluding Cover Sheet)

Written Directives from January 1, 2019, through March 31, 2019



OFFICE OF RIVER PROTECTION

P.O. Box 450, MSIN H6-60
Richland, Washington 99352

JAN 14 2019

19-WTP-0002

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

Mrs. McCain:

CONTRACT NO. DE-AC27-01RV14136 – APPROVAL OF POINT ADJUSTMENT
ASSOCIATED WITH BASELINE CHANGE PROPOSAL 24590-WTP-TN-PC-18-0181,
REV 0, “LAW – PDSA – CONSTRUCTION QUANTITY AWARENESS”

Reference: BNI letter from Valerie McCain to T.W. Fletcher, ORP, “Baseline Change
Proposal 24590-WTP-TN-PC-18-0181, Rev. 0, LAW – PDSA – Construction
Quantity Awareness,” CCN: 308482, dated December 11, 2018.

The U.S. Department of Energy, Office of River Protection hereby approves implementation of the historical Point Adjustment of \$355.8K associated with the subject Baseline Change Proposal (BCP). The scope for the subject BCP ties to a reconciliation of quantities (and associated construction craft labor) between the baseline and changes resulting from implementation of the Low-Activity Waste Preliminary Documented Safety Analysis. The BCP decreases the budget in the Performance Measurement Baseline by \$293.7K, and includes a negative Point Adjustment of \$355.8K, which results from the deletion of about 4,000 craft hours, all of which were scheduled prior to the date of the BCP, and will not now be done.

The action taken herein is considered to be within the scope of work of the existing contract and does not authorize the Contractor to incur any additional costs (either direct or indirect) or delay delivery to the Government. If the Contractor considers that carrying out this action will increase contract/project costs or delay of delivery, the Contractor shall promptly notify the Contracting Officer orally, confirming and explaining the notification in writing within ten (10) calendar days, and otherwise comply with the requirements of the Contract clause I.84 FAR 52.243-7, -- “Notification of Changes (APR 1984).” Following submission of the written notice of impacts, the Contractor shall await further direction from the Contracting Officer.

JAN 14 2019

Valerie McCain
19-WTP-0002

-2-

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.



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

JAN 28 2019

19-WTP-0003

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

Mrs. McCain:

CONTRACT NO. DE-AC27-01RV14136 – APPROVAL OF POINT ADJUSTMENT ASSOCIATED WITH BASELINE CHANGE PROPOSAL 24590-WTP-TN-PC-18-0103, “DFLAW – REPLAN TO ALIGN PMB TARGET SCHEDULE AND APPROVED BASELINE CHANGE PROPOSALS APR-SEPT 2018”

Reference: BNI letter from V. McCain to T.W. Fletcher, ORP, “Baseline Change Proposal 24590-WTP-TN-PC-18-0103, DFLAW – Replan to Align PMB Target Schedule and Approved BCPs Apr-Sept 18,” CCN: 308478, dated December 18, 2018.

The U.S. Department of Energy, Office of River Protection hereby approves implementation of the negative historical Point Adjustment of \$148,315,200 associated with the subject Baseline Change Proposal (BCP). The subject BCP aligns the baseline to the March 2018 forecast update, and incorporates BCPs approved during April–September of 2018. This effort will result in more meaningful monthly earned value date reporting. The BCP decreases the budget in the Performance Measurement Baseline by (\$17,356,800) and includes a Point Adjustment of (\$148,315,200), which results from replanning of budget scheduled prior to the data-date of the BCP to the near-term and future fiscal years.

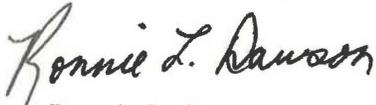
The action taken herein is considered to be within the scope of work of the existing contract and does not authorize the Contractor to incur any additional costs (either direct or indirect) or delay delivery to the Government. If the Contractor considers that carrying out this action will increase contract/project costs or delay of delivery, the Contractor shall promptly notify the Contracting Officer orally, confirming and explaining the notification in writing within ten (10) calendar days, and otherwise comply with the requirements of the Contract clause I.84 FAR 52.243-7, -- “Notification of Changes (APR 1984).” Following submission of the written notice of impacts, the Contractor shall await further direction from the Contracting Officer.

JAN 28 2019

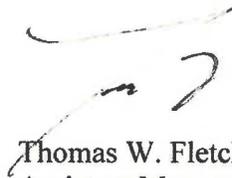
Valerie McCain
19-WTP-0003

-2-

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.



Ronnie L. Dawson
Contracting Officer



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

WTP:RLC

cc: BNI Correspondence



OFFICE OF RIVER PROTECTION
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Richland, Washington 99352

JAN 30 2019

19-QAD-0001

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

Mrs. McCain:

CONTRACT NO. DE-AC27-01RV14136 – U.S. DEPARTMENT OF ENERGY, OFFICE OF RIVER PROTECTION APPROVAL OF DELIVERABLE 7.2 – COMMISSIONING AND OPERATIONS QUALITY ASSURANCE PROGRAM DOCUMENT REVISIONS

- References:
1. BNI letter from V.S. McCain to T.W. Fletcher, ORP, "Response to ORP Conditional Approval of the Commissioning and Operations [sic] Graded Approach and Quality Assurance Implementation Plan," CCN: 306965, dated December 21, 2018.
 2. ORP letter from R.E. Cone, Jr. and B.J. Harp to B.P. Reilly, BNI, "U.S. Department of Energy, Office of River Protection Approval of Deliverable 7.2 - Commissioning and Operations Quality Assurance Program Documents," 18-QAD-0061, dated September 21, 2018.

The U.S. Department of Energy, Office of River Protection (ORP) has reviewed the proposed changes submitted in Reference 1. Based on this review, ORP approves the following Bechtel National, Inc. (BNI), Commissioning and Operations (C&O) Quality Assurance Program (QAP) document updates:

- 24590-WTP-QIP-RAQA-QA-0001, Rev. 1, *Commissioning and Operations Quality Assurance Implementation Plan.*
- 24590-WTP-PD-RAQA-QA-0002, Rev. 1, *Commissioning and Operations Graded Approach.*

These updated documents adequately addressed two of the three conditions, as documented within Reference 2.

As such, the following remains in effect at this time: "1. BNI shall update the engineering, procurement, and construction (EPC) QAP to be consistent with the C&O QAP during the next regularly scheduled revision to the EPC QAP and no later than November 1, 2019. Until such time as the EPC QAP is updated, if conflicts arise between 24590-WTP-PD-RAQA-0001, Quality Assurance Program Description, and the EPC QAP, the Quality Assurance Program Description shall take precedence."

ORP approval of the C&O QAP does not constitute ORP approval of the referenced implementing mechanisms, and does not confer a determination that these procedures represent an adequate implementation of the specified requirements.

BNI is also authorized to immediately revise and implement the necessary procedures to apply the C&O Graded Approach (24590-WTP-PD-RAQA-QA-002) for procuring LBL spares, replacement parts and material. Additionally, BNI may request approval to implement other portions of the C&O Graded Approach to achieve further benefits.

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



Ronnie L. Dawson
Contracting Officer



Ben J. Harp
Deputy Manager

QAD:FJD

cc: C.K. Binns, BNI
A.J. Dobson, BNI
J.H. Dunkirk, BNI
M.A. Fortier, BNI
L.L. Fritz, BNI
P.W. Jackson, BNI
B.D. Ponte, BNI
F. Presti, BNI
T.K. Reagan, BNI
S.S. Shyu, BNI
J. Tibble, BNI
BNI Correspondence



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JAN 30 2019

19-NSD-0001

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

Mrs. McCain:

**CONTRACT NO. DE-AC27-01RV14136 – PROPOSED REVISIONS TO CONTRACT
SECTION C STANDARD 9 REQUIREMENTS**

Bechtel National, Inc. (BNI) and the U.S. Department of Energy, Office of River Protection (ORP) have jointly developed a proposed change to Waste Treatment and Immobilization Plant Contract No. DE-AC27-01RV14136, *Design, Construction, and Commissioning of the Hanford Tank Waste Treatment and Immobilization Plant*, Section C, "Statement of Work," Standard 9, "Nuclear Safety (Table C.5-1.1, Deliverable 9.1)," as provided in the Attachment. The proposed changes clarify contract requirements associated with the implementation of document 24590-LAW-DSA-NS-18-0001, *Documented Safety Analysis for the Low-Activity Waste Facility*, Rev. 0a, and 24590-LAW-TSR-NS-18-0001, *Low-Activity Waste Facility Technical Safety Requirements*, Rev. 0a, as required by 10 CFR 830, *Safety Basis*. The change also relaxes the periodicity of some submittals from those currently required.

This change is not judged to create any cost or schedule impacts. Accordingly, ORP intends to incorporate this change into a forthcoming contract modification. If BNI believes there are cost or schedule impacts, BNI is requested to inform ORP within 30 days.

If you have any questions, please contact either of us, or your staff may contact Glyn Trenchard, Assistant Manager, Technical and Regulatory Support, (509) 373-4016.

Handwritten signature of Ronnie L. Dawson in cursive.

Ronnie L. Dawson
Contracting Officer

Handwritten signature of Thomas W. Fletcher in cursive.

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

NSD:MGA

Attachment

cc w/attach:
R.T. Brock, BNI
I. Milgate, BNI
BNI Correspondence



OFFICE OF RIVER PROTECTION

P.O. Box 450, MSIN H6-60
Richland, Washington 99352

FEB 04 2019

19-WTP-0005

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-18-0137, “CGD EOC REQUIREMENTS VERIFICATION
MATRIX FOR LAW Q EQUIPMENT”**

- References:
1. BNI letter from V. McCain to T.W. Fletcher, ORP, “Baseline Change Proposal 24590-WTP-TN-PC-18-0137, CGD EOC Requirements Verification Matrix for LAW Q Equipment,” CCN: 308483, dated December 18, 2018.
 2. ORP letter from B.J. Harp and R.L Dawson to C.K. Binns, BNI, “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,” 18-CPM-0143, dated October 11, 2018.

The U.S. Department of Energy (DOE), Office of River Protection (ORP), in accordance with the Waste Treatment and Immobilization Plant Contract, Section C, Standard 1(a), hereby approves the subject Baseline Change Proposal (BCP) as requested in Reference 1. The scope in the subject BCP relates to the development of requirements verification matrices utilizing the commercial grade dedication documentation for Q equipment in the Low-Activity Waste Facility, as added by ORP to the contract in Contract Modification 438 (Reference 2). This BCP adds the subject scope and budget to the current Control Account Budgeted Cost of Work Scheduled, increasing the Performance Measurement Baseline by \$649,000.

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

A handwritten signature in blue ink, appearing to read "Tom Fletcher".

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

WTP:RLC

cc: BNI Correspondence



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P.O. Box 450, MSIN H6-60
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FEB 14 2019

19-WTP-0007

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

Mrs. McCain:

CONTRACT NO. DE-AC27-01RV14136 – APPROVAL OF POINT ADJUSTMENT ASSOCIATED WITH BASELINE CHANGE PROPOSAL 24590-WTP-TN-PC-18-0195, “DFLAW – EMF TRANSFER OF HTE SCOPE TO A SUBCONTRACT”

Reference: BNI letter from V. McCain to T.W. Fletcher, ORP, “Baseline Change Proposal 24590-WTP-TN-PC-18-0195, DFLAW – EMF Transfer of HTE Scope to a Subcontract,” CCN: 308484, dated January 9, 2019.

The U.S. Department of Energy (DOE), Office of River Protection (ORP) hereby approves implementation of the negative historical Point Adjustment of (\$299,000) associated with the subject Baseline Change Proposal (BCP). The subject BCP transfers baseline scope from craft labor to subcontracted work, based on a make-buy decision. The BCP decreases the budget in the Performance Measurement Baseline by (\$9,500) and includes a Point Adjustment of (\$299,000), and is being done in accordance with contractor procedures.

The action taken herein is considered to be within the scope of work of the existing contract and does not authorize the Contractor to incur any additional costs (either direct or indirect) or delay delivery to the Government. If the Contractor considers that carrying out this action will increase contract/project costs or delay of delivery, the Contractor shall promptly notify the Contracting Officer orally, confirming and explaining the notification in writing within ten (10) calendar days, and otherwise comply with the requirements of the Contract clause I.84 FAR 52.243-7, -- “Notification of Changes (APR 1984).” Following submission of the written notice of impacts, the Contractor shall await further direction from the Contracting Officer.

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.

A handwritten signature in black ink, appearing to read "T. W. Fletcher".

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
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FEB 14 2019

19-WTP-0008

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

Mrs. McCain:

**CONTRACT NO. DE-AC27-01RV14136 – APPROVAL OF POINT ADJUSTMENT
ASSOCIATED WITH BASELINE CHANGE PROPOSAL 24590-WTP-TN-PC-18-0106, “BOF
STEAM PLANT TESTING SUBCONTRACT”**

Reference: BNI letter from V. McCain to T.W. Fletcher, ORP, “Baseline Change
Proposal 24590-WTP-TN-PC-18-0106, BOF Steam Plant Testing
Subcontract,” CCN: 308485, dated January 9, 2019.

The U.S. Department of Energy (DOE), Office of River Protection (ORP) hereby approves implementation of the historical Point Adjustment of \$669,900 associated with the subject Baseline Change Proposal (BCP). The subject BCP transfers baseline scope from craft labor to subcontracted work, based on a make-buy decision. The BCP increases the budget in the Performance Measurement Baseline by \$2,636,000 and includes a Point Adjustment of \$669,900, and is being done in accordance with contractor procedures.

The action taken herein is considered to be within the scope of work of the existing contract and does not authorize the Contractor to incur any additional costs (either direct or indirect) or delay delivery to the Government. If the Contractor considers that carrying out this action will increase contract/project costs or delay of delivery, the Contractor shall promptly notify the Contracting Officer orally, confirming and explaining the notification in writing within ten (10) calendar days, and otherwise comply with the requirements of the Contract clause I.84 FAR 52.243-7, -- “Notification of Changes (APR 1984).” Following submission of the written notice of impacts, the Contractor shall await further direction from the Contracting Officer.

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.

A handwritten signature in black ink, appearing to read "Tom Fletcher".

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

WTP:RLC

cc: BNI Correspondence



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FEB 14 2019

19-WTP-0009

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

Mrs. McCain:

**CONTRACT NO. DE-AC27-01RV14136 – APPROVAL OF POINT ADJUSTMENT
ASSOCIATED WITH BASELINE CHANGE PROPOSAL 24590-WTP-TN-PC-18-0119,
“WTCC SAFETY & HEALTH STAFFING & ODC”**

Reference: BNI letter from V. McCain to T.W. Fletcher, ORP, “Baseline Change Proposal 24590-WTP-TN-PC-18-0119, WTCC Safety & Health Staffing & ODC,” CCN: 308486, dated January 9, 2019.

The U.S. Department of Energy (DOE), Office of River Protection (ORP) hereby approves implementation of the historical Point Adjustment of (\$2,718,400) associated with the subject Baseline Change Proposal (BCP). The subject BCP included multiple transfers of baseline scope related to the RadCon effort, as part of a mini-replan resulting from optimization and alignment planning efforts between the Plant Management and Safety and Health groups. The BCP increases the budget in the Performance Measurement Baseline by (\$6,890,700) and includes a Point Adjustment of (\$2,718,400), and is being done in accordance with contractor procedures.

The action taken herein is considered to be within the scope of work of the existing contract and does not authorize the Contractor to incur any additional costs (either direct or indirect) or delay delivery to the Government. If the Contractor considers that carrying out this action will increase contract/project costs or delay of delivery, the Contractor shall promptly notify the Contracting Officer orally, confirming and explaining the notification in writing within ten (10) calendar days, and otherwise comply with the requirements of the Contract clause I.84 FAR 52.243-7, -- “Notification of Changes (APR 1984).” Following submission of the written notice of impacts, the Contractor shall await further direction from the Contracting Officer.

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

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

WTP:RLC

cc: BNI Correspondence



OFFICE OF RIVER PROTECTION

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MAR 18 2019

19-WTP-0023

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, “DFLAW - IMPLEMENTATION OF ASME B31.3 CODE
BREAK IN EMF LOW POINT DRAIN BLDG”

- References:
1. BNI letter from V. McCain to T.W. Fletcher, ORP, “Supersedes CCN 308477 - Baseline Change Proposal 24590-WTP-TN-PC-18-0139, Rev 0, DFLAW - Implementation of ASME B31.3 Code Break in EMF Low Point Drain Bldg,” CCN: 310152, dated November 20, 2018.
 2. ORP letter from T.W. Fletcher to V. McCain, BNI, “Approval of Baseline Change Proposal 24590-WTP-TN-PC-18-0139, Implementation of ASME B13.3 Code Break In EMF Low Point Drain Bldg,” 18-WTP-0134, dated November 19, 2018.
 3. BNI letter from V. McCain to T.W. Fletcher, ORP, “Baseline Change Proposal 24590-WTP-TN-PC-18-0139, Rev 0, DFLAW - Implementation of ASME B13.3 Code Break in EMF Low Point Drain Bldg,” CCN: 308477, dated October 18, 2018.
 4. 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 (DOE), 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 4), 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.

MAR 18 2019

Valerie McCain
19-WTP-0023

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BNI requested DOE approval for BCP 24590-WTP-TN-PC-18-0139 in October 2018 via CCN308477 (Reference 3). BNI's request was approved in November 2018 by DOE letter 18-WTP-0134 (Reference 2). BNI subsequently revised the change to correct typographical errors and resubmitted the BCP November 20, 2018 with BNI letter CCN 310152, (Reference 1). This letter formally communicates DOE approval of the revised BCP (24590-WTP-TN-PC-18-0139).

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:JJD

cc: BNI Correspondence



OFFICE OF RIVER PROTECTION

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MAR 18 2019

19-WTP-0030

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

Mrs. McCain:

CONTRACT NO. DE-AC27-01RV14136 – APPROVAL OF POINT ADJUSTMENT ASSOCIATED WITH BASELINE CHANGE PROPOSAL 24590-WTP-TN-PC-18-0148, “LAW: RETURN BUDGET FOR SUSPENDED OPERATIONS RESEARCH AND G2 MODELING WORK TO MANAGEMENT RESERVE”

Reference: BNI letter from V. McCain to T.W. Fletcher, ORP, “Baseline Change Proposal 24590-WTP-TN-PC-18-0148, LAW: Return Budget for Suspended Operations Research and G2 Modeling Work to Management Reserve,” CCN: 308489, dated February 7, 2019.

The U.S. Department of Energy (DOE), Office of River Protection (ORP) hereby approves implementation of the historical Point Adjustment of **(\$172,000)** associated with the subject Baseline Change Proposal (BCP) (because of earned value measurement earning issues associated with deleted work scope). The subject BCP removes budget associated with Operation Research and G2 Modeling scope, which Modification 409 deleted from the contract (dated December 13, 2017). The BCP decreases the budget in the Performance Measurement Baseline by **(\$399,900)**, including the Point Adjustment of **(\$172,000)**, and is being done in accordance with contractor procedures.

However, the processing of this BCP does not meet ORP’s expectations for timely BCPs. This BCP was not opened until almost one year after the work scope for this customer-deleted work scope was removed by Modification 409, resulting in the need for a historical Point Adjustment. As this is a change control processing and quality issue, ORP will take this, as well as other similar BCPs, into account in the evaluation of the contractor’s performance related to the Performance Evaluation and Measurement Plan fee determination.

The action taken herein is considered to be within the scope of work of the existing contract and does not authorize the Contractor to incur any additional costs (either direct or indirect) or delay delivery to the Government. If the Contractor considers that carrying out this action will increase

MAR 18 2019

Valerie McCain
19-WTP-0030

-2-

contract/project costs or delay of delivery, the Contractor shall promptly notify the Contracting Officer orally, confirming and explaining the notification in writing within ten (10) calendar days, and otherwise comply with the requirements of the Contract clause I.84 FAR 52.243-7, -- "Notification of Changes (APR 1984)." Following submission of the written notice of impacts, the Contractor shall await further direction from the Contracting Officer.

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:RLC

cc: BNI Correspondence



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MAR 18 2019

19-WTP-0031

Valerie McCain, Project Director
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Richland, Washington 99354

Mrs. McCain:

CONTRACT NO. DE-AC27-01RV14136 – APPROVAL OF POINT ADJUSTMENT ASSOCIATED WITH BASELINE CHANGE PROPOSAL 24590-WTP-TN-PC-19-0019, “LAW-LAB RE-PURPOSE AND SUPPORT OF INTERFACE EQUIPMENT BETWEEN THE INTEGRATED CONTROL NETWORK AND THE PLANT INFORMATION NETWORK”

Reference: BNI letter from V. McCain to T.W. Fletcher, ORP, “Baseline Change Proposal 24590-WTP-TN-PC-19-0019, LAW-LAB Re-purpose and Support of Interface Equipment between the Integrated Control Network and the Plant Information Network,” CCN: 308490, dated February 7, 2019.

The U.S. Department of Energy (DOE), Office of River Protection (ORP) hereby approves implementation of the negative historical Point Adjustment of **(\$42,800)** associated with the subject Baseline Change Proposal (BCP) (because of earned value measurement earning issues associated with deleted work scope). The subject BCP removes scope and budget for engineering hours and equipment as a result of a change in strategy. The BCP decreases the budget in the Performance Measurement Baseline by **(\$1,280,300)**, including the Point Adjustment of **(\$42,800)**, and is being done in accordance with contractor procedures.

However, the processing of this BCP does not meet ORP’s expectations for timely BCPs. This BCP was not opened until December 2018, whereas this scope was scheduled to start in March 2018, resulting in the need for a historical Point Adjustment. As this is a change control processing and quality issue, ORP will take this, as well as other similar BCPs, into account in the evaluation of Bechtel National, Inc.’s performance related to the Performance Evaluation and Measurement Plan fee determination.

The action taken herein is considered to be within the scope of work of the existing contract and does not authorize the Contractor to incur any additional costs (either direct or indirect) or delay delivery to the Government. If the Contractor considers that carrying out this action will increase

MAR 18 2019

Valerie McCain
19-WTP-0031

-2-

contract/project costs or delay of delivery, the Contractor shall promptly notify the Contracting Officer orally, confirming and explaining the notification in writing within ten (10) calendar days, and otherwise comply with the requirements of the Contract clause I.84 FAR 52.243-7, -- "Notification of Changes (APR 1984)." Following submission of the written notice of impacts, the Contractor shall await further direction from the Contracting Officer.

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:RLC

cc: BNI Correspondence



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MAR 25 2019

19-WTP-0037

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

Mrs. McCain:

CONTRACT NO. DE-AC27-01RV14136 – APPROVAL OF POINT ADJUSTMENT
ASSOCIATED WITH BASELINE CHANGE PROPOSAL 24590-WTP-TN-PC-19-0010,
“BOF – DELETE STARTUP SYSTEM DIW-B-02”

Reference: BNI letter from V. McCain to T.W. Fletcher, ORP, “Baseline Change Proposal
24590-WTP-TN-PC-19-0010, BOF – Delete Startup System DIW-B-02,”
CCN: 312382, dated February 26, 2019.

The U.S. Department of Energy (DOE), Office of River Protection (ORP) hereby approves implementation of the negative historical Point Adjustment of **(\$71,965)** associated with the subject Baseline Change Proposal (BCP) (because of earned value measurement earning issues associated with deleted work scope). The subject BCP removes scope and budget for the BOF DIW-B-02 Demineralized Water System, which was determined to not be needed for startup of DFLAW. The BCP decreases the budget in the Performance Measurement Baseline by **(\$508,942)**, including the Point Adjustment of **(\$71,965)**, and is being done in accordance with contractor procedures.

However, the processing of this BCP does not meet ORP’s expectations for timely BCPs. This BCP was not opened until November 2018, when some scope was scheduled to start in September and October of 2018, resulting in the need for a historical Point Adjustment. As this is a change control processing and quality issue, ORP will take this, as well as other similar BCPs, into account in the evaluation of Bechtel National, Inc.’s performance related to the Performance Evaluation and Measurement Plan fee determination.

The action taken herein is considered to be within the scope of work of the existing contract and does not authorize the Contractor to incur any additional costs (either direct or indirect) or delay delivery to the Government. If the Contractor considers that carrying out this action will increase contract/project costs or delay of delivery, the Contractor shall promptly notify the Contracting Officer orally, confirming and explaining the notification in writing within ten (10) calendar days, and otherwise comply with the requirements of the Contract clause I.84 FAR 52.243-7, -- “Notification of Changes (APR 1984).” Following submission of the written notice of impacts, the Contractor shall await further direction from the Contracting Officer.

MAR 25 2019

Valerie McCain
19-WTP-0037

-2-

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



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

WTP:RLC

cc: BNI Correspondence



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Richland, Washington 99352

MAR 26 2019

19-QAD-0012

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

Mrs. McCain:

CONTRACT NO. DE-AC27-01RV14136 – U.S. DEPARTMENT OF ENERGY, OFFICE OF RIVER PROTECTION CLOSURE OF PRIORITY LEVEL 2 FINDINGS U-14-QAD-RPPWTP-003-F01 (COMMERCIAL GRADE DEDICATION) AND S-17-QAD-RPPWTP-002-F01 (QUALITY VERIFICATION DOCUMENTS)

- References:
1. ORP letter from R.L. Dawson and K.W. Smith to M. 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.
 2. ORP letter from J.F. Grindstaff to K.D. Irwin, BNI, "Field Surveillance Report, S-17-QAD-RPPWTP-002, Waste Treatment and Immobilization Plant, Office of River Protection, Quality Assurance Division Review of Bechtel National, Inc. Quality Verification Document Packages," 17-QAD-0026, dated July 26, 2017.

The U.S. Department of Energy, Office of River Protection (ORP) conducted two oversight reviews – one audit in 2014 for Commercial Grade Dedication (CGD) [Reference 1] and one surveillance in 2017 for Quality Verification Documents (QVD) [Reference 2], and issued two Priority Level-2 findings - one from each review. The two findings were:

- U-14-QAD-RPPWTP-003-F01: The Bechtel National, Inc. (BNI) CGD Program elements examined were not consistently implemented, and were not fully effective in establishing reasonable assurance that BNI and vendor procured items met the required safety functions.
- S-17-QAD-RPPWTP-002-F01: Reviewed QVD packages did not adequately implement the Quality Assurance Manual (24590-WTP-QAM-QA-06-001), Rev. 17, requirements and commitments under letter CCN: 265651, Extent of Condition and Path Forward for Issues Identified in Audit Report DOE/IG-0894, dated October 17, 2014.

MAR 26 2019

ORP has completed its closure verification and effectiveness reviews of BNI's corrective actions for both the CGD and QVD findings. The results of ORP's closure verifications and effectiveness reviews are documented in the attached surveillance reports, as follows:

- Attachment 1: 19237-WTP: "Surveillance of Bechtel National, Inc.'s Implementation of Corrective and Recurrence Control Actions for Commercial Grade Dedication Condition Report 24590-WTP-MGT-GCA-15-00338," dated March 25, 2019.
- Attachment 2: Report 18071-WTP: "Review of BNI's 24590-WTP-GCA-MGT-17-01177, Corrective Actions and BNI's Effectiveness Review regarding QAD (Priority Level-2) Finding S-17-QAD-RPPWTP-002-F01 - QVD Packages," dated March 25, 2019.

BNI's corrective actions for both the CGD and QVD findings, including actions to address two related Managed Improvement Items 55 and 61, were determined to be complete. Based on these conclusions, ORP has closed Findings U-14-QAD-RPPWTP-003-F01 and S-17-QAD-RPPWTP-002-F01.

During the course of ORP's closure verification process for the CGD finding, seven issues were identified and categorized as findings in Surveillance Report 19237-WTP. These seven issues were not directly associated with the CGD program, and do not impact ORP's conclusions regarding BNI's current CGD program implementation. BNI is requested to address these findings under their corrective action management program.

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

Attachments: (2)

cc w/attachs:
J. Tibble, BNI
BNI Correspondence



OFFICE OF RIVER PROTECTION

P.O. Box 450, MSIN H6-60
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MAR 27 2019

19-QAD-0007

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

Mrs. McCain:

CONTRACT NO. DE-AC27-01RV14136 – U.S. DEPARTMENT OF ENERGY, OFFICE OF RIVER PROTECTION CLOSURE OF PRIORITY LEVEL 1 FINDING U-13-QAT-RPPWTP-001-F01, QUALITY ASSURANCE PROGRAM REVIEW

- References:
1. ORP letter from K.W. Smith to M. McCullough, BNI, "Audit Report U-13-QAT-RPPWTP-001, Bechtel National, Inc. Quality Assurance Program Requirements 3, 4, 7, 8, 15, and 16, and Direction to Perform Managed Improvement Plan," 13-ORP-0281, dated October 28, 2013.
 2. ORP letter from R.L. Dawson and K.W. Smith to M. McCullough, BNI, "Audit Report U-16-QAD-RPPWTP-001, Effectiveness Determination of Bechtel National, Inc. Project Office Corrective Actions Related to Audit Findings U-13-QAT-RPPWTP-001-F01 and U-13-QAT-RPPWTP-001-F02, and Overall Adequacy, Implementation, and Effectiveness of Bechtel National, Inc.'s Quality Assurance Program," 16-QAD-0066, dated February 1, 2017.
 3. ORP letter from W.F. Hamel to K.D. Irwin, BNI, "U.S. Department of Energy, Office of River Protection Transmittal of Audit Report U-17-QAD-RPPWTP-001, Bechtel National, Inc., Low-Activity Waste Caustic Scrubber Vessel Vertical Slice Audit and Closure Verification of Corrective Actions to U.S. Department of Energy, Office of River Protection Audit U-12-ESQ-RPPWTP-002-F03," 17-QAD-0015, dated May 4, 2017.
 4. BNI letter from M. McCullough to K.W. Smith, ORP, "Managed Improvement Plan," CCN: 262442, dated August 28, 2014.

The U.S. Department of Energy, Office of River Protection (ORP), performed three audits / surveillances between October 2018 and March 2019, to evaluate closure and effectiveness of Bechtel National, Inc.'s (BNI) completed corrective actions (CA) addressing Priority Level-1 Finding U-13-QAT-RPPWTP-001-F01 (Reference 1), as well as findings documented in audits

U-16-QAD-RPPWTP-001 (Reference 2), and U-17-QAD-RPPWTP-001 (Reference 3). The reports for the three ORP audits / surveillances conducted between October and March are provided as Attachments 1 through 3, as follows:

- Attachment 1: Audit Report 18068-WTP, "Review of BNI's Completed Corrective Actions to Close the 2013 Priority Level-1 Finding U-13-QAT-RPPWTP-001-F01 and findings from Audits U-16-QAD-RPPWTP-001 and U-17-QAD-RPPWTP-001."
- Attachment 2: Surveillance Report 19236-WTP, "Surveillance of BNI CA Effectiveness Review for ORP Finding S-16-QAD-RPPWTP-001-F17."
- Attachment 3: Surveillance Report ORP-ASMT-2019-0182-AC01, "Software Quality Assurance Program."

ORP's 2013 Priority Level-1 Finding U-13-QAT-RPPWTP-001-F01 (Reference 1) concluded "BNI's overall quality assurance program had not been implemented in accordance with requirements and was not fully effective." Since that time, BNI has implemented quality assurance program actions in accordance with corrective action plans. In addition to the corrective action plans, BNI developed and implemented the Managed Improvement Plan (Reference 4). Collectively, the three audits / surveillances in Attachments 1 through 3 document that BNI has completed all CAs for the Priority Level-1 finding and the subsequent related audits (References 2 and 3). ORP has verified BNI's CAs, as documented in the Attachments, are adequately implemented and effective. Based on this conclusion, ORP has closed Priority Level-1 Finding U-13-QAT-RPPWTP-001-F01.

The surveillance report for the BNI software quality assurance program (Attachment 3), identified one Finding ORP-ASMT-2019-0182-AC01 associated with plant-installed software requirements traceability. BNI is requested to address this Finding ORP-ASMT-2019-0182-AC01 in their corrective action management program.

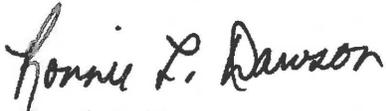
The action taken herein is considered to be within the scope of work of the existing contract and does not authorize the Contractor to incur any additional costs (either direct or indirect) or delay delivery to the Government. If the Contractor considers that carrying out this action will increase contract/project costs or delay of delivery, the Contractor shall promptly notify the Contracting Officer orally, confirming and explaining the notification in writing within ten (10) calendar days, and otherwise comply with the requirements of the Contract Clause I.84 FAR 52.243-7, -- "Notification of Changes (APR 1984)." Following submission of the written notice of impacts, the Contractor shall await further direction from the Contracting Officer.

Valerie McCain
19-QAD-0007

-3-

MAR 27 2019

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



Ronnie L. Dawson
Contracting Officer



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

QAD:MAR

Attachments: (3)

cc w/attachs:
J. Tibble, BNI
BNI Correspondence