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

**AUG 14 2018**

18-ECD-0051

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

Ms. Smith:

**AUGUST 2018 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 – APRIL 1, 2018, THROUGH JUNE 30, 2018**

This letter transmits the U.S. Department of Energy August 2018 Quarterly Report (Attachment) under Section IV-C-1 of the subject Consent Decree, for the period of April 1, 2018, through June 30, 2018. Pursuant to the Consent Decree, this report provides the status and progress made during the reporting period.

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

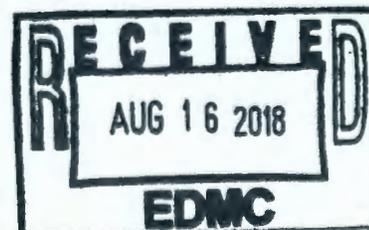
If you have any questions, please contact Thomas W. Fletcher, Assistant Manager, Waste Treatment and Immobilization Plant Project, (509) 376-4941, or Glyn D. Trenchard, Assistant Manager, Tank Farms Project, (509) 373-4016.

Brian T. Vance  
Manager

ECD:RLE

Attachment

cc: See page 2



Ms. Alexandra K. Smith  
18-ECD-0051

-2-

**AUG 14 2018**

cc w/attach:

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**Administrative Record**

cc w/o attach:

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

**Attachment  
18-ECD-0051  
(77 Pages Excluding Cover Sheet)**

**U.S. Department of Energy, Office of River Protection  
Quarterly Report, April 1, 2018, through June 30, 2018, and  
Tank Farm / Waste Treatment and Immobilization Plant  
Direction Letters**

# Office of River Protection Quarterly Report

**April 1, 2018, through June 30, 2018<sup>1</sup>**

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

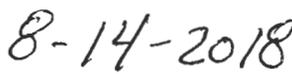
Amended Consent Decree, *State of Washington v. Dept. of Energy*, No: 2:08-CV-5085-RMP  
(March 11, 2016)

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



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

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

  
\_\_\_\_\_  
Date

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<sup>1</sup>Except where otherwise expressly stated, the narrative descriptions of progress in this report cover the period from April 1, 2018, through June 30, 2018. Earned Value Management System data and descriptions cover the period ending May 31, 2018.

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

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## Acronyms and Abbreviations

BCP	baseline change proposal
BNI	Bechtel National, Inc.
BOF	Balance of Facilities
C#V	ventilation system for potential contamination zones C#
CGD	commercial grade dedication
CV	cost variance
DFLAW	direct-feed low-activity waste
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
LLE	long-length equipment
ORP	Office of River Protection
PJM	pulse-jet mixer
PT	Pretreatment (Facility)
SCBA	self-contained breathing apparatus
SHSV	standard high-solids vessel
SV	schedule variance
USACE	U.S. Army Corps of Engineers
WRPS	Washington River Protection Solutions LLC
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 Amended Consent Decree in *State of Washington v. United States Department of Energy*, No: 2:08-CV-5085-RMP (March 11, 2016) and Second Amended Consent Decree, same case (April 12, 2016).

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

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

**Tank Farm Actions and Milestones**

Number	Title	Due Date	Status
<i>Actions</i>			
D-16E-01	DOE must purchase by December 31, 2016, a spare E-A-1 <sup>1</sup> reboiler for the 242-A Evaporator	12/31/2016	Complete
D-16E-02	Have a spare E-A-1 <sup>1</sup> 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.”	12/31/2020	Notice given that a serious risk has arisen. See letter 16-ORP-0097. <sup>2</sup>
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.”	03/31/2024	Notice given that a serious risk has arisen. See letter 16-ORP-0097. <sup>2</sup>

1 The Consent Decrees referred to the 242-A reboiler as “A-E-1”; the correct designation is “E-A-1.”

2 16-ORP-0097, 2016, “State of Washington v. Moniz, Case No. 2:08-CV-5085-RMP (E.D. WA),” (external letter to M. Bellon, Washington State Department of Ecology) from K.W. Smith, U.S. Department of Energy, Office of River Protection, Richland, Washington, December 6.

DOE = U.S. Department of Energy.

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. DOE formally notified Ecology on December 6, 2016, that a serious risk had arisen that DOE may be unable to meet Amended Consent Decree Milestones B-2 and B-3. As stated in DOE notification letter 16-ORP-0097, “State of Washington v. Moniz, Case No. 2:08-CV-5085-RMP (E.D. WA)”:

DOE’s ability to achieve these milestones has been adversely impacted by the expanded and extended use of self-contained breathing apparatus (SCBA) within all tank farms (i.e., all SST and Double-Shell Tank [DST]) farms resulting from issuance of the June 20, 2016 Demand Letter by the Hanford Atomic Metal Trades Council (HAMTC) to DOE and WRPS; the Stop Work Order issued by HAMTC on July 11, 2016; and the Memorandum of Agreement (MOA) entered into between HAMTC and WRPS on August 31, 2016.

***Tank Farms Assistant Manager:*** Glyn Trenchard

***Federal Program Manager:*** Jeff Rambo

### **Accomplishments in the Reporting Period**

#### ***Completed Accomplishments:***

- Completed long-length equipment (LLE) removal actions at Tank AX-102 and Tank AX-104:
  - AX02 Pit C-R1A P200 pump.
  - AX04 Pit B-R14 pump.
- Grouted and shipped the AX Tank Farm LLE for disposal:
  - AX02 Pit D R1C saltwell screen.
  - AX04 Pit A R5A sluicer.
- Release the C-105 Tank Sampling and Analysis Plan for post-retrieval sampling field work.
- Completed the Tank C-105 post-retrieval sampling for the retrieval data report.
- Completed the isolation of six out-of-service ventilation ducts at A Tank Farm.
- Completed installation of caustic and water piping system and conduit from A 285 Building to A Tank Farm fence.
- Installed foundations for AX Tank Farm control trailers.
- Delivered and installed the AX Tank Farm control trailers on the foundations.
- Resolved two stop works in March, related to use of self-contained breathing apparatus (SCBA) face masks, allowing tank farm work to resume.

- Cleared Washington River Protection Solutions LLC's (WRPS) RPP-RPT-60717, *Retrieval Completion Certification Report for Tank C-105*, Rev. 00, for public release on June 7, 2018. RPP-RPT-60717, and submitted the sub-certification to Ecology via letter 18-TF-0044, "The U.S. Department of Energy Office of River Protection Submits the Retrieval Completion Certification Report for Tank 241-C-105," dated June 28, 2018.
- Completed Phase I of the installation of AX Tank Farm control trailers POR471 (AX-102/AX-104) and POR498 (AX-101/AX-103).
- Completed Tank AX-101 Pit cleanout of AX01D and AX01C.
- Completed removal of AX-103 R9G vapor probe.

***Ongoing Activities:***

- Continue installation of the electrical infrastructure (power and control systems) inside the AX Tank Farm.
- Continue installation of caustic and water system piping from A Tank Farm fence line to POR496.
- Continue fieldwork (backfill, conduit, reinforcing steel, concrete formwork) for the installation of the pads for A Tank Farm exhausters (POR518/POR519).
- Continue to disconnect and remove hose-in-hose transfer lines in C Tank Farm and AN Tank Farm.
- Continue C Tank Farm layup activities by disconnecting and disposing of portable power, heat trace and temperature monitoring, leak detection, water, and hydraulic systems.
- Continue engineering evaluation of the high definition videos of Tanks A-104/A-105.
  - In January 2018, Ecology was briefed on the results of the high-definition camera and video inspections. DOE's continued evaluation of the extent of conditions in these tanks will inform ongoing discussions with Ecology regarding options for addressing potential retrieval challenges and environmental risks.
- Continue Tank AX-101 Pit AX01A and Tank AX-103 Pit AX03A cleanout activities (the work is intermittent as resources allow).

***Accomplishments Expected in the Next Reporting Period***

- Grout and ship the removed LLE from AX Tank Farm for disposal:
  - AX02 Pit C-R1A P 200 pump.
  - AX04 Pit B-R14 pump.
- Remove legacy LLE from Tank AX-104:
  - AX04 Pit A-R5B pump. (It has been determined that the safe removal of this pump, which is laying on the bottom of the tank in the waste, is not feasible. An alternative

path forward has been developed, which will move the pump aside to allow for the installation of waste retrieval equipment.)

- Disconnect power and cap POR107 exhauster (C Tank Farm layup).
- Disconnect power from Tank C-105 raw water skids (C Tank Farm layup).
- Disconnect 27 Tank C-105 electrical skids (C Tank Farm layup).
- Initiate Phase II of Tanks AX-102/AX-104 control trailer installation (POR471).
- Initiate direct-push sampling of soil at Tank A-104 and Tank A-105. Direct-push characterization uses a hydraulic ram to push steel pipe into the ground. It can install pipe in a vertical orientation or at an angle. This pipe can be used to obtain soil/water samples or install instrumentation.
- Complete isolation and layup of the POR357 raw water skid (C Tank Farm layup).

### **Issues Encountered in the Reporting Period**

- Reduced worker efficiencies associated with mandatory use of supplied air continues to impact work in the tank farms.
- The two stop work issues occurring in March were related to the condition of SCBA equipment. Additional staff have been certified to inspect and repair the equipment, in conjunction with a process to increase specific identification of items of concern to the user.
- Replacement of older SCBA assemblies is underway, but due to limited vendor inventory, there were shortages of replacement assemblies. Impacts to tank farm work were occurring due to the shortages of assemblies. The impact is lessening as additional SCBA assemblies are received.
- Efforts to remove LLE from Tank AX-102 and Tank AX-104 have been impacted by equipment conditions not matching existing design media. This required additional field investigation and analysis by engineering to ensure the LLE was safe to remove from the tank. Efforts to remove the stuck thermocouple (AX-102 R7A) were terminated, an alternate riser will be used for a camera installation.
- Weather delays (winds) impacted the removal of LLE.

### **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.

### **Actions Initiated or Taken to Address Potential Schedule Slippage**

- WRPS continues to increase the number of health physics technicians, industrial hygiene technicians, and skilled construction workforce to support tank waste retrieval efforts in the A and AX tank farms to support Amended Consent Decree Milestone B-2, "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,” and Milestone B-3, “Of the 12 SSTs referred to in B-1 and B-2, complete retrieval of tank wastes in at least 5.” These increases are taking place through additional hiring or transfers from other onsite contractors to support the removal of existing in-tank equipment and the installation of the waste retrieval systems in the single-shell tanks.

- A substantial increase in construction personnel is planned later in the year. The increase in personnel is expected to recover some schedule slippage. WRPS is increasing construction and support personnel for field work in AX and A tank farms. Currently, there are four crews deployed in AX Tank Farm. Schedule slippage refers to milestones B-2 and B-3, where DOE has already provided notice to Ecology that a serious risk has arisen where DOE may be unable to meet these milestones. See December 6, 2016, ORP letter 16-ORP-0097.

**Tank Waste Retrieval Work Plan Status**

<b>Tank</b>	<b>TWRWP</b>	<b>Expected Revisions</b>	<b>First</b>	<b>Second</b>	<b>Third</b>
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	–
C-105	RPP-22520, Rev. 8	Complete	MARS-V	MARS-V High-Pressure Water Spray	Chemical Dissolution Process with ERSS

ERSS = extended reach sluicer system.  
 MARS-V = Mobile Arm Retrieval System-Vacuum.  
 TWRWP = tank waste retrieval work plan.

**Accomplishments in the Reporting Period**

- None.

**Accomplishments Expected in the Next Reporting Period**

- None.

**Issues Encountered in the Reporting Period**

- None.

**Issues Expected in the Next Reporting Period**

- None.

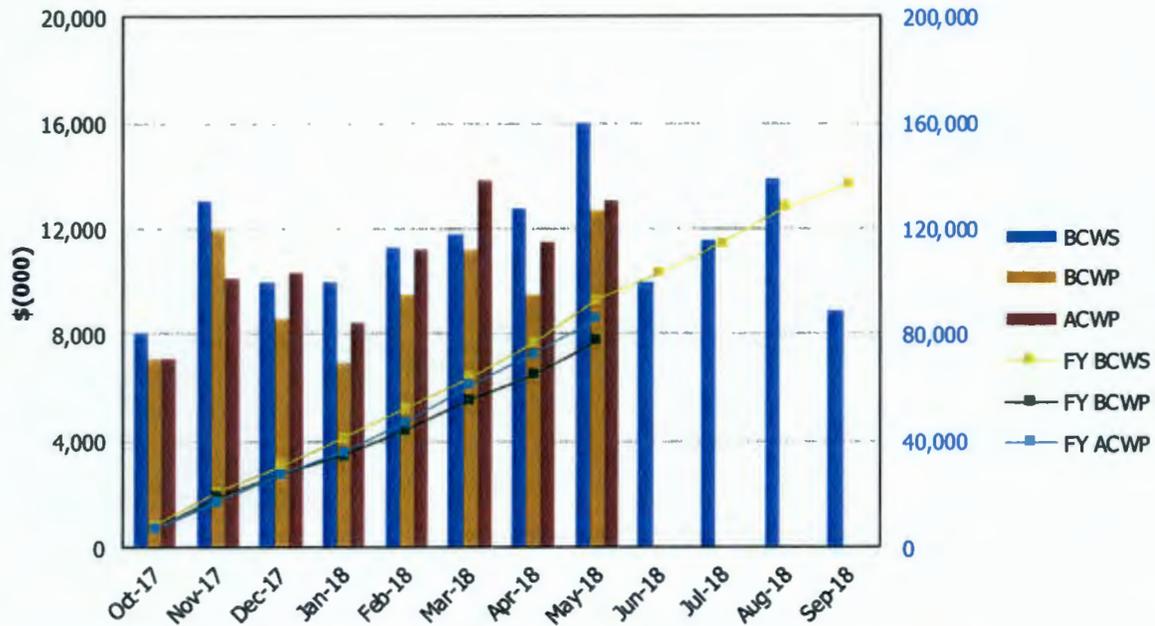
### Tank Farm Earned Value Management System Quarterly Analysis

Earned Value Data: Fiscal Year 2018

May-18

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

EVMS Monthly and Fiscal Year Values



Earned Value Month

Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2017	\$8,053	\$7,119	\$7,127	0.88	1.00	\$8,053	\$7,119	\$7,127	0.88	1.00
Nov 2017	\$13,058	\$11,996	\$10,119	0.92	1.19	\$21,111	\$19,115	\$17,246	0.91	1.11
Dec 2017	\$9,964	\$8,572	\$10,318	0.86	0.83	\$31,075	\$27,686	\$27,563	0.89	1.00
Jan 2018	\$9,940	\$6,911	\$8,464	0.70	0.82	\$41,015	\$34,597	\$36,027	0.84	0.96
Feb 2018	\$11,310	\$9,456	\$11,225	0.84	0.84	\$52,326	\$44,053	\$47,252	0.84	0.93
Mar 2018	\$11,787	\$11,248	\$13,799	0.95	0.82	\$64,113	\$55,301	\$61,051	0.86	0.91
Apr 2018	\$12,763	\$9,509	\$11,495	0.75	0.83	\$76,875	\$64,810	\$72,546	0.84	0.89
May 2018	\$15,972	\$12,694	\$13,076	0.79	0.97	\$92,848	\$77,504	\$85,622	0.83	0.91
Jun 2018	\$9,930					\$102,778				
Jul 2018	\$11,605					\$114,382				
Aug 2018	\$13,914					\$128,296				
Sep 2018	\$8,893					\$137,189				

CTD	\$896,419	\$882,167	\$924,174	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)<sup>3</sup>

Project EVMS reflects data for March 2018, April 2018, and May 2018.

#### Schedule Variance Summary:

- Work completed ahead of the planned schedule is reported as a favorable schedule variance (SV) for the month in which it is completed, but results in an unfavorable SV in the month the work was planned.
- For the March EVMS reporting period, a net **unfavorable** SV of (\$539,000) was reported, primarily due to the following:
  - Lack of sample crews due to other priorities (e.g., Tank AZ-102 and Tank AY-101 sampling) delayed Tank C-105 sampling and analysis.
  - Relocation of the exhausters required rerouting of the existing A Tank Farm access road. Changing the existing road was unscheduled rework and also impacted the work schedule for the A Tank Farm ventilation duct isolation.
  - Changes in the contracting strategy for the construction subcontracts in the A Tank Farm delayed contract award and impacted scheduled fieldwork.

For the April EVMS reporting period, a net **unfavorable** SV of (\$3,254,000) was reported, primarily due to the following:

- Delays in the completion of the drainage system connected to the evapotranspiration basin caused delays in mobilization of the asphalt barrier subcontractor. The subcontractor plans to recover the schedule during asphalt cover placement at SX Tank Farm.
- Delays associated with the A Tank Farm ventilation duct isolation as crews conducted mockups of grouting techniques to determine the best way to isolate existing underground ventilation ducting.
- Relocation of the A Tank Farm exhauster pad site required the need for additional excavation and retaining walls not part of the original design.
- Direct-push characterization and sampling work in A Tank Farm was delayed due to SX Tank Farm barrier work being done by the same subcontractor utilizing the same equipment. Direct-push characterization uses a hydraulic ram to push steel pipe into the ground. It can install pipe in a vertical orientation or at an angle. This pipe can be used to obtain soil/water samples or install instrumentation.

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<sup>3</sup> “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.”

For the May EVMS reporting period, a net **unfavorable** SV of (\$3,278,100) was reported, primarily due to the following:

- Site preparation work for the southern portion of the SX Tank Farm interim barrier was delayed due to changes in the facility requirements to house the work crew and support SCBA bottle equipment handling. The subcontractor originally proposed a tent for the field crew, but during planning it was determined the original size was not sufficient, so a decision was made to order a trailer. Additionally, progress of grading activities was interrupted by numerous cathodic protection interferences.
- Excavation work for the installation of electrical conduit for the AX Tank Farm electrical backbone is experiencing as-found conditions of higher than expected soil contamination requiring additional potholing to assist in the investigation of proposed alternate routes. Contaminated soil must be monitored, containerized, and disposed.

#### **Cost Variance Summary:**

For the March EVMS reporting period, a net **unfavorable** cost variance (CV) of (\$2,551,000) was reported, primarily due to the following:

- Vapor and beryllium controls, which require specific personal protective equipment (e.g., SCBA and gloves), and additional monitoring, sampling, and work package development, continue to impact the efficiency of personnel working in the tank farms.
- Excavation costs continued to increase for the north area of the SX Tank Farm interim barrier because much of the area must be excavated by hand, by personnel wearing SCBA. Minimal machine excavation is allowed due to unknown ground interferences inside SX Tank Farm. Discovery of old utility lines required additional engineering evaluation to determine the condition of the lines and requirements for cutting and capping the lines.
- Increased cost for retrieval operations training and qualifications due to additional health physics technicians, industrial health technicians, and construction crews hired to support acceleration of Tank AX-102 and Tank AX-104 waste retrieval.
- Degradation of the existing pump in Tank AX-104 Pit 04B Riser 14 necessitated additional field preparation activities, including videos of current pump status, and engineering evaluation of lifting techniques to provide a path forward for safe removal.
- A flange on the existing pump in Tank AX-102 Pit 02C Riser 1A is smaller than shown on design drawings and required additional engineering evaluation to determine how best to modify the interface between the pump flange and a spray ring used during removal of the pump.

For the April EVMS reporting period, a net **unfavorable** CV of (\$1,986,000) was reported, primarily due to the following:

- Vapor and beryllium controls, which require specific personal protective equipment (e.g., SCBA and gloves), and additional monitoring, sampling, and work package development continue to impact the efficiency of personnel working in the tank farms.

- Excavation costs continued to increase for the north area of the SX Tank Farm interim barrier because much of the area must be excavated by hand, by personnel wearing SCBA. Minimal machine excavation is allowed due to unknown ground interferences inside SX Tank Farm. Discovery of old utility lines required additional engineering evaluation to determine the condition of the lines and requirements for cutting and capping the lines.
- Degradation of the existing pump in Tank AX-104 Pit 04B Riser 14 necessitated additional field preparation activities, including videos of current pump status, and engineering evaluation of lifting techniques to provide a path forward for safe removal.
- A flange on the existing pump in Tank AX-102 Pit 02C Riser 1A is smaller than shown on design drawings and required additional engineering evaluation to determine how best to modify the interface between the pump flange and a spray ring used during removal of the pump.
- During excavations for the installation of electrical conduit, higher than expected soil contamination was encountered, which required additional excavations to support proposed alternate routes.

For the May EVMS reporting period, a net **unfavorable** CV of (\$382,000) was reported, primarily due to the following:

- Excavation work for the installation of electrical conduit for the AX Tank Farm electrical backbone is experiencing higher than expected soil contamination requiring additional potholing to assist in the investigation of proposed alternate routes. Contaminated soil must be monitored, containerized, and disposed.
- The coating material used on the AX Tank Farm water and caustic piping being installed was found to be defective and had to be removed and reapplied.

## Retrieval Labor Hours on Self-Contained Breathing Apparatus

*Tank Farms Assistant Manager:* Glyn Trenchard

*Federal Program Manager:* Jeff Rambo

Labor Hours Expended on Single-Shell Tank Retrieval Self-Contained Breathing Apparatus  
 April 1, 2018, through June 30, 2018.

	<b>SCBA Direct Labor Hours</b>	<b>SCBA Subcontractor Hours<sup>1</sup></b>	<b>Total SST Operation Hours</b>	<b>Total Hours<sup>2</sup></b>	<b>Total Percent on SCBA</b>	<b>Detrimental Impacts Days<sup>3</sup></b>
C Tank Farm	15,375	910	16,285	73,657	22%	56
A/AX Tank Farms	24,769	4,860	29,629	93,953	32%	57
<b>Total</b>	<b>40,144</b>	<b>5,770</b>	<b>45,914</b>	<b>167,610</b>	<b>27%</b>	<b>57</b>

<sup>1</sup> 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.

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

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

SCBA = self-contained breathing apparatus.

SST = single-shell tank.

## **Spare Reboiler Requirement Status**

***Tank Farms Assistant Manager:*** Glyn Trenchard

***Federal Program Manager:*** Paul Hernandez

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

- WRPS awarded a design/fabrication contract (purchase order 00061664) for the 242-A Evaporator spare reboiler to ABW Technologies, Inc. on November 15, 2016. WRPS had the kick off meeting with ABW Technologies, Inc. December 1, 2016.
- WRPS awarded a not-to-exceed design/build contract to ABW Technologies, Inc. in the amount of \$461,000 for fabrication of a spare reboiler, with delivery prior to December 31, 2018. Total estimate at completion is \$776,000.
- Fabrication of the spare 242-A Evaporator reboiler is complete. The reboiler shell, tubes, and tube sheet have been successfully hydro tested. On May 8, 2018, WRPS received the spare E-A-1 reboiler for the 242-A Evaporator into storage at the onsite 2101 M Warehouse.

## **Written Directives for Tank Farms**

Written directives given by DOE to the Tank Operations Contractor from April 1, 2018, through June 30, 2018, for work required by the Consent Decrees.

Two letters of direction were issued to WRPS during the reporting period in reference to Contract No. DE-AC27-08RV14800, *Tank Operations Contract*. The letters are listed below and copies are attached:

- 18-TF-0027, “Contract No. DE-AC27-08RV14800 – Path Forward for Post Fiscal Year 2018,” dated April 23, 2018.
- 18-TF-0032, “Contract No. DE-AC27-08RV14800 – U. S. Department of Energy, Office of River Protection Approval and Additional Direction for the Updated Lifecycle Baseline Update,” dated June 6, 2018.

## **Waste Treatment and Immobilization Plant Project**

***Federal Project Director:*** Tom Fletcher

***Deputy Federal Project Director:*** Vacant<sup>4</sup>

**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 May 2018, DFLAW modifications for the WTP Project were 45 percent complete, engineering design was 78 percent complete, procurement was 38 percent complete, and construction was 31 percent complete. As of May 2018, total LBL facilities were 65 percent complete, engineering design was 89 percent complete, procurement was 77 percent complete, construction was 76 percent complete, and startup and commissioning was 31 percent complete.

### **Accomplishments during the Reporting Period:**

- In accordance with the additional funding received for the High-Level Waste (HLW) Facility in the *Consolidated Appropriations Act, 2018*, ORP and Bechtel National, Inc. (BNI) continued limited engineering and conducted planning for fiscal year (FY) 2019 activities as resources become available from DFLAW/LBL.
- Other significant accomplishments during the reporting period are noted in project reports for the Pretreatment (PT) Facility, HLW Facility, LAW Facility, BOF, and LAB.

### **Accomplishments Expected Next Reporting Period:**

- In accordance with the additional funding received for the HLW Facility in the *Consolidated Appropriations Act, 2018*, ORP and BNI will develop the detailed work plan for FY 2019 utilizing the additional funds received in the FY 2018 congressional appropriation. In addition, BNI will continue limited engineering with available resources.
- Other accomplishments expected in the next reporting period are noted in the 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.

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<sup>4</sup> Joni Grindstaff was reassigned as Director of the Mission Integration Office, effective June 24, 2018.

**Issues Expected in the Next Reporting Period:**

- DOE received the final report of the U.S. Army Corps of Engineers' (USACE) parametric analysis of certain options and funding scenarios used to evaluate the likelihood of achieving PT- and HLW-related milestones. A copy of the final report was provided to Ecology on August 13, 2018. DOE is evaluating the report and after reconciliation of its findings, will develop a path forward focused on meeting treatment objectives.
- Other 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
<b>Waste Treatment and Immobilization Plant Project</b>			
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 <sup>1</sup>
D-00A-01	Achieve Initial Plant Operations for WTP	12/31/2036	Under Analysis <sup>1</sup>
<b>Pretreatment Facility</b>			
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 <sup>1</sup>
D-00A-13	Complete Installation of Pretreatment Feed Separation Vessels FEP-SEP-OOOO1A/1B	12/31/2031	Under Analysis <sup>1</sup>
D-00A-14	PT Facility Construction Substantially Complete	12/31/2031	Under Analysis <sup>1</sup>
D-00A-15	Start PT Facility Cold Commissioning	12/31/2032	Under Analysis <sup>1</sup>
D-00A-16	PT Facility Hot Commissioning Complete	12/31/2033	Under Analysis <sup>1</sup>
<b>High-Level Waste Facility</b>			
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 <sup>1</sup>
D-00A-03	Start HLW Facility Cold Commissioning	06/30/2032	Under Analysis <sup>1</sup>
D-00A-04	HLW Facility Hot Commissioning Complete	12/31/2033	Under Analysis <sup>1</sup>
<b>Low-Activity Waste Facility</b>			
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
<b>Balance of Facilities</b>			
D-00A-12	Steam Plant Construction Complete	12/31/2012	Complete
<b>Analytical Laboratory</b>			
D-00A-05	LAB Construction Substantially Complete	12/31/2012	Complete

1 As described in this report, DOE received the U.S. Army Corps of Engineers' final report on its parametric analysis of certain options and funding scenarios used to evaluate the likelihood of achieving PT- and HLW-related milestones. 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 Section IV-A-2: "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.

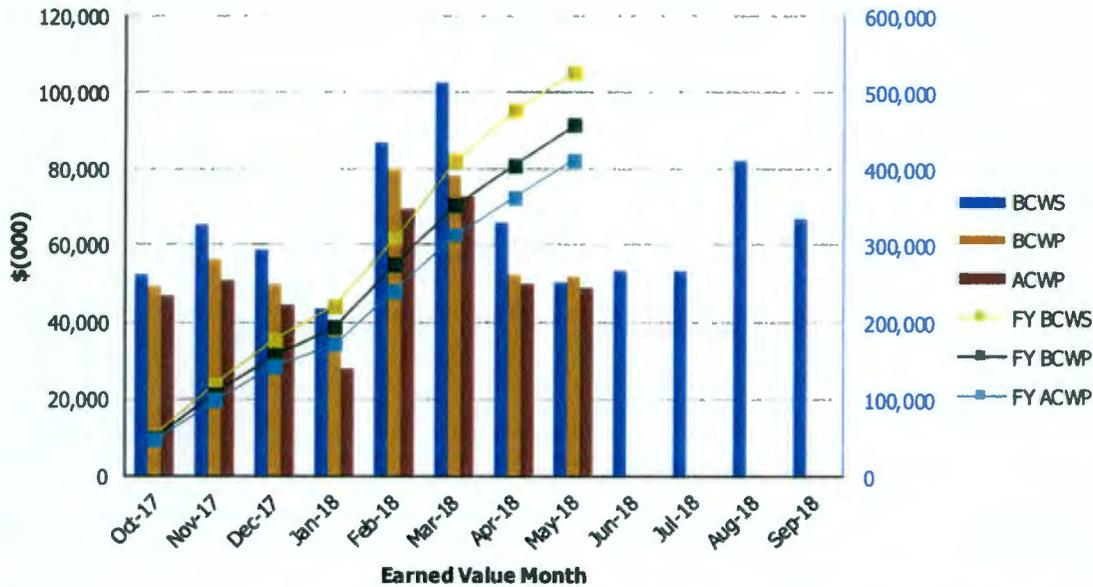
**WTP Earned Value Management System Quarterly Analysis**  
**EXC-01a: Fiscal Year Cost and Schedule Report**

Data Set: FY 2018 Earned Value Data

Data as of: May 2018

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

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2017	\$52,662	\$49,804	\$46,894	0.95	1.06	\$52,662	\$49,804	\$46,894	0.95	1.06
Nov 2017	\$65,935	\$56,513	\$51,026	0.86	1.11	\$118,597	\$106,317	\$97,920	0.90	1.09
Dec 2017	\$58,797	\$50,134	\$44,924	0.85	1.12	\$177,394	\$156,452	\$142,844	0.88	1.10
Jan 2018	\$43,622	\$36,665	\$28,076	0.84	1.31	\$221,016	\$193,117	\$170,920	0.87	1.13
Feb 2018	\$86,995	\$80,565	\$69,775	0.93	1.15	\$308,011	\$273,683	\$240,695	0.89	1.14
Mar 2018	\$102,749	\$78,481	\$72,880	0.76	1.08	\$410,760	\$352,163	\$313,575	0.86	1.12
Apr 2018	\$65,995	\$52,537	\$50,050	0.80	1.05	\$476,755	\$404,701	\$363,625	0.85	1.11
May 2018	\$50,537	\$52,199	\$49,027	1.03	1.06	\$527,292	\$456,900	\$412,653	0.87	1.11
Jun 2018	\$53,606									
Jul 2018	\$53,576									
Aug 2018	\$82,110									
Sep 2018	\$66,972									
<b>PTD</b>	<b>\$11,038,886</b>	<b>\$10,914,796</b>	<b>\$10,796,067</b>	<b>0.99</b>	<b>1.01</b>					

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.

<b>Performance Tracking</b>	<b>SV (\$x1,000)</b>	<b>CV (\$x1,000)</b>
Cumulative (through May 2018)	(\$124,090)	\$118,730
Fiscal Year 2018 to-date	(\$70,392)	\$44,247
May 2018	\$1,662	\$3,172
April 2018	(\$13,458)	\$2,487
March 2018	(\$24,268)	\$5,601

SV = schedule variance.

CV = cost variance.

### **Earned Value Management System Analysis**

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

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

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

**Schedule Variance Summary:**

For the May 2018 EVMS reporting period, a net **favorable** SV of approximately \$1.7 million was reported, primarily due to the following:

- LBL Plant Management (i.e., commissioning) continues to show an unfavorable SV due to a planned delay of staff increases. The LBL staffing needs to support commissioning are being evaluated. The future staffing level of commissioning personnel will be based on the outcomes of the evaluation. This control account will continue to show an unfavorable SV until staffing levels in the budgeting tools are realigned with the commissioning execution plan via the baseline change control process. This was partially addressed with implementation of Baseline Change Proposal (BCP) TN-18-0075, *DFLAW – Definitization of Optimization (Target) Plan Scope Impacts*, which added scope into the Performance Measurement Baseline to align with current work activities being executed in the forecast schedule.
- LAW Facility Plant Equipment reported an unfavorable SV primarily due to the active safety process gas analyzers procurement having been completed in a prior period.
- LAW Facility Construction Craft reported an unfavorable SV due to underperformance associated with melter, instrumentation, and design evolution scope. This was offset by a favorable SV in LAW Facility construction subcontracts, including roofing for the truck bay canopy, procurement of export bay materials, installation of impart bay coiling doors, and installation of several final penetration seals.
- LAW Facility Engineering reported a favorable SV due to implementation of BCP TN-18-0075.
- DFLAW Construction Craft reported a favorable SV due to implementation of BCP TN-18-0075, which transferred historical DFLAW site workscope to BOF site work.
- DFLAW Plant Equipment and Material reported a favorable SV tied to the Effluent Management Facility (EMF) evaporator, reboiler, and primary condenser fabrication completing delivery in May; early partial receipt of EMF centrifugal pumps and completion of vendor weld repairs in the EMF process vessels. The favorable SV was partially offset by continued slippage in delivery of coaxial pipe.
- DFLAW Engineering reported an unfavorable SV tied to implementation of BCP TN-18-0075.
- BOF Startup reported a favorable non-labor SV due to implementation of BCP TN-18-0040, *BOF - Reduction in Startup Diesel Fuel Oil Budget*, which returned some prior unspent scope to Management Reserve. This was offset by BOF Startup labor due to delays in completing component testing in the glass former storage facility, steam plant facility, and system testing in the cooling tower.

For the April 2018 EVMS reporting period, a net **unfavorable** SV of approximately (\$13.5 million) was reported, primarily due to the following:

- DFLAW Plant Equipment and Material reported an unfavorable SV due to delays in fabrication for the EMF evaporator, reboiler, and to delays in orders for primary condenser plant equipment. This was off-set by delivery of steel and pipe commodities.
- DFLAW Construction Craft reported an unfavorable SV due to a planned delay in installation of the waste transfer line piping. Installation of the piping at this time would interfere with critical path construction activities at the EMF processing building. Installation of the piping will occur following the completion of the bulk of EMF construction.
- LAW Facility Plant Equipment reported an unfavorable SV primarily due to a delay in delivery of the passive safety gas analyzers, which failed the initial factory acceptance testing.
- LAW Facility Construction Craft reported an unfavorable SV due to delays in completion of record closure documentation for already completed field work (resources were used for higher priority work, but performance recovery is expected by mid-May).
- BOF Startup reported an unfavorable SV due to significantly less diesel fuel oil needed for the steam plant and standby diesel generator facilities during DFLAW startup operations. Diesel fuel cost in the current budget represents full WTP startup fuel requirements. A BCP is being processed to give back the extra budget. Additional BOF unfavorable SV is tied to discrete labor associated with component testing, which is being delayed due to late turnovers from construction and construction deferral of street lighting and miscellaneous concrete work.
- LBL Plant Management (i.e., commissioning) continues to show an unfavorable SV due to a planned delay in staff increases. The LBL staffing needs to support commissioning are being evaluated. The future staffing level of commissioning personnel will be based on the outcomes of the evaluation. This control account will continue to show an unfavorable SV until staffing levels in the budgeting tools are realigned with the commissioning execution plan via the baseline change control process.
- HLW Facility Engineering reported an unfavorable SV due to a slowdown in rebaseline preparation and in support to procurement because planned resources are supporting higher WTP priorities.

For the March 2018 EVMS reporting period, a net **unfavorable** SV of approximately (\$24.3 million) was reported, primarily due to the following:

- DFLAW Plant Equipment and Material reported an unfavorable SV due to late delivery or delays in fabrication for the following plant equipment:
  - EMF process vessels delayed due to vendor welds that had to be repaired after testing.
  - Additional scope for insulation of EMF vessels.

- EMF centrifugal pumps delayed as a result of supplier qualification and engineering issues, which are being addressed with forecast recovery in May.
- Late delivery of steel and pipe commodities.

BNI continues a focused effort to expedite deliveries, which includes multiple vendor visits and placing BNI personnel in vendor shops to improve communications and minimize delays.

- DFLAW Construction Craft reported an unfavorable SV due to a planned delay in installation of waste transfer line piping. Installation of the piping at this time would interfere with critical path construction activities at the EMF processing building. Installation of the piping will occur following the completion of the bulk of EMF construction.
- The LAW Facility Plant Equipment reported an unfavorable SV primarily due to delays in working through compliance issues for the melter power supply and vendor workload.
- BOF Startup reported an unfavorable SV due to significantly less diesel fuel oil needed for the steam plant and standby diesel generator facilities during DFLAW startup operations. Diesel fuel cost in the current budget represents full WTP startup fuel requirements. A BCP is being processed to give back the extra budget. Additional BOF unfavorable SV is tied to discrete labor associated with component testing, which is being delayed due to late turnovers from construction.
- LBL Plant Management (i.e., commissioning) continues to show an unfavorable SV due to a planned delay of staff increases. The LBL staffing needs to support commissioning are being evaluated. The future staffing level of commissioning personnel will be based on the outcomes of the evaluation. This control account will continue to show an unfavorable SV until staffing levels in the budgeting tools are realigned with the commissioning execution plan via the baseline change control process.

#### **Cost Variance Summary:**

For the May 2018 EVMS reporting period, a net **favorable** CV of approximately \$3.2 million was reported, primarily due to the following:

- LBL Plant Management (i.e., commissioning) reported a favorable CV because current spending priorities are different than the existing plan. Revised commissioning spend plans are currently being developed with implementation of BCP TN-18-0075.
- LAB Plant Management reported a favorable CV due to a delay in receipt of actual costs related to completing the plant service air system refurbishment in May and a delayed ramp up in training.
- DFLAW Construction Craft reported a favorable CV due to completion of excavations, EMF concrete walls, and basemats.
- HLW Facility Engineering, Waste Treatment Completion Company, and Facility Services reported a favorable CV due to level-of-effort resources supporting higher WTP priorities.

For the April 2018 EVMS reporting period, a net **favorable** CV of approximately \$2.5 million was reported, primarily due to the following:

- LBL Plant Management (i.e., commissioning) reported a favorable CV because current spending priorities are different than the existing plan. Revised plans are currently being developed for implementation so commissioning activities are aligned with the available spend plan.
- LAW Facility Engineering reported an unfavorable CV due to labor expended in support of approved work not yet in the baseline, and Nuclear Safety Engineering reported an unfavorable CV due to overtime in support of the completion of 24590-LAW-DSA-NS-18-0001, *Documented Safety Analysis for the Low-Activity Waste Facility* (DSA).
- LAW Facility Construction Craft reported an unfavorable CV primarily due to overtime efforts needed to support punch-list items supporting physical plant completion and associated record closure scope.
- LAW Facility Construction Craft Distributable reported an unfavorable CV due to the removal/relocation of temporary construction commodities and ongoing scaffold builds/removals to support final facility punch-list scope.
- BOF Startup reported an unfavorable CV driven by component/system testing failures and post-turnover design modifications. During the startup testing phase, component- and procedure-driven test delays are a normal occurrence. However, this typically expected challenge is increased with BOF due to the age of the equipment going through the first-time startup process.
- HLW Facility Engineering, Waste Treatment Completion Company, and Facility Services reported a favorable CV due to level-of-effort resources supporting higher WTP priorities.

For the March 2018 EVMS reporting period, a net **favorable** CV of approximately \$5.6 million was reported, primarily due to the following:

- LBL Commissioning reported a significant favorable CV because current spending priorities are different than the existing plan. Revised plans are currently being developed for implementation so commissioning activities are aligned with the available spend plan.
- General/Other Services reported a favorable CV because of labor attrition and reduced labor costs due to positions not being filled as anticipated. Also contributing to a current period favorable CV is a delay in the delivery of IT (Information Technology) equipment, which will arrive in future reporting periods.
- The LAW Facility Engineering reported an unfavorable CV due to labor expended in support of approved work not yet in the baseline, in addition to higher than anticipated support needed to accelerate closure of construction activities and system turnover reports. Nuclear Safety Engineering reported an unfavorable CV due to overtime in support of the closure of 24590-LAW-DSA-NS-18-0001.
- BOF Engineering Site Support reported an unfavorable CV due to greater than anticipated resource needs to support startup, commissioning, and construction activities.

- The LAW Facility Construction Craft reported an unfavorable CV primarily due to overtime efforts needed to support punch-list items supporting physical plant completion and associated record closure scope.
- The LAW Facility Construction Craft Distributable reported an unfavorable CV due to the removal/relocation of temporary construction commodities and ongoing scaffold builds/removals to support final facility punch-list scope. Also contributing to the unfavorable CV was higher than anticipated employee training, material movement, and tool purchases.
- BOF Startup reported an unfavorable CV due to component testing, system testing, system flushing, and post turnover modifications. This is the result of a greater than expected number of initial component/system test failures and design modifications. During the startup testing phase, component and procedure-driven test delays are a normal occurrence. However, this typically-expected challenge is increased with BOF due to the age of the equipment going through the first-time startup process.

### **WTP Project Cumulative through May 2018**

The WTP Project is behind the planned work scheduled by approximately (\$124.1 million) through May 2018, but it has cost approximately \$118.7 million less to perform the work than originally estimated. The cumulative-to-date SVs and CVs are reported against the LBL/DFLAW Performance Measurement Baseline.

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

### **Project Performance Review**

All of the Project Performance Review actions discussed in previous reports have been completed and implemented, or are in the process of implementation. ORP reached its decision on the remaining actions in May 2018, and they are listed below:

- BNI and ORP completed its evaluation of a strategy to conduct the operational readiness review prior to the start of cold commissioning as a potential schedule efficiency. Discussions to finalize the operational readiness review strategy resulted in an ORP decision to maintain the current contract approach for conducting the operational readiness review after cold commissioning and prior to hot commissioning. BNI also completed a feasibility study for conducting cold commissioning with a single melter versus the current two-melter cold commissioning approach. ORP conducted a multi-discipline review of BNI's feasibility study and decided to maintain the current two-melter cold commissioning approach, consistent with the WTP Project key performance parameters and definition of Critical Decision 4a in ORP's MGT-PM-PL-06, *Project Execution Plan for the Waste Treatment and Immobilization Plant Project*.
- BNI submitted a formal request to ORP for its approval of a modified approach to WTP baseline performance measurement monitoring and control. ORP had previously requested BNI streamline its baseline change management processes to achieve baseline execution objectives. In response to BNI's request, ORP noted its expectation that BNI continue to follow the terms and conditions of the contract and BNI can implement modified actions in compliance with the contract.

## **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,”<sup>5</sup> which includes “Ensuring Control of the Pulse Jet Mixers” (i.e., T4 in relation to 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).<sup>6</sup>

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 can be incorporated into the PT Facility, while meeting the PT Facility throughput contract requirements. Ecology was briefed on the design concept in February 2018.

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

### **Accomplishments during the Reporting Period:**

- At the request of ORP, the USACE continued its parametric analysis of certain options and funding scenarios in order to evaluate the potential achievement of the PT Facility construction substantially complete milestone (13 years from now), and the HLW Facility construction substantially complete milestone (12 years from now).
- ORP and BNI staff participated in a PT Facility workshop on April 11, 2018, to develop options related to the PT Facility. The workshop focused on documenting scope changes resulting from technical issue resolution and design and nuclear safety updates, funding

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

<sup>6</sup> At the outset of 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.

required to implement continued preventive maintenance activities, and retaining core competencies.

- BNI continued to focus on ongoing asset maintenance at the PT Facility to protect equipment and structures and ensure design documents are maintained. Work continued on technical issue resolution related to the remaining technical issues.
- ORP continued to work with BNI on completing documentation for the remaining open technical issues described as T4, T5, and T7 (i.e., T7 in relation to seismic ground motion criteria changes around 2005), and T8.

**Accomplishments Expected in the Next Reporting Period:**

- DOE received the final report of the USACE parametric analysis of certain options and funding scenarios used to evaluate the likelihood of achieving PT- and HLW-related milestones. A copy of the final report was provided to Ecology on August 13, 2018. DOE intends to evaluate the report and other information regarding the path forward, including funding, for the PT and HLW facilities.
- ORP will continue discussions with DOE's Office of Environmental Management about the direction to provide BNI regarding engineering, procurement, and construction activities at the PT Facility.
- BNI will continue to focus on asset maintenance at the PT Facility to protect equipment and structures and to ensure design documents are maintained. Work will continue on technical issue resolution related to the remaining technical issues.
- BNI is expected to issue an update to the localized corrosion test basis document supporting closure of technical issue T5 and closure of the T5 corrective action plan during the fourth quarter of FY 2018. Comment resolution on the T5 corrosion test report has taken longer than expected.
- BNI is expected to issue the methodology for the vessel structural integrity verification supporting final resolution of technical issue T7 during the fourth quarter of FY 2018. Comment resolution has taken longer than expected.
- ORP anticipates resolution of the remaining technical issues (noted above) with notification to the Defense Nuclear Facilities Safety Board in August or September 2018. The resolution of the technical issues is likely to require significant design changes to the PT Facility.

**Issues Encountered during the Reporting Period:**

- The PT Facility planned work was reprioritized because of the need for additional resources to support DFLAW/LBL activities. Reduced resources resulted in a slower pace on technical issue resolution related to erosion/corrosion in piping and vessels and progression of the conceptual design incorporating the SHSV test design prototype.
  - *Impact:* Delay in completing PT Facility technical issue resolution and redesign activities.

- *Actions initiated or taken to address potential project schedule slippage:* ORP is analyzing the potential impacts of continued funding limitations on the WTP Project by considering the USACE parametric analysis, the 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. Reduced resources will continue to result 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:* 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 Defense Nuclear Facilities Safety Board, is expected in August or September 2018.

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 Pulse-Jet Mixers (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.
- ***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.
  - BNI is expected to issue an update to the localized corrosion test basis document supporting closure of technical issue T5 and closure of the T5 corrective action plan during the fourth quarter of FY 2018. Comment resolution on the T5 corrosion test report has taken longer than expected.
- ***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 requires completing engineering/nuclear safety assessments to ensure the PT Facility ventilation system meets performance requirements, which will be initiated once the PJM testing and its ventilation demands are finalized.
      - Testing of HEPA filters to ensure filters can withstand environmental conditions and loading during normal and off-normal operating conditions is complete. HEPA filter design and qualification testing have been performed and reported under the HLW Facility project. 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 abnormal conditions. Based on the successful filter design bounding all WTP normal and abnormal conditions, it was concluded that alternative filter designs and testing were not required. The final test report was issued in September 2017.

## **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 was performed in accordance with the FY 2017 through FY 2021 Interim Work Plan, which resulted in work primarily associated with asset maintenance and key ongoing procurement activities. With the receipt of increased funding for FY 2018 (noted below), additional engineering workscope is being planned in anticipation of available engineering resources previously assigned to DFLAW/LBL activities.

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

### **Accomplishments during the Reporting Period:**

- In accordance with the additional funding received for the HLW Facility in the *Consolidated Appropriations Act, 2018*, ORP and BNI will continue work on determining what additional activities could be undertaken for the HLW Facility in FY 2018. They plan to update the system design descriptions and incorporate design changes resulting from the updated HLW Facility Preliminary Documented Safety Analysis approved in September 2017. In addition, preparations for a rebaselining effort and the release of critical and long-lead procurements are underway. ORP continued discussions with DOE's Office of Environmental Management about the direction to provide BNI regarding this facility.
- At the request of ORP, the USACE continued its parametric analysis of certain options and funding scenarios in order to evaluate the potential achievement of the PT Facility construction substantially complete milestone (13 years from now), and the HLW Facility construction substantially complete milestone (12 years from now).
- BNI continued to focus on ongoing asset maintenance at the HLW Facility to protect equipment and structures and ensure design documents are maintained.
- BNI continued fabrication of RLD-7 and RLD-8 vessels. These vessels are to be installed in the wet process cell prior to concrete slab placement. This activity supports roof installation and building enclosure.

**Accomplishments Expected in the Next Reporting Period:**

- DOE received the final report of the USACE parametric analysis of certain options and funding scenarios used to evaluate the likelihood of achieving PT- and HLW-related milestones. A copy of the final report was provided to Ecology on August 13, 2018. DOE intends to evaluate the report and other information regarding the path forward, including funding, for the PT and HLW facilities.
- In accordance with the additional funding received for the HLW Facility in the *Consolidated Appropriations Act, 2018*, ORP and BNI will continue work on determining what additional activities could be undertaken for the HLW Facility in FY 2018. ORP and BNI will continue to develop a plan for additional activities for the HLW Facility in FY 2018 and FY 2019. Engineering resources from DFLAW/LBL modifications will be transitioned to support production engineering efforts for the HLW Facility as they become available.
- BNI will continue to focus on ongoing asset maintenance at the HLW Facility to protect equipment and structures and ensure design documents are maintained.
- BNI will continue to update its long-range planning documents to support a future rebaseline effort as resources become available.

**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 is not expected in the near term.
  - *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, ORP and BNI will continue to develop a plan for additional activities for the HLW Facility in FY 2018 and 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 will continue to be reprioritized due to increased focus on higher priority DFLAW/LBL activities. Additional funding for the HLW Facility provided by the *Consolidated Appropriations Act, 2018*, will allow ORP to initiate some engineering and nuclear safety activities in FY 2018 and FY 2019.
  - *Impact:* The HLW Facility redesign is likely to progress to the extent that additional funding allows.

- *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 BNI parametric analysis, the HLW workshop discussions, and other inputs, as appropriate.

## Low-Activity Waste Facility<sup>7</sup>

**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 May 2018, the LAW Facility was 70 percent complete overall, engineering design was 90 percent complete, procurement was 83 percent complete, construction was 92 percent complete, and startup and commissioning was 20 percent complete.

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

### Accomplishments during the Reporting Period:

- ORP approved the LAW Facility DSA with the *Safety Evaluation Report of Documented Safety Analysis and Technical Safety Requirements for the Low-Activity Waste Facility: 24590-LAW-DSA-NS-18-0001*, Documented Safety Analysis for the Low-Activity Waste Facility, Rev. 0, and *24590-LAW-TSR-NS-18-0001*, Low-Activity Waste Facility Technical Safety Requirements, Rev. 0, via ORP letter 18-NSD-0009, "Contract No. DE-AC27-01RV14136 – Approval of 24590-LAW-DSA-NS-18-0001, "Documented Safety Analysis for the Low-Activity Waste Facility," and 24590-LAW-TSR-NS-18-0001, "Low-Activity Waste Facility Technical Safety Requirements," on May 17, 2018.
- BNI issued letter CCN: 295774, "Contract No. DE-AC27-01RV14136 – Declaration of Completion of Activity Milestone A-5, LBL Physical Plant Complete," dated May 25, 2018, to ORP for review. The letter, along with BNI's supporting documentation, was submitted to ORP ahead of the interim contract milestone date of June 28, 2018.
- ORP performed walkdowns and began reviewing the BNI supporting documentation for validation of BNI's completion of the interim contract Milestone A-5, "Final LBL Physical Plant Complete."
- BNI construction turned the following LAW Facility systems over to the Startup organization:
  - Chilled water system 2

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<sup>7</sup> 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).

- Low-voltage electrical (480/208/120 V) system 2
- High pressure steam system 2
- Demineralized water system 1
- Instrument air system 3
- Domestic (potable) water system.
- BNI construction completed the follow-on, 3-week walkdowns before turning the following systems over to the Startup organization:
  - Process control system 2
  - Fire detection and alarm system 1
  - Fire protection water system 1
  - Heat trace electrical system
  - LAW Facility container finishing handling system 1 and 2.
- BNI construction completed Underwriters Laboratories certification for the electrical thermal catalytic oxidizer scope at El +48. (Note: El +48 equals great than the 48-foot elevation.)
- BNI construction completed installation of permanent door slabs (all elevations).
- BNI issued the bid evaluation for the flow instruments procurement.
- BNI completed installation of the carbon bed absorber.
- BNI completed the balance of remaining cable and terminations.

**Accomplishments Expected in the Next Reporting Period:**

- ORP will complete review of the BNI supporting documentation (submitted by BNI on May 25, 2018) for validation of BNI's completion of the interim contract Milestone A-5, "Final LBL Physical Plant Complete."
- BNI is expected to update its commercial grade dedication (CGD) plan to perform improved CGD evaluation of equipment. This is the result of changes to the safety function requirements incorporated in the approved LAW Facility DSA (noted above).
- BNI construction is expected to turn the following systems over to the Startup organization:
  - Facility network infrastructure system
  - Uninterruptable power electrical system 1
  - Heat trace electrical system
  - Process control system 4
  - Fire detection and alarm system 1
  - Fire protection water system 1
  - Chilled water system 1
  - Process control system 2.
- BNI is expected to award the procurement for the communications electrical system.
- BNI is expected to award the procurement for the flow instruments purchase.

**Issues Encountered during the Reporting Period:**

- None.

**Issues Expected in the Next Reporting Period:**

- The concern with BNI's CGD Program noted in previous reports remains an issue for the WTP Project.
  - *Impact:* This puts at risk some of the equipment purchased, which performs a specific safety function in the LAW Facility. The consequences of identified CGD deficiencies are:
    - Material requisitions with vendors are in the process of being revised or reestablished to incorporate the updated safety function requirements in the LAW Facility DSA.
    - CGD plans produced by both vendors and WTP are in the process of being updated; additional documentation and testing may be required to meet the updated safety function requirements in the LAW Facility DSA.
  - *Actions expected to be initiated or taken to address potential project schedule slippage:*
    - Updated CGD plans are being developed to streamline the CGD verification of equipment to ensure it meets the updated safety function requirements in the LAW Facility DSA.
- Ongoing concerns remain related to the validity of BNI's latest DFLAW/LBL optimized schedule. ORP is working with BNI to resolve schedule concerns.

## **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 May 2018, BOF was 70 percent complete overall, engineering design was 91 percent complete, procurement was 85 percent complete, construction was 81 percent complete, and startup and commissioning was 41 percent complete. Design of EMF was 87 percent complete.

BNI Engineering efforts are focused on completion of the EMF design, supporting the EMF dangerous waste permit applications, supporting EMF procurement activities, and providing field support for BOF startup activities. Construction was focused on formwork and rebar installation to support placement of the EMF second-lift walls. These efforts will now shift to topping slab completion, protective coating application, and utility rack placement. Startup testing continues for BOF systems. Functional testing is complete for the water treatment facility. The cooling tower facility is completing testing of the medium-voltage system and large cooling water pumps. The chiller compressor plant is preparing for testing of the chill water pumps and rotary screw air compressors.

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

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

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

**Accomplishments during the Reporting Period:**

- ORP received approval of the EMF equipment package No. 2 permit modification with a permit effective date of June 17, 2018.
- Public comment period for the EMF equipment package No. 3 permit modification began on June 4, 2018. The public comment period is 45 days.
- BNI received the structural steel, completed assembly of the EMF evaporator tower, and installed EMF evaporator in the tower next to the main EMF footprint.
- BNI completed placement of the EMF low-point drain second-lift walls.
- BNI completed placement of the EMF processing building second-lift walls.
- BNI completed installation of the low-point drain vessel ring beam.
- BNI completed functional testing for the water treatment building process service water, potable water, and demineralized water systems.
- BNI completed installation of the EMF nitrate and caustic tanks.
- BNI completed turnover of the steam plant condensate system for startup testing.
- BNI received the EMF low-point drain vessel, which is currently staged at the WTP construction site.
- BNI completed installation of grillage to support stainless steel liner plate installation in the EMF low-point drain vessel area and the EMF evaporator feed vessel area.
- BNI continued protective coatings application throughout the EMF processing building.
- BNI energized the medium-voltage cooling tower system and began testing of the large cooling tower pump motors.

**Accomplishments Expected in the Next Reporting Period:**

- BNI construction is expected to turn over the glass former (GFR-B-01) system for startup testing.
- BNI construction is expected to turn over the ammonia reagent (AMR-B-01) system for startup testing.
- BNI is expected to receive the standby diesel generator motor and generator set following refurbishment.
- BNI is expected to transfer operational custody of the WTP main switchgear building to the Plant Management organization.
- BNI is expected to transfer operational custody of the BOF switchgear building to the Plant Management organization.
- BNI is expected to transfer operational custody of the water treatment building to the Plant Management organization.

**Issues Encountered during the Reporting Period:**

- Continued delays during BOF system completion and turnover to startup, as described below, are impacting the project schedule.
  - *Impact:* Delayed BOF system completion and turnover to startup are extending the construction schedule and narrowing the available periods for startup testing. However, the effect of the delays in the project schedule are not anticipated to affect DOE's ability to achieve Amended Consent Decree milestones for the LAW Facility at this time.
  - *Actions initiated or taken to address potential project schedule slippage:*
    - BNI is conducting weekly management meetings to evaluate system completion against the schedule and emphasize the need for system punchlist completion.
    - Production meetings are focused on completion of outstanding work items.
    - Temporary systems are installed as necessary to minimize the downstream impacts of equipment failures.

**Issues Expected in the Next Reporting Period:**

- Continued delays during BOF system completion and turnover to startup, 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 May 2018, the LAB was 72 percent complete overall, engineering design was 90 percent complete, procurement was 90 percent complete, construction was 95 percent complete, and startup and commissioning was 31 percent complete.

During this reporting period activities in the LAB were focused on system turnovers to begin startup testing of LAB systems. BNI is focused on completing the turnover of all LAB systems from construction to startup in 2018. To date, BNI has completed the turnover of 22 LAB systems for startup testing. BNI has relocated personnel and equipment into an offsite laboratory facility to perform analytical methods development. This allows methods development to occur in parallel with system startup testing. The installation of analytical equipment at the off-site facility has been completed and procedure development is in progress. The test engineers workstation continues to support startup testing efforts for BOF, but some of these support services will begin transitioning to the LAW annex as the LAW control room comes online.

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

### **Accomplishments during the Reporting Period:**

- BNI completed installation of the analytical equipment in the offsite laboratory space to support LAB methods development in parallel with LAB startup and commissioning activities.
- BNI completed turnover of the C1 ventilation (C1V) system for startup testing.
- BNI completed turnover of the C5V system for startup testing.
- BNI completed turnover of the chilled water system for startup testing.
- BNI completed turnover of the uninterruptible power electrical system for startup testing.
- BNI completed turnover of the lighting electrical system for startup testing.
- BNI completed turnover of the potable water system for startup testing.
- BNI completed turnover of the radioactive liquid waste disposal system for startup testing.
- BNI completed energization of the low-voltage system motor control centers.
- BNI continued review of the analytical methods procedures.
- BNI completed functional testing of the low-voltage electrical switchgear.
- BNI completed blowdowns of the plant service air system piping.

**Accomplishments Expected in the Next Reporting Period:**

- BNI construction is expected to turn over the C3V system for startup testing.
- BNI construction is expected to turn over the C2V system for startup testing.
- BNI is expected to continue turnover of LAB systems and startup testing of systems as they become available.

**Issues Encountered during the Reporting Period:**

- None.

**Issues Expected in the Next Reporting Period:**

- None.

## Written Directives for WTP

Written directives given by DOE to the WTP contractor from April 1, 2018, through June 30, 2018, for work required by the Consent Decrees.

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

- 18-CPM-0056, “Contract No. DE-AC27-01RV14136 – Modification No. 421, Incremental Funding,” dated April 12, 2018
- 18-WTP-0032, “Contract No. DE-AC27-01RV14136 – Direct-Feed Low-Activity Waste Project Schedule Impacts due to Effluent Management Facility Permitting Delays,” dated April 16, 2018
- 18-CPM-0066, “Contract No. DE-AC27-01RV14136 – Contract Modification No. 422, Incremental Funding and Contract Admin Changes,” dated May 7, 2018
- 18-CPM-0069, “Contract No. DE-AC27-01RV14136 – Request for Signature – Contract Modification No. 423,” dated May 14, 2018
- 18-WTP-0046, “Contract No. DE-AC27-01RV14136 – The U.S. Department of Energy, Office of River Protection Conditional Concurrence on the Engineering Re-Draft Study for the Low-Activity Waste Carbon Dioxide Gas System, External,” dated May 15, 2018
- 18-NSD-0009, “Contract No. DE-AC27-01RV14136 – Approval of 24590-LAW-DSA-NS-18-0001, “Documented Safety Analysis for the Low-Activity Waste Facility,” and 24590-LAW-TSR-NS-18-0001, “Low-Activity Waste Facility Technical Safety Requirements,”” dated May 17, 2018
- 18-NSD-0010, “Contract No. DE-AC27-01RV14136 – Approval of Regulatory Deliverable 9.1 – Submittal of the Low-Activity Waste Facility Documented Safety Analysis and Technical Safety Requirements Implementation Plan,” dated May 17, 2018
- 18-WTP-0057, “Contract No. DE-AC27-01RV14136 – Response to Contract Deliverable 1.13 – LBL Physical Plant Complete Inclusion/Exclusion List for Determination of Milestone – Second Quarter Fiscal Year 2018,” dated May 18, 2018
- 18-WTP-0045, “Contract No. DE-AC27-01RV14136 – Concurrence of Long-Term Preventive Maintenance Program – 24590-WTP-PD-RAPM-PM-001, Rev 2,” dated May 22, 2018
- 18-WTP-0063, “Contract No. DE-AC27-01RV14136 – Completion of Preliminary Evaluation of Single Melter Commissioning Approach for the Low-Activity Waste Facility,” dated June 4, 2018
- 18-WTP-0067, “Contract No. DE-AC27-01RV14136 – Approval of Exclusions to LBL Physical Plant Complete Milestone A-5, Related to Preliminary Documented Safety Analysis and Documented Safety Analysis Evolution,” dated June 4, 2018

- 18-WTP-0058, “Contract No. DE-AC27-01RV14136 – U.S. Department of Energy, Office of River Protection Response to Bechtel National, Inc. Request to Update the Performance Measurement Baseline,” dated June 6, 2018
- 18-CPM-0089, “Contract No. DE-AC27-01RV14136 – Modification No. 424, Incremental Funding,” dated June 6, 2018
- 18-WTP-0074, “Contract No. DE-AC27-01RV14136 – Waste Treatment and Immobilization Plant Balance of Facilities Modifications to Support Direct Feed Low-Activity Waste Operations,” dated June 25, 2018
- 18-TRS-0007, “Contract No. DE-AC27-01RV14136 – Transmittal of U.S. Government Accountability Office Report, GAO-18-241, for Bechtel National, Inc. Action,” dated June 25, 2018
- 18-CPM-0100, “Contract No. DE-AC27-01RV14136 – Transmittal of Contract Modification No. 425,” dated June 26, 2018.

Enclosure

(29 Pages Excluding Cover Sheet)

Written Directives from April 1, 2018, through June 30, 2018



**OFFICE OF RIVER PROTECTION**

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

**APR 23 2018**

18-TF-0027

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

Ms. Downing:

**CONTRACT NUMBER DE-AC27-08RV14800 – PATH FORWARD FOR POST FISCAL YEAR 2018**

The U.S. Department of Energy, Office of River Protection hereby authorizes Washington River Protection Solutions LLC to move forward with the necessary actions to ensure a smooth transition and uninterrupted system support into Fiscal Year (FY) 2019, should direction be provided to continue work scope execution in FY2019. The necessary steps to open the reporting window for October 1, 2018 would include, but are not limited to:

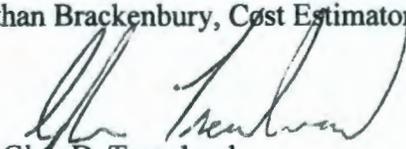
1. Implement FY2019 plan into tools in preparation for execution.
2. Begin establishing new out-year Control Account Charge Numbers.
3. Begin activities related to FY2019 subcontracting and long lead procurements.

Reporting of the FY2019 period will not begin until October 1, 2018.

Please provide Betsy Ballard with regular updates on the necessary activities planned and the schedule for implementation as you move forward with your planning efforts.

This letter is not considered to constitute a change to the contract. In the event the Contractor disagrees with this interpretation, it shall provide notice to the Contracting Officer as required under Contract Clause entitled 52.243-7, "Notification of Changes."

If you have any questions, please contact me Betsy Ballard, Project Controls Officer, (509) 376-1055; or your staff may contact Ethan Brackenbury, Cost Estimator, (509) 376-2792.

  
Glyn D. Trenchard  
Contracting Officer's Representative

TF:EBB

cc: C.A. Burke, WRPS  
J.R. Eschenberg, WRPS  
C.A. Simpson, WRPS  
G.B. Snow, WRPS  
WRPS Correspondence



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

**JUN 06 2018**

18-TF-0032

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

Ms. Downing:

CONTRACT NO. DE-AC27-08RV14800 – U.S. DEPARTMENT OF ENERGY, OFFICE OF RIVER PROTECTION APPROVAL AND ADDITIONAL DIRECTION FOR THE UPDATED LIFECYCLE BASELINE UPDATE

- References:
1. WRPS letter from K.A. Downing to W.E. Hader, ORP, "Washington River Protection Solutions LLC Submittal of the Lifecycle Baseline Update Path Forward Request for Approval," WRPS-1800829, dated March 6, 2018.
  2. ORP letter from W.E. Hader to K.A. Downing, WRPS, "Request for Lifecycle Baseline Update Not-To-Exceed Value and Authorization," 17-CPM-0103/1701468, dated July 31, 2017.
  3. WRPS letter from K.A. Downing to W.E. Hader, ORP, "Washington River Protection Solutions LLC Response to Direction to Update Tank Farm Mission Life Cycle Baseline," WRPS-1702782, dated June 27, 2017.
  4. ORP letter from W.E. Hader to K.A. Downing, WRPS, "Direction to Update Tank Farm Mission Life Cycle Baseline," 17-WSC-0019/1701410, dated May 30, 2017.

The purpose of this letter is to approve the updated path forward for the Fiscal Year (FY) 2019 and FY2020 Lifecycle Baseline update and provide direction for a revised submittal date for the FY2021 and beyond Lifecycle. The U.S. Department of Energy, Office of River Protection (ORP) approves the submittal of the FY2019 and FY2020 update by May 31, 2018 and the coinciding baseline change request to be implemented by July 31, 2018. The remainder of the Lifecycle Baseline FY2021 and beyond will be submitted by no later than November 15, 2018.

As stated in Reference 4, ORP requested that Washington River Protection Solutions LLC (WRPS) update the Tank Farm Lifecycle Baseline. In Reference 3, WRPS identified that ORP had selected Option 2, which would provide a focused scope, schedule and cost update with a delivery time of 9 months, commencing on September 1, 2017. In Reference 2, ORP again directed WRPS to initiate planning of the Tank Farm Lifecycle baseline, without a not-to-exceed as the scope to update the Lifecycle Baseline is within the WRPS contract.

JUN 06 2018

Ms. Katie A. Downing  
18-TF-0032

-2-

ORP recognizes the challenges that WRPS has faced with this update process, but with the contract and Baseline Change Request changes being frozen at the end of the May 2018 accounting month, the expectation is that WRPS will have enough time to complete the submittal by November 15, 2018.

Should you have any questions or need additional clarification, please contact the Tank Farms Project Controls Officer, Betsy Ballard, at (509) 376-1055.



Wade E. Hader  
Contracting Officer

TF:BMB

cc: P.K. Brockman, WRPS  
J.F. Corrado, WRPS  
J.R. Eschenberg, WRPS  
R.E. Gregory, WRPS  
J.M. Legarreta, WRPS  
M.A. Lindholm, WRPS  
J.A. Reno, WRPS  
R.J. Sams, WRPS  
J.M. Shelt, WRPS  
C.A. Simpson, WRPS  
H.M. Taylor, WRPS  
B.R. Thomas, WRPS  
J.S. Van Meighem, WRPS  
WRPS Correspondance  
Administrative Record



**OFFICE OF RIVER PROTECTION**

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

APR 12 2018

18-CPM-0056

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

Mr. Binns:

CONTRACT NO. DE-AC27-01RV14136 –MODIFICATION NO. 421, INCREMENTAL FUNDING

The purpose of this letter is to transmit an executed original of the subject modification. This modification revises Contract Section B, *Supplies or Services and Prices/Costs*, to obligate incremental funding in the amount of \$55,000,000.00. The updated conformed contract section can be accessed from the U.S. Department of Energy, Office of River Protection website.

If you have any questions regarding this contract action, please contact me at (509) 376-4427.

A handwritten signature in blue ink that reads "Katie Mair".

Katie A. Mair  
Contracting Officer

CPM:KAM

Attachment

cc w/attach:  
BNI Correspondence



**OFFICE OF RIVER PROTECTION**

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

**APR 16 2018**

18-WTP-0032

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

Mr. Binns:

**CONTRACT NO. DE-AC27-01RV14136 – DIRECT-FEED LOW-ACTIVITY WASTE  
PROJECT SCHEDULE IMPACTS DUE TO EFFLUENT MANAGEMENT FACILITY  
PERMITTING DELAYS**

- References:
1. BNI letter from C.K. Binns to R.L. Dawson, ORP, "Request for Equitable Adjustment No. 2017-001, EMF Permitting Delays," CCN: 296501, dated August 22, 2017.
  2. ORP letter from R.E. Cone, Jr. and W.F. Hamel to C.K. Binns, BNI, "Direct Feed Low-Activity Waste Project Schedule Impacts Due to Effluent Management Facility Permitting Delays," 17-WTP-0195, dated October 18, 2017.
  3. BNI letter from C.K. Binns to R.L. Dawson, ORP, "Direct Feed Low-Activity Waste Project Schedule Impacts Due to Effluent Management Facility Permitting Delays – BNI Response to ORP Rejection of REA 2017-001," CCN: 302457, dated February 15, 2018.

The U.S. Department of Energy, Office of River Protection (ORP), Waste Treatment and Immobilization Plant Project (WTP) recognized the schedule challenges associated with utilizing the traditional permitting process for Effluent Management Facility (EMF) and has consistently worked with Bechtel National, Inc. (BNI) to engage the Washington State Department of Ecology and help identify opportunities for potential schedule improvements. These cooperative efforts supported an accelerated approval of the EMF Secondary Containment Permit modification on September 5, 2017, ahead of the 12 month completion target of November 21, 2017.

BNI is responsible for the permitting process as listed in the Statement of Work in Section C.3, *"Interactions with the Waste Treatment and Immobilization Plant Contractor," (f)The Contractor shall: (2) (iii), and in Section C.4 Environment, Safety, Quality, Health, (4)Environmental Protection.*

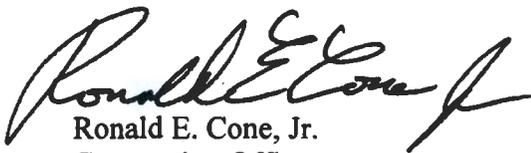
Mr. C.K. Binns  
18-WTP-0032

-2-

APR 16 2018

Reference 3 above provided some discussion but no additional information to support Request for Equitable Adjustment (REA) approval. ORP reaffirms the rejection of REA No. 2017-001, EMF Permitting Delays due to insufficient justification as specified in Reference 2. ORP has taken a proactive approach to facilitate reduced permit activity durations and make a "best effort" in accordance with Section H.53, *Low-Activity Waste Facility, Balance of Facilities, and Analytical Laboratory/Direct-Feed Low-Activity Waste Completions (CLINs 1.0 AND 2.0)*, (b)(2) of the WTP Contract. BNI is responsible for the permitting process, as listed in the Statement of Work, and DOE cannot assume responsibility for the duration of the time period needed for BNI to receive approval from Washington State Department of Ecology. ORP will continue to make every possible effort to facilitate timely permit reviews for EMF construction authorization of discrete activities.

If you have any questions, please contact me, or your staff may contact Jason Young, Federal Project Director, Balance of Facilities and Analytical Laboratory, at (509) 376-0375.



Ronald E. Cone, Jr.  
Contracting Officer



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

WTP:JDY

cc: BNI Correspondence



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

**MAY 07 2018**

18-CPM-0066

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

Mr. Binns:

CONTRACT NO. DE-AC27-01RV14136 – CONTRACT MODIFICATION NO. 422,  
INCREMENTAL FUNDING AND CONTRACT ADMIN CHANGES

The purpose of this letter is to transmit an executed original of the subject modification. This modification revises Contract Section B, *Supplies or Services and Prices/Costs*, to obligate incremental funding in the amount of \$53,300,495.00 and Contract Section G, *Contract Administration Data*. The updated conformed contract sections can be accessed from the U.S. Department of Energy, Office of River Protection website.

If you have any questions regarding this contract action, please contact me at (509) 376-5583.

A handwritten signature in blue ink that reads "Ronald E. Cone Jr.".

Ronald E. Cone Jr.  
Contracting Officer

CPM:REC

Attachment

cc w/attach:  
BNI Correspondence



**OFFICE OF RIVER PROTECTION**

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

**MAY 14 2018**

18-CPM-0069

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

Mr. Binns:

CONTRACT NO. DE-AC27-01RV14136 – REQUEST FOR SIGNATURE - CONTRACT  
MODIFICATION NO. 423

The purpose of this letter is to transmit the subject modification and the 2018 PEMP Rev.1 for signature. This modification incorporates the 2018 Performance Evaluation Management Plan (PEMP) Rev.1 and revises the Project Assignment Incentive language in Section J, *List of Attachments*. Please sign and return two (2) originals of the attached contract modification (Attachment 1) to the Contracting Officer. Also, please have the 2018 PEMP Rev.1 (Attachment 2) signed and returned to the Contracting Officer. An executed original of the contract modification and 2018 PEMP will be returned for your records once the signed originals are received.

If you have any questions regarding this contract action, please contact me at (509) 376-5583.

A handwritten signature in blue ink that reads "Ronald E. Cone Jr." in a cursive style.

Ronald E. Cone Jr.  
Contracting Officer

CPM:REC

Attachments (2)

1. Contract Modification 423
2. 2018 PEMP

cc w/attachs:  
BNI Correspondence



**OFFICE OF RIVER PROTECTION**

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

**MAY 15 2018**

18-WTP-0046

Ms. K.D. Irwin  
Deputy Project Director  
Bechtel National, Inc.  
2435 Stevens Center Place  
Richland, Washington 99354

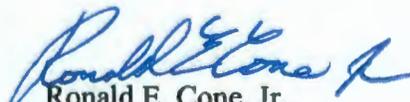
Ms. Irwin:

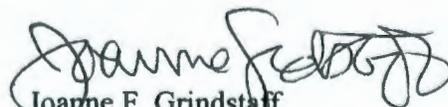
CONTRACT NO. DE-AC27-01RV14136 – THE U.S. DEPARTMENT OF ENERGY, OFFICE OF RIVER PROTECTION CONDITIONAL CONCURRENCE ON THE ENGINEERING RE-DRAFT STUDY FOR THE LOW-ACTIVITY WASTE CARBON DIOXIDE GAS SYSTEM, EXTERNAL

Reference: BNI letter from K.D. Irwin to R.L. Dawson, ORP, "Transmittal of 24590-LAW-ES-ENG-17-012, Rev 0, *Engineering Re-Draft Study – LAW Carbon Dioxide Gas System, External*," CCN: 305830, dated April 11, 2018.

This letter provides U.S. Department of Energy, Office of River Protection conditional concurrence with the Bechtel National, Inc. study 24590-LAW-ES-ENG-17-012, Rev. 0 *Engineering Re-Draft Study – LAW Carbon Dioxide Gas System, External*, transmitted via the Reference. The Office of River Protection concurs with the study provided Bechtel National, Inc. 1) appropriately tracks and carries out the required actions as stated in the Reference cover letter and Section 2.2 of 24590-LAW-ES-ENG-17-012, Rev. 0; and 2) completes the post-maintenance leak tests on each of the carbon dioxide gas pumps as specified in Non-Conformance Report 24590-WTP-NCR-CON-18-0078.

If you have any questions, please contact Ronald E. Cone, Jr., Contracting Officer, (509) 376-5583, Joanne F. Grindstaff, Deputy Federal Project Director, Waste Treatment and Immobilization Plant Project, (509) 376-6202, or your staff may contact Paul Hirschman, Director Waste Treatment and Immobilization Plant, Engineering Division, (509) 376-2477.

  
Ronald E. Cone, Jr.  
Contracting Officer

  
Joanne F. Grindstaff  
Deputy Assistant Manager  
Deputy Federal Project Director  
Waste Treatment and Immobilization Plant

WTP:SMS  
cc: BNI Correspondence



## OFFICE OF RIVER PROTECTION

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

**MAY 17 2018**

18-NSD-0009

Mr. Brian Reilly, Project Director  
Bechtel National, Inc.  
2435 Stevens Center Place  
Richland, Washington 99354

Mr. Reilly:

CONTRACT NO. DE-AC27-01RV14136 – APPROVAL OF 24590-LAW-DSA-NS-18-0001, “DOCUMENTED SAFETY ANALYSIS FOR THE LOW-ACTIVITY WASTE FACILITY,” AND 24590-LAW-TSR-NS-18-0001, “LOW-ACTIVITY WASTE FACILITY TECHNICAL SAFETY REQUIREMENTS”

- References:
1. BNI letter from B.P. Reilly to T.W. Fletcher, ORP, “Regulatory Deliverable 9.1 – Submittal of the Updated Low-Activity Waste Facility Documented Safety Analysis and Technical Safety Requirements for ORP Approval,” CCN: 303588, May 7, 2018.
  2. BNI letter from B.P. Reilly to T.W. Fletcher, ORP “Regulatory Deliverable 9.1 – Submittal of the Low-Activity Waste Facility Documented Safety Analysis and Technical Safety Requirements Implementation Plan for ORP Approval,” CCN: 303589, May 11, 2018.

In accordance with the requirements of 10 CFR 830.202, and Waste Treatment and Immobilization Plant (WTP) Contract No. DE-AC27-01RV14136, the U.S. Department of Energy, Office of River Protection (ORP) conditionally approves, 24590-LAW-DSA-NS-18-0001, REV 0, *Documented Safety Analysis for the Low-Activity Waste Facility (DSA)*, and 24590-LAW-TSR-NS-18-0001, REV 0, *Low-Activity Waste Facility Technical Safety Requirements (TSR)*, which Bechtel National, Inc. (BNI) provided to ORP on May 7, 2018 (Reference 1).

ORP’s review of the DSA/TSR is contained in the attached *Safety Evaluation Report of Documented Safety Analysis and Technical Safety Requirements for the Low-Activity Waste Facility*.

Based on ORP’s review of the DSA and TSR for LAW, the SER contains two conditions of approval, summarized below:

- **Condition of Approval 1:** The planned design and operational safety improvements identified in DSA Section 3.3.2.3.2 shall be completed as described on the committed schedule. Quarterly status reports shall be provided to the ORP Nuclear Safety Division through final closure.

MAY 17 2018

- **Condition of Approval 2:** BNI shall develop and implement a plan concurred on by ORP for the facility safety software (PPJ) and the integrated control network (ICN), which ensures the safety-significant and other Defense in Depth (DID) software requirements specified in the LAW Facility safety basis have a documented, traceable implementation, and are appropriately tested prior to the introduction of significant facility hazards.

ORP views Condition of Approval 2 as a subset of the BNI corrective actions undertaken to improve software quality assurance. The establishment of this condition of approval does not obviate the need for or alter corrective actions committed to in order to address prior findings. It is ORP's expectation that satisfaction of the condition of approval be in line with current efforts to resolve software requirements identification and traceability deficiencies as noted in BNI's approved 24590-WTP-PL-ENG-15-0009, *Software Quality Improvement Plan for MIP-28B*.

The SER also includes directed changes to the DSA/TSR summarized below:

- ORP directs that differential pressure instruments for the primary high-efficiency particulate air (HEPA) filter banks and backup HEPA filter banks be designated as safety-significant.
- The SER also includes directed page changes. These directed page changes are provided in Appendix C, "Directed Action No. 2: Documented Safety Analysis and Technical Safety Requirement Changes," of the SER.

BNI is further requested to develop a resource-loaded schedule and plan for implementation of the planned design and operational safety improvements identified in LAW DSA Chapter 3 and other planned revisions. The initial plan shall be provided to ORP for review within 90 days of this letter. Thereafter, BNI is requested to provide an updated status on the progress toward plan completion on a quarterly basis consistent with the status updates required by the condition of approval.

The attached SER, in draft form, was informally transmitted to BNI Nuclear Safety Engineering for factual accuracy review. The DOE Office of Enterprise Assessment (EA) also reviewed the draft SER. Resolution of comments received from EA were incorporated into the SER as discussed with the EA-31, Office of Nuclear Safety and Environmental Assessments.

Implementation of the approved LAW Facility safety basis will occur as specified in BNI proposed plan 24590-WTP-PL-ENG-18-0003, *LAW DSA and TSR Implementation Plan*, Rev. 0 (Reference 2). The extended timeframe for LAW Facility safety basis implementation proposed by BNI is necessary given the current state of facility design and construction. Although safety basis implementation is deferred, the BNI proposed implementation approach ensures the appropriate hazard controls derived from the LAW Facility safety basis are implemented prior to introduction of significant facility hazards (i.e., mercury from feed, oxides of nitrogen from

Mr. Brian Reilly  
18-NSD-0009

-3-

MAY 17 2018

melter operations, liquid carbon dioxide, ammonia for the offgas treatment systems, and 5 molar or greater sodium hydroxide) during the commissioning phase.

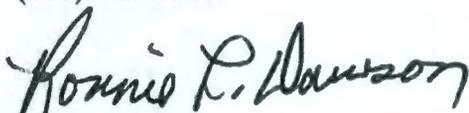
ORP is aware of an issue reported by the DOE Office of the Associate Under Secretary for Environment, Health, Safety and Security (Data Collection Sheets 1934 and 1961) involving falsification of quality records by Kobe Steel, Ltd. and its subsidiaries that could impact steel commodities procured for use in the LAW facility by BNI and its subcontracted fabricators. BNI is investigating to determine extent of condition with respect to the use and application of these steel commodities and will evaluate any impacts on the LAW facility design and safety. BNI is requested to provide status updates on a quarterly basis until this issue is resolved.

As identified in the SER, ORP also Considers the Legacy COA identified in Attachment 4 of the Reference 1 to be closed. Likewise, the DNFSB issues in Attachment 5 of the Reference 1 to have been adequately addressed.

ORP noted the document number in Attachment 2 from BNI letter CCN: 303588, "Regulatory Deliverable 9.1 – Submittal of the Updated Low-Activity Waste Facility Documented Safety Analysis and Technical Safety Requirements for ORP Approval," was numbered in error. The correct number is 24590-LAW-TSR-NS-18-0001, Rev. 0.

With ORP approval of the DSA and TSR, BNI has satisfied the contract requirements for section J, Attachment P, Interim Fee Milestone B-1, "ORP (SER) Approval of the LAW DSA."

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



Ronnie L. Dawson  
Contracting Officer



Ben J. Harris  
Deputy Manager

NSD:MGA

Attachment

cc w/attach:

J.A. Hutton, EM-3.1  
G. Sosson, EM-3.11  
R.T. Brock, BNI  
A.J. Dobson, BNI  
D.E. Kammenzind, BNI  
P.K. Fox, DNFSB  
BNI Correspondence



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

**MAY 17 2018**

18-NSD-0010

Ms. K.D. Irwin  
Deputy Project Director  
Bechtel National, Inc.  
2435 Stevens Center Place  
Richland, Washington 99354

Ms. Irwin:

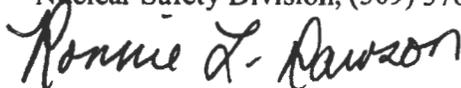
**CONTRACT NO. DE-AC27-01RV14136 – APPROVAL OF REGULATORY  
DELIVERABLE 9.1 – SUBMITTAL OF THE LOW-ACTIVITY WASTE FACILITY  
DOCUMENTED SAFETY ANALYSIS AND TECHNICAL SAFETY REQUIREMENTS  
IMPLEMENTATION PLAN**

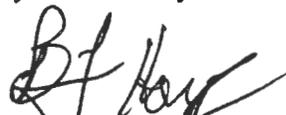
Reference: BNI letter from B.P. Reilly to T.W. Fletcher, ORP, “Regulatory Deliverable 9.1 –  
Submittal of the Low-Activity Waste Facility Documented Safety Analysis and  
Technical Safety Requirements Implementation Plan for ORP Approval,”  
CCN: 303589, May 11, 2018.

The U.S. Department of Energy, Office of River Protection (ORP) is transmitting this letter to document its approval of Bechtel National, Inc.’s (BNI) 24590-WTP-PL-ENG-18-0003, *LAW DSA and TSR Implementation Plan*, Rev. 0, for 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(h), and Table C.5-1.1, item 9.1, as submitted in the Reference with one directed change. ORP directs BNI to replace the “Hazard Analysis Report (HAR)” with “Auditable Safety Analysis (ASA)” in the implementation plan. BNI is not required to resubmit the implementation plan for ORP approval when this change is implemented.

It is the understanding of ORP that the implementation of the ASA will be implemented prior to the introduction of any of the following five hazards: melter offgas (principally nitrogen oxides-NO<sub>x</sub>), ammonia, liquid carbon dioxide, sodium hydroxide (feed and reagent), and mercury and iodine concentrated in carbon bed.

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

  
Ronnie L. Dawson  
Contracting Officer

  
Ben J. Harp  
Deputy Manager

NSD: MGA

cc: R.T. Brock, BNI  
BNI Correspondence



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

**MAY 18 2018**

18-WTP-0057

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

Mr. Binns:

CONTRACT NO. DE-AC27-01RV14136 – RESPONSE TO CONTRACT DELIVERABLE  
1.13 – LBL PHYSICAL PLANT COMPLETE INCLUSION/EXCLUSION LIST FOR  
DETERMINATION OF MILESTONE – SECOND QUARTER FISCAL YEAR 2018

Reference: BNI letter from C.K. Binns to R.L. Dawson, ORP, “Contract Deliverable 1.13 –  
Submittal of Low-Activity Waste Facility Physical Plant Complete  
Inclusion/Exclusion List of Activities for Determination of Milestone, and Update  
to LBL Physical Plant Complete Milestone Definition Clarification Document,”  
CCN: 303483, dated April 9, 2018.

The purpose of this letter is to provide the U.S. Department of Energy, Office of River  
Protection’s (ORP) response to the referenced Bechtel National, Inc. (BNI) submittal of Contract  
Deliverable 1.13, quarterly update to the Low-Activity Waste Facility, Balance of Facilities, and  
Analytical Laboratory (collectively referred to as LBL) physical plant complete  
inclusions/exclusion list of activities for determination of Milestone A-5 completion.

ORP approves the BNI submittal, with the exceptions noted in the sections below:

**CCN: 303483, Attachment 2, “LAW Physical Plant Completion Inclusion/Exclusion List of  
Activities for Determination of Milestone.”**

The BNI submittal proposed a number of activities for exclusion based on the progression of the  
preliminary documented safety analysis (PDSA) and documented safety analysis (DSA) process.  
ORP recognizes that, in many cases, BNI elected to not perform work in areas potentially subject  
to change, in order to avoid rework. However, in accordance with the WTP Contract  
No. DE-AC27-01RV14136, *Design, Construction, and Commissioning of the Hanford Tank*

MAY 18 2018

*Waste Treatment and Immobilization Plant*, exclusions for Milestone A-5 are limited to "new safety-significant components." Therefore, exclusions related to PDSA/DSA are not approved. ORP needs to have a discussion with BNI to understand the rationale and establish the documentation expectation for PDSA/DSA exclusions broader than the contract requirement.

Additionally, ORP does not approve the following schedule activities for exclusion. These activities are to be included as part of the milestone completion as they represent subcontractor inspection-related work required for milestone completion. ORP acknowledges that while no BNI physical construction work is associated with these activities, BNI subcontractors are supporting facility inspection activities, and therefore the following schedule activities are required for milestone completion:

- 4LL1510128 – LAW - S/C Perform NDE Part 1
- 4LL1510129 – LAW - S/C Perform NDE Part 2
- 4LL1510131 – LAW - S/C Perform NDE Part 3
- 4LL1510133 – LAW - S/C Perform NDE for Vessel Repairs
- 4LL1510141 – LAW - S/C Perform NDE Part 4
- 4LL1510151 – LAW - S/C Perform NDE Part 5
- 4LL1510161 – LAW - S/C Perform NDE Part 6
- 4LL5200740 – LAW - S/C Perform NDE for WESP 1 & 2 Weld Repairs (Radiographic Testing)
- 4LL1510171 – LAW - S/C Perform NDE Part 7 (1)
- 4LL1510271 – LAW - S/C - NDE - Perform NDE - Support to Construction
- 4LL4500211 – LAW - S/C Mistras - Perform Third Party Inspections - (Melter Refractory)
- 4LL5200216 – LAW - S/C Mistras - Perform Third Party Inspections - (Tank Inspections)
- 4LL4500216 – LAW - S/C Mistras - Melter #1 & #2 - Perform Third Party Inspections - Part II
- 4LL5200221 – LAW - S/C Mistras - Melter #1 & #2 - Completion of Third Party Inspections - Part III
- 4LL5200217 – LAW - S/C Mistras - Perform Third Party Inspections - (Tank Inspections) Part 2 (1)
- 4LL5200222 – "LAW - S/C Mistras - Melter #1 & #2 - Completion of Third Party Inspections - Part IV (Variance)"
- 4LL5200745 – LAW - S/C Mistras - Perform Third Party Inspections (DWP Inspections).

**CCN: 303483, Attachment 3, "LBL Physical Plant Complete Clarifications."**

**Section (1) "General Clarifications," (a)(iii)** – In this new clarification, BNI proposes new issues identified 30 calendar days prior to completion of "hands-on" construction activities should be excluded from the scope of milestone completion.

ORP agrees with the 30-day cut-off time; however, this period will be from the receipt date of the BNI milestone completion declaration letter, not the completion of "hands-on" construction. Additionally, any new issue identified between the cut-off date and ORP validation completion, considered significant by ORP, and that may impact the validity of completed milestone, needs to be addressed prior to ORP acceptance of the LBL physical plant complete milestone.

Mr. C.K. Binns  
18-WTP-0057

-3-

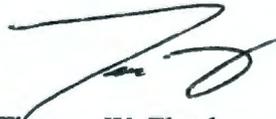
**MAY 18 2018**

ORP notes that the time taken by BNI to resolve any issues identified during the ORP milestone validation period, shall be added to the milestone completion declaration date for the determination of Milestone A-5 completion.

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



Ronald E. Cone, Jr.  
Contracting Officer



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

WTP:WA

cc: BNI Correspondence



**OFFICE OF RIVER PROTECTION**

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

**MAY 22 2018**

18-WTP-0045

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

Mr. Binns:

**CONTRACT NO. DE-AC27-01RV14136 – CONCURRENCE OF LONG-TERM  
PREVENTIVE MAINTENANCE PROGRAM - 24590-WTP-PD-RAPM-PM-001, REV 2**

- References:
1. BNI letter from L.W. Baker to R.L. Dawson, ORP, "Notification of Contract Changes for Impacts to the Preventive Maintenance Program Resulting from DOE Direction," CCN: 286032, dated September 26, 2016.
  2. BNI letter from C.K. Binns to R.L. Dawson, ORP, "Response to Request for Adequate Information for Changes to WTP Preventive Maintenance Program," CCN: 297016, dated April 20, 2017.
  3. ORP email from R.L. Dawson to B.D. Ponte, BNI, "Changes to Preventive Maintenance – Request for Extension," CCN: 293197, dated June 19, 2017.
  4. BNI letter from C.K. Binns to R.L. Dawson, ORP, "Transmittal of Long-Term Preventive Maintenance Program Description," CCN: 280348, dated April 5, 2018.

The U.S. Department of Energy, Office of River Protection, hereby concurs with the long-term preventive maintenance program as described in Reference 4. A number of comments for improvement have been provided to Bechtel National, Inc., informally, for incorporation in the next revision.

If you have any questions, please contact me, or you may contact Robert Chase, Project Services, Project Control Specialist, at (509) 376-1849.

A handwritten signature in black ink that reads "Ronnie L. Dawson".

Ronnie L. Dawson  
Contracting Officer

WTP:REC

cc: BNI Correspondence



**OFFICE OF RIVER PROTECTION**

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

**JUN - 4 2018**

18-WTP-0063

Mr. B.P. Reilly, Project Director  
Bechtel National, Inc.  
2435 Stevens Center Place  
Richland, Washington 99354

Mr. Reilly:

CONTRACT NO. DE-AC27-01RV14136 – COMPLETION OF PRELIMINARY  
EVALUATION OF SINGLE MELTER COMMISSIONING APPROACH FOR THE LOW-  
ACTIVITY WASTE FACILITY

- References:
1. ORP letter from G.F. Champlain and W.F. Hamel to M.G. McCullough, BNI, "Programmatic Actions Needed to Ensure Certainty of Completion of Waste Treatment and Immobilization Plant Facilities Needed for Direct-Feed Low Activity Waste," 17-WTP-0208, dated October 31, 2017.
  2. Preliminary Results from Single Melter Environmental Performance Demonstration Test Feasibility Study, CCN: 301820, dated April 12, 2018.

In Reference 1, the U.S. Department of Energy, Office of River Protection (ORP) provided direction to pursue a number of programmatic initiatives aimed at increasing confidence in the completion of the direct-feed low activity waste (DFLAW) capability by December 31, 2021. One of the initiatives was to evaluate the benefits of conducting cold commissioning of the Low-Activity Waste (LAW) Facility with a single melter versus the current two melter cold commissioning approach.

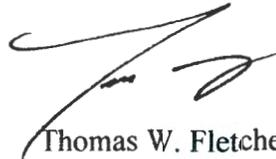
Bechtel National, Inc. (BNI) has provided the initial feasibility study of the single melter commissioning initiative, documented in Reference 2. Based on a multi-disciplinary review of the BNI feasibility study, ORP has decided to continue with the existing contract approach of two melter cold commissioning, which is consistent with the Waste Treatment and Immobilization Plant (WTP) project's key performance parameters and the definition of Critical Decision-4a in the WTP Project Execution Plan.

Mr. Brian Reilly  
18-WTP-0063

-2-

JUN - 4 2018

If you have any questions, please contact me at (509) 376-4941; or Wahed Abdul, Federal Project Director for LAW, High-Level Waste, and Pretreatment Facilities at (509) 438-0455.



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

WTP:JST

cc: BNI Correspondence



**OFFICE OF RIVER PROTECTION**

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

**JUN - 4 2018**

18-WTP-0067

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

Mr. Binns:

**CONTRACT NO. DE-AC27-01RV14136 – APPROVAL OF EXCLUSIONS TO LBL PHYSICAL PLANT COMPLETE MILESTONE A-5, RELATED TO PRELIMINARY DOCUMENTED SAFETY ANALYSIS AND DOCUMENTED SAFETY ANALYSIS EVOLUTION**

- References:
1. BNI letter from C.K. Binns to R.L. Dawson, ORP, "Contract Deliverable 1.13 – Submittal of Low-Activity Waste Facility Physical Plant Complete Inclusion/Exclusion List of Activities For Determination of Milestone, and Update to LBL Physical Plant Complete Milestone Definition Clarification Document," CCN: 303483, dated April 9, 2018.
  2. ORP letter from R.E. Cone, Jr. and T.W. Fletcher to C.K. Binns, BNI, "Response to Contract Deliverable 1.13 – LBL Physical Plant Complete Inclusion/Exclusion List for Determination of Milestone – Second Quarter Fiscal Year 2018," 18-WTP-0057, dated May 18, 2018.
  3. BNI letter from C.K. Binns to T.W. Fletcher, ORP, "Response to ORP Regarding Preliminary Documented Safety Analysis and Documented Safety Analysis Exclusions to Contract Deliverable 1.13 – LBL Physical Plant Complete Inclusion/Exclusion List for Determination of Milestone," CCN: 303935, dated May 25, 2018.

In Reference 1, Bechtel National, Inc. (BNI) submitted Contract Deliverable 1.13, quarterly update to the Low-Activity Waste (LAW) Facility, Balance of Facilities, and Analytical Laboratory (collectedly referred to as LBL) physical plant complete inclusion/exclusion list of activities for determination of Milestone A-5 completion, that included a list of exclusions related to preliminary documented safety analysis (PDSA) and documented safety analysis (DSA) evolution.

In Reference 2, The U.S. Department of Energy, Office of River Protection (ORP) requested a discussion and additional information to understand the rationale and clarify documentation expectations for BNI's exclusions related to PDSA and DSA. ORP and BNI met on May 24, 2018, and discussed BNI's basis for milestone exclusion of the specific LAW Facility systems, components, and construction commodities that were impacted, directly or indirectly, by the new safety significant component changes and overall PDSA/DSA evolution of the LAW Facility.

Subsequently, BNI issued Reference 3 with additional explanation and rationale for PDSA/DSA exclusions, in accordance with the meeting. The exclusions for PDSA/DSA evolution include items with both upgrades and downgrades to safety classification, items deferred to avoid potential rework due to pending safety classification decisions, and ancillary work scope (i.e., cabling, tubing, hydrostatic testing, etc.) that directly support the changes to SSCs resulting from PDSA/DSA evolution. Based on the additional understanding and documentation received, ORP approves the exclusions to the A-5 milestone related to PDSA/DSA evolution.

BNI noted that they clearly understand that approval of this exclusion does not create an entitlement for equitable adjustment.

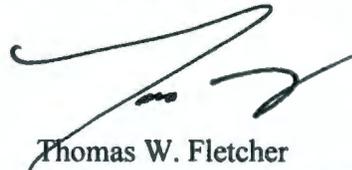
If you have any questions, please contact Wahed Abdul, Federal Project Director for LAW, High-Level Waste, and Pretreatment Facilities at (509) 438-0455.



Ronnie L. Dawson  
Contracting Officer

WTP:WA

cc: BNI Correspondence



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



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

**JUN - 6 2018**

18-WTP-0058

Ms. Kim D. Irwin  
Deputy Project Director  
Bechtel National, Inc.  
2435 Stevens Center Place  
Richland, Washington 99354

Ms. Irwin:

CONTRACT NO. DE-AC27-01RV14136 – U.S. DEPARTMENT OF ENERGY, OFFICE OF RIVER PROTECTION RESPONSE TO BECHTEL NATIONAL, INC. REQUEST TO UPDATE THE PERFORMANCE MEASUREMENT BASELINE

- References:
1. BNI letter from K.D. Irwin to T.W. Fletcher, ORP, "BNI Request to Update the Performance Measurement Baseline," CCN: 303579, dated May 1, 2018.
  2. ORP letter from M.T. McCusker to C.K. Binns, BNI, "Notification to Bechtel National, Inc. of Expectations of Satisfactory Project (Performance) Management and Continued Withholding of Provisional Fee," 18-CPM-0038, dated March 23, 2018.

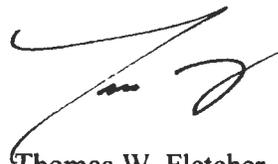
In Reference 1, Bechtel National, Inc. (BNI) requests the U.S. Department of Energy, Office of River Protection (ORP) to update its Performance Measurement Baseline (PMB) for the Waste Treatment and Immobilization Plant Project. ORP notes the reasons stated by BNI in its request, but ORP does not concur with incorporation of the March 2018 month-end schedule into the PMB at this time. ORP proposes the following path forward:

- Resolution and incorporation of the schedule changes needed to meet the expectations of the provisional fee letter (Reference 2), as recently discussed with BNI.
- Following incorporation of the changes above, perform a Humphrey's & Associates review, with ORP oversight/engagement on the team.
- After incorporation of any comments from the above review, ORP would then discuss with BNI the incorporation of the forecast into the baseline.

In the near term, ORP will discuss options with BNI for interim incorporation of the forecast schedule into the toolset for tracking purposes. ORP will work collaboratively with BNI staff to establish a high-confidence schedule and enhanced performance monitoring tools to give ORP and BNI management the information needed to effectively manage the completion of the Waste Treatment and Immobilization Plant Project.

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 Joni F. Grindstaff, Deputy Assistant Manager, Deputy Federal Project Director, Waste Treatment and Immobilization Plant, at (509) 376-6202.



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

**JUN 06 2018**

18-CPM-0089

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

Mr. Binns:

CONTRACT NO. DE-AC27-01RV14136 –MODIFICATION NO. 424, INCREMENTAL FUNDING

The purpose of this letter is to transmit an executed original of the subject modification. This modification revises Contract Section B, *Supplies or Services and Prices/Costs*, to obligate incremental funding in the amount of \$50,000,000.00. The updated conformed contract section can be accessed from the U.S. Department of Energy, Office of River Protection website.

If you have any questions regarding this contract action, please contact me at (509) 376-4427.

A handwritten signature in cursive script that reads "Katie A. Mair".

Katie A. Mair  
Contracting Officer

CPM:RLB

Attachment

cc w/attach:  
BNI Correspondence



**OFFICE OF RIVER PROTECTION**

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

**JUN 25 2018**

18-WTP-0074

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

Mr. Binns:

**CONTRACT NO. DE-AC27-01RV14136 – WASTE TREATMENT AND IMMOBILIZATION PLANT BALANCE OF FACILITIES MODIFICATIONS TO SUPPORT DIRECT FEED LOW-ACTIVITY WASTE OPERATIONS**

The Waste Treatment and Immobilization Plant (WTP) is being completed to support initial operation in the Direct Feed Low-Activity Waste (DFLAW) configuration. High-Level Waste Vitrification and Pretreatment facilities may be completed following commissioning in the DFLAW configuration and will require completion of numerous Balance of Facilities (BOF) systems. Many of the WTP BOF systems are required to provide near continuous service to preserve and prevent the loss of critical systems such as the Low-Activity Waste (LAW) melters.

WTP Contract DE-AC27-01RV14136, *Facility Specification*, Section C.7(d)(4)(iii) states:

“The current BOF infrastructure is designed to support full WTP operations; therefore, modification to the yard to support DFLAW operation will be required. Modifications of the BOF yard include an operating island fence, modified roadways, final grade within the operating island, stormwater drainage, sanitary sewer system, utility isolations, underground utilities, effluent and waste transfer lines, and a Na hydroxide offloading pad. These are permanent plant modifications that allow operation of the LAW Facility in a standalone fashion with a direct-feed capability as well as integrated facility operations.”

Bechtel National, Inc. is requested to confirm and describe how critical systems can be completed after initiation of operations in the DFLAW configuration while preserving critical facility assets. Some critical systems that require near continuous service include:

- Providing power from the main switchgear building (Building 87) to the High-Level Waste Vitrification and Pretreatment facilities. Power conductors will need to be landed in Building 87 while maintaining power to the Low-Activity Waste melters.
- Completion of repairs and startup of up to three additional steam boilers while providing steam for LAW, BOF, and Analytical Laboratory.

Mr. C.K. Binns  
18-WTP-0074

-2-

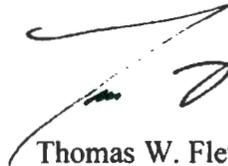
JUN 25 2018

- Completion of the chiller compressor plant and associated systems including startup of additional compressors, chillers, and dryers.
- Other systems with test deficiencies such as Non-radioactive Liquid Waste Disposal, which did not achieve required liquid transfer rates to support full WTP operations that may require modification while providing service.

If you have any questions, please contact me, or your staff may contact Jason D. Young, BOF/LAB Federal Project Director, Waste Treatment and Immobilization Plant at (509) 376-0375.



Ronnie L. Dawson  
Contracting Officer



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

WTP:RAG

cc: BNI Correspondence



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

**JUN 25 2018**

18-TRS-0007

Mr. Brian Reilly, Project Director  
Bechtel National, Inc.  
2435 Stevens Center Place  
Richland, Washington 99354

Mr. Reilly:

**CONTRACT NO. DE-AC27-01RV14136 – TRANSMITTAL OF U.S. GOVERNMENT  
ACCOUNTABILITY OFFICE REPORT, GAO-18-241, FOR BECHTEL NATIONAL, INC.  
ACTION**

This letter transmits to Bechtel National, Inc. (BNI) the United States Government Accountability Office (GAO) report, "Hanford Waste Treatment Plant DOE Needs to Take Further Actions to Address Weaknesses in its Quality Assurance Program," GAO-18-241 (attached). This report identifies weaknesses in the Waste Treatment and Immobilization Plant quality assurance program. The GAO report identifies recommendations (page 26) that the U.S. Department of Energy, Office of River Protection (ORP) has concurred with and which require further action. The first recommended action in this report states:

The Secretary of Energy should direct ORP to require the WTP contractor to determine the full extent to which problems exist in all WTP structures, systems, and components.

Consistent with the GAO recommendation, BNI is required to:

1. Evaluate and address the attached report within the BNI corrective action management process. As identified in the U.S. Department Energy letter provided in Appendix I to the GAO report, one corrective action taken must be the performance of an independent assessment of BNI's corrective action program deficiencies to identify programmatic weaknesses and to take action to address these weaknesses.

JUN 25 2018

Mr. Brian Reilly  
18-TRS-0007

-2-

2. Provide a plan of action and schedule to address the above cited GAO recommendation for ORP concurrence within 90 days. This plan should integrate ongoing or completed corrective actions to achieve the broader objective of the first recommendation identified by the GAO. BNI should work with ORP during the development of this plan to facilitate expeditious concurrence. Depending on the plans content, DOE may provide further guidance regarding the execution of the plan following its review.

For direct feed low-activity waste related activities, the schedule within the requested plan must allow for identification of potential issues and a time period for resolution of issues prior to the BNI management self-assessment that supports Cold Commissioning.

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



Ronnie L. Dawson  
Contracting Officer

NSD:RMI

cc: A.J. Dobson, BNI  
I. Milgate, BNI  
J. Tibble, BNI  
BNI Correspondence



**OFFICE OF RIVER PROTECTION**

P.O. Box 450, MSIN H6-60  
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**JUN 26 2018**

18-CPM-0100

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

Mr. Binns:

CONTRACT NO. DE-AC27-01RV14136 – TRANSMITTAL OF CONTRACT  
MODIFICATION NO. 425

The purpose of this letter is to transmit an executed original of the subject modification. This modification revises Contract Section J, List of Attachments, Attachment E, List of Applicable Directives, and Attachment F, Key Personnel. The updated conformed contract section can be accessed from the U.S. Department of Energy, Office of River Protection website.

If you have any questions regarding this contract action, please contact me at (509) 376-4427.

A handwritten signature in cursive script that reads "Katie Mair".

Katie Mair  
Contracting Officer

CPM:KAM

Attachment

cc w/attach:  
BNI Correspondence