



OFFICE OF RIVER PROTECTION
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Richland, Washington 99352

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MAY 12 2017

17-ECD-0024

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

Ms. Smith:

MAY 2017 QUARTERLY REPORT FOR THE STATE OF WASHINGTON VS.
U.S. DEPARTMENT OF ENERGY, CASE NO. 08-5085-RMP, FOR WASTE TREATMENT
AND IMMOBILIZATION PLANT CONSTRUCTION AND STARTUP ACTIVITIES AND
TANK RETRIEVAL ACTIVITIES – JANUARY 1, 2017, THROUGH MARCH 31, 2017

This letter transmits the U.S. Department of Energy May 2017 Quarterly Report (Attachment)
under Section IV-C-1 of the subject referenced Consent Decree, for the period of
January 1, 2017, through March 31, 2017. 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 also attached.

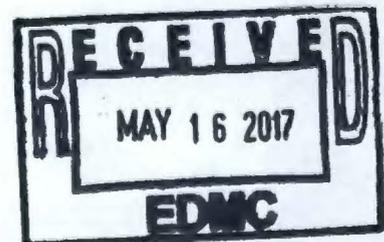
If you have any questions, please contact William F. Hamel, Assistant Manager, Waste
Treatment and Immobilization Plant Project, (509) 376-6727, or Glyn D. Trenchard, Acting
Assistant Manager, Tank Farms Project, (509) 373-4016.

Kevin W. Smith
Manager

ECD:RLE

Attachment

cc: See page 2



Ms. Alexandra K. Smith
17-ECD-0024

-2-

MAY 12 2017

cc w/attach:

K. Niles, Oregon Energy

Administrative Record

BNI Correspondence

WRPS Correspondence

cc w/o attach:

R.S. Skeen, CTUIR

S.L. Dahl, Ecology

J.J. Lyon, Ecology

J.D. McDonald, Ecology

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G. Bohnee, NPT

R. Buck, Wanapum

R. Jim, YN

D. Rowland, YN

**Attachment
17-ECD-0024
(76 Pages Excluding Cover Sheet)**

**U.S. Department of Energy, Office of River Protection
Quarterly Report, January 1, 2017, through March 31, 2017, and
Waste Treatment and Immobilization Plant Direction Letters**

Office of River Protection Quarterly Report

January 1, 2017, through March 31, 2017

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

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

Second Amended Consent Decree, *State of Washington v. Dept. of Energy*, Case No. 2:08-5085-RMP (April 12, 2016)¹



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

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

GLYN TRENCHARD Date

5-12-17

¹ 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.

Project Earned Value Management System Reflects through February 2017 Information

Topic	Page
ACRONYMS AND ABBREVIATIONS	II
INTRODUCTION	1
TANK FARM ACTIONS AND MILESTONES	2
SINGLE-SHELL TANK RETRIEVAL PROGRAM	3
TANK WASTE RETRIEVAL WORK PLAN STATUS.....	6
WASTE TREATMENT AND IMMOBILIZATION PLANT PROJECT	10
WASTE TREATMENT AND IMMOBILIZATION PLANT MILESTONES	12
PRETREATMENT FACILITY	18
HIGH-LEVEL WASTE FACILITY.....	24
LOW-ACTIVITY WASTE FACILITY	26
BALANCE OF FACILITIES	29
ANALYTICAL LABORATORY	32
WRITTEN DIRECTIVES	34
RETRIEVAL LABOR HOURS	36
SPARE REBOILER REQUIREMENT STATUS.....	37

Acronyms and Abbreviations

ABW	ABW Technologies
BNI	Bechtel National, Inc.
BOF	Balance of Facilities
C5V	C5 ventilation system
CGD	commercial grade dedication
CO ₂ e	carbon dioxide equivalent
CV	cost variance
D&O	design and operability
DFLAW	direct-feed low-activity waste
DNFSB	Defense Nuclear Facilities Safety Board
DOE	U.S. Department of Energy
Ecology	Washington State Department of Ecology
EMF	effluent management facility
ERSS	extended reach sluicer system
EVMS	Earned Value Management System
FY	fiscal year
HAMTC	Hanford Atomic Metal Trades Council
HEPA	high-efficiency particulate air
HLW	High-Level Waste (Facility)
HPAV	hydrogen in piping and ancillary vessels
HVAC	heating, ventilation, and air-conditioning
LAB	Analytical Laboratory
LAW	Low-Activity Waste (Facility)
LBL	Low-Activity Waste Facility, Balance of Facilities, and Analytical Laboratory
ORP	Office of River Protection
PDSA	preliminary documented safety analysis
PJM	pulse-jet mixer
POR	portable exhauster
PT	Pretreatment (Facility)
SCBA	self-contained breathing apparatus
SHSV	standard high solids vessel
SV	schedule variance
WRPS	Washington River Protection Solutions LLC
WTP	Waste Treatment and Immobilization Plant

Introduction

The U.S. Department of Energy (DOE) is submitting the following information to satisfy its obligation to provide “a written report documenting 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 vs. United States Department of Energy*, Case No. 2:08-CV-5085-RMP (March 11, 2016) and Second Amended Consent Decree, same case (April 12, 2016).

The narrative descriptions of progress in this report cover the period from January 1, 2017, to March 31, 2017. Earned Value Management System (EVMS) data and descriptions cover the quarterly period ending February 28, 2017; 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 from January 1, 2017, through March 31, 2017, for work required by the Consent Decree have been included with this report.

Tank Farm Actions and Milestones

Number	Title	Due Date	Status
<i>Actions</i>			
D-16E-01	U.S. Department of Energy must purchase by December 31, 2016, a spare A-E-1 ¹ reboiler for the 242-A Evaporator.	12/31/2016	Complete
D-16E-02	Have a spare A-E-1 ¹ reboiler available by December 31, 2018.	12/31/2018	On Schedule
<i>Milestones</i>			
D-16B-03	Of the 12 Single-Shell Tanks (SST) referred to in B-1 and B-2, complete retrieval of tank waste in at least five.	12/31/2020	Notice given that a serious risk has arisen. See letter 16-ORP-0097.
D-16B-01	Complete retrieval of tank waste from the following remaining SSTs in WMA-C: C-102, C-105, and C-111.	03/31/2024	On Schedule
D-16B-02	Complete retrieval of tank wastes from the following SSTs in Tank Farms A and AX: A-101, A-102, A-104, A-105, A-106, AX-101, AX-102, AX-103, and AX-104. Subject to the requirements of Section IV-B-3, the U.S. Department of Energy may substitute any of the identified nine SSTs and advise the Washington State Department of Ecology accordingly.	03/31/2024	Notice given that a serious risk has arisen. See letter 16-ORP-0097.

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

WMA-C = C 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 risen that DOE may be unable to meet Consent Decree milestones B-2 and B-3. As stated in that notification letter:

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, (hereinafter "the HAMTC Demand Letter, Stop Work Order, and MOA").

Ecology responded to DOE's December 6, 2016, letter on January 4, 2017, and requested a meeting in accordance with Section IV.C.3.a of the Consent Decree. That meeting occurred on March 16, 2017, contemporaneously with the Joint Three-Year Review under Section VI of the Consent Decree.

Tank Farms Assistant Manager: Glyn Trenchard

Federal Program Manager: Jeff Rambo

Accomplishments during the Reporting Period

- Completed AX Tank Farm emergency shower installation
- Completed an additional AX Tank Farm pit clean out (AX-02B); seven of eight pit clean outs completed
- Completed initial AX Tank Farm portable exhaustor POR126 and POR127 testing; both exhaustors are operating under "testing" conditions
- Completed foam and lead removal at Tank AX-103
- Completed Tank C-105 riser go-no-go testing for extended reach sluicing system (ERSS) installation
- Completed Tank C-105 excavations for electrical installations
- Initiated C Tank Farm hose-in-hose transfer line removals planned for fiscal year (FY) 2017.

Accomplishments Expected in the Next Three Months

- Negotiate contract proposal for installing and performing the third retrieval technology at Tank C-105

- Add second Tank C-105 construction shift to mitigate schedule impacts
- Complete Tank C-105 electrical installation
- Initiate Tank C-105 ERSS installation
- Initiate Tank C-105 slurry pump installation
- Complete AX Tank Farm ventilation readiness/turnover at POR126 and POR127
- Initiate Tank AX-102 and Tank AX-104 in-tank equipment removal
- Complete the one remaining Tank AX-104 pit clean out
- Complete Tank AX-101 foam and lead removal
- Complete 801A building demolition
- Complete installation of the new Tank C-105 control system.

Issues Encountered during the Reporting Period

DOE expects that Tank C-105 will be field complete by December 2017, which is three months later than the projected date reported in the October 2016 Consent Decree quarterly report (16-ECD-0054, “October 2016 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 – July 1, 2016, through September 30, 2016”).

The construction and placement of retrieval equipment at Tank AX-102 and Tank AX-104 has been delayed because of adverse weather conditions, lack of a supporting ventilation system, and reduced worker efficiencies associated with mandatory supplied air usage. Trained personnel who would have been assigned to this work have been reassigned to the installation of the third retrieval technology at Tank C-105, the final C Tank Farm tank. DOE’s fundamental planning assumption for completing milestone B-2 by March 31, 2024, was that self-contained breathing apparatus (SCBA) would not be required beyond FY 2016 and assumed tank farm retrieval construction field work would occur under the conditions existing prior to the Hanford Atomic Metal Trades Council (HAMTC) demand letter, stop work order, and Memorandum of Agreement.

These factors are causing a slip to Tank AX-102 and Tank AX-104 projected retrieval start dates by at least six months to January 2019, which may affect DOE’s ability to complete Consent Decree milestones B-2 and B-3 on schedule. Installation of retrieval equipment in Tank AX-101 and Tank AX-103 is expected to occur in 2018 and 2019.

Issues Expected in the Next Three Months

The mandatory use of supplied air consistent with the Memorandum of Agreement continues to adversely affect worker efficiency in this reporting period for all work inside the tank farms, with the exception of the deployment of air purifying respirators for certain activities in AP Tank Farm. As a result, field work in the AX Tank Farm and C Tank Farm will be impacted. DOE

and Washington River Protection Solutions LLC (WRPS) will continue to evaluate and communicate to the State of Washington the near-term and long-term impacts of these actions.

Actions Initiated or Taken to Address Potential Schedule Slippage

With the completion of retrieval operations of Tank AY-102 in accordance with the Settlement Agreement, WRPS plans to initiate an additional shift of construction forces, to focus on installation of the Tank C-105 chemical dissolution system. WRPS is continuing its efforts to increase the number of health physics technicians, industrial hygiene technicians, and skilled construction workforce to support tank waste retrieval efforts.

The AX Tank Farm exhausters POR126 and POR127 (redundant exhausters) ventilation installation activities were completed, and are currently in startup and commissioning operations. Operations of the exhausters are limited to 1,000 cfm, lower than their rated 3,000 cfm, by limitations of the Notice of Construction air permit issued by the State of Washington. Operation of portable AX Tank Farm exhausters is required to provide active ventilation to AX Tank Farm, in order to remove in-tank equipment including legacy pumps and long length probes.

Tank Waste Retrieval Work Plan Status

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

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

ERSS = extended reach sluicer system.
MARS-S = Mobile Arm Retrieval System-Sluicing.
MARS-V = Mobile Arm Retrieval System-Vacuum.
TWRWP = Tank Waste Retrieval Work Plan

Tank Waste Retrieval Work Plan Accomplishments during the Reporting Period

- None.

Tank Waste Retrieval Work Plan Accomplishments Expected in the Next Three Months

- Finalize AX Tank Farm retrieval work plans
- Incorporate third retrieval technology into the revised C-105 Tank Waste Retrieval Work Plan.

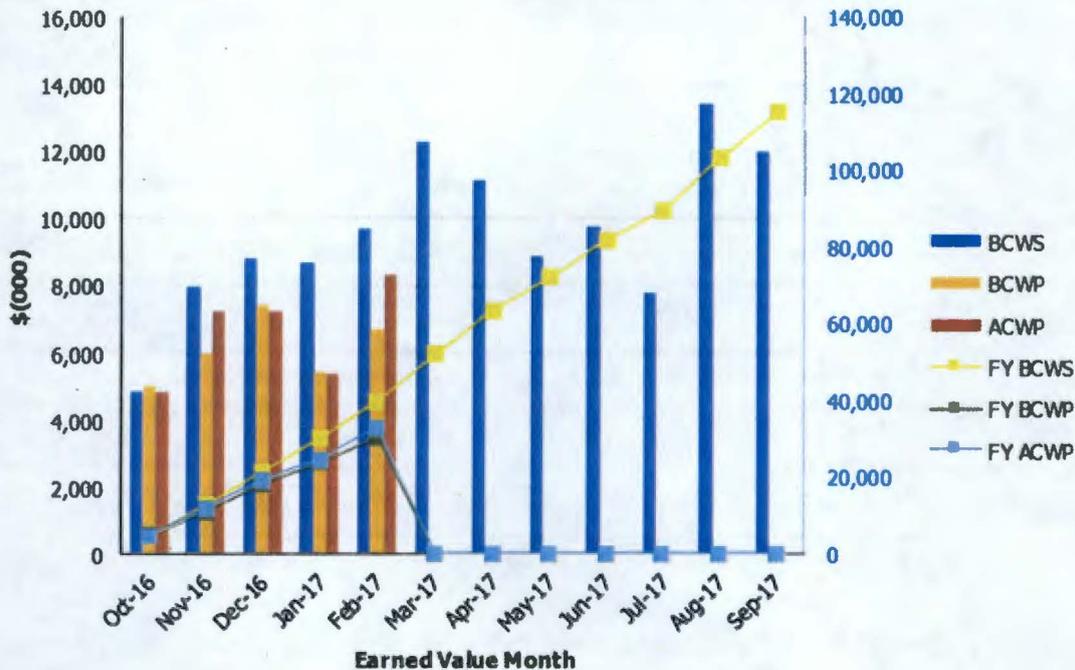
EXC-01a: Fiscal Year Cost and Schedule Report

Earned Value Data: Fiscal Year 2017

February-17

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

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2016	\$4,816	\$4,996	\$4,822	1.04	1.04	\$4,816	\$4,996	\$4,822	1.04	1.04
Nov 2016	\$7,924	\$5,969	\$7,241	0.75	0.82	\$12,740	\$10,965	\$12,063	0.86	0.91
Dec 2016	\$8,772	\$7,401	\$7,262	0.84	1.02	\$21,512	\$18,365	\$19,325	0.85	0.95
Jan 2017	\$8,646	\$5,422	\$5,360	0.63	1.01	\$30,158	\$23,787	\$24,685	0.79	0.96
Feb 2017	\$9,716	\$6,707	\$8,341	0.69	0.80	\$39,874	\$30,495	\$33,026	0.76	0.92
Mar 2017	\$12,286	\$0	\$0	0.00	0.00	\$52,160	\$0	\$0	0.00	0.00
Apr 2017	\$11,137	\$0	\$0	0.00	0.00	\$63,298	\$0	\$0	0.00	0.00
May 2017	\$8,865	\$0	\$0	0.00	0.00	\$72,163	\$0	\$0	0.00	0.00
Jun 2017	\$9,738	\$0	\$0	0.00	0.00	\$81,901	\$0	\$0	0.00	0.00
Jul 2017	\$7,769	\$0	\$0	0.00	0.00	\$89,670	\$0	\$0	0.00	0.00
Aug 2017	\$13,387	\$0	\$0	0.00	0.00	\$103,057	\$0	\$0	0.00	0.00
Sep 2017	\$11,973	\$0	\$0	0.00	0.00	\$115,030	\$0	\$0	0.00	0.00
CTD	\$749,042	\$728,544	\$753,700	0.97	0.97					

ACWP = actual cost of work performed.
 BCWP = budgeted cost of work performed.
 BCWS = budgeted cost of work scheduled.
 CPI = cost performance index.

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

Earned Value Management System Quarterly Analysis

Project EVMS reflects up to February 2017 information.

The **unfavorable** schedule variance (SV) of (\$3,009K) is due to:

- Adverse winter weather and beryllium concerns impacted field work activities in the AX Tank Farm and C Tank Farm.
- In-tank equipment removals within the AX Tank Farm continued to be delayed because of adverse weather conditions, lack of a supporting ventilation system, and reduced worker efficiencies associated with mandatory supplied air usage.

The **unfavorable** cost variance (CV) of (\$1,634K) is due to:

- Increased costs were incurred due to the inefficiencies associated with SCBA usage.
- Labor hours were expended for the removal of snow and ice within the tank farms, which is required for safe surveillance and monitoring activities.
- Due to beryllium concerns, previously completed field work packages required revisions. The revisions required the expenditure of labor hours not originally budgeted.

Waste Treatment and Immobilization Plant Project

Federal Project Director: Bill Hamel

Deputy Federal Project Director: Joni Grindstaff

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 currently employs approximately 2,831 full-time equivalent contractor, (Bechtel National, Inc. ([BNI])) and subcontractor personnel. This includes 617 craft, 603 non-manual, and 187 subcontractor full-time equivalent personnel working at the WTP construction site (all facilities).

The WTP Project continues to focus on completion of the Low-Activity Waste (LAW) Facility, Balance of Facilities (BOF), and the Analytical Laboratory (LAB) (collectively referred to as LBL, including direct-feed low-activity waste [DFLAW] and LBL facility services). As of February 2017, LBL facilities were 54 percent complete, design and engineering was 79 percent complete, procurement was 68 percent complete, construction was 70 percent complete, and startup and commissioning was 15 percent complete.

Accomplishments during the Reporting Period

- The Acting Assistant Secretary for Environmental Management sent a letter and supporting documentation to the Defense Nuclear Facilities Safety Board (DNFSB) Chairman in late January on the status of the nuclear safety technical issues, “Preventing Potential Hydrogen Build-Up” and “Preventing Criticality.” The letter indicated that since design-related activities on the Pretreatment (PT) Facility and the High-Level Waste (HLW) Facility were suspended in 2012, the DOE and the WTP contractor have performed a comprehensive set of work activities which now provides the DOE Office of River Protection (ORP) with sufficient confidence to direct the resumption of design activities affected by these nuclear safety technical issues.
- ORP briefed the DNFSB in late January on the status of the nuclear safety technical issues described in the above bullet (i.e., technical issue T1 in relation to hydrogen gas events in vessels; T2 in relation to criticality in pulse-jet mixer (PJM) vessels; and T3 in relation to hydrogen in piping and ancillary vessels [HPAV]). These technical issues have been sufficiently resolved to allow engineering to proceed in support of design and safety basis development.

Accomplishments Expected Next Reporting Period

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

Issues Encountered during the Reporting Period

- As noted in the previous report, the impact of Ecology's new greenhouse gas emissions rule (WAC 173-442, "Clean Air Rule") will continue to be gauged as the WTP Project evolves toward startup and commissioning.
 - *Impact:* Implementation of DFLAW is estimated to produce approximately 75,000 metric tons of carbon dioxide equivalent (CO₂e) per year. Other Hanford Site greenhouse gas emissions are approximately 15,000 MT CO₂e for 2015. At full operations, it is estimated the WTP will burn approximately 13.4 million gallons of diesel fuel per year with an estimated 136,000 metric tons of CO₂e emissions per year.
 - *Actions initiated or taken to address potential project schedule slippage:* DOE is continuing to evaluate the impacts of this rule on the WTP Project.

Issues Expected in the Next Three Months

- Issues expected in the next three months are noted in project reports for PT Facility, HLW Facility, LAW Facility, BOF, and LAB.

Waste Treatment and Immobilization Plant Milestones

Milestone	Title	Due Date	Status
Waste Treatment and Immobilization Plant Project			
D-00A-06	Complete Methods Validations	06/30/2032	On Schedule
D-00A-17	Hot Start of Waste Treatment Plant	12/31/2033	On Schedule
D-00A-01	Achieve Initial Plant Operations for WTP	12/31/2036	On Schedule
Pretreatment Facility			
D-00A-18	Complete Structural Steel Erections Below Elevation 56' in PT Facility	12/31/2009	Complete
D-00A-19	Complete Elevation 98' Concrete Floor Slab in PT Facility	12/31/2031	On Schedule
D-00A-13	Complete Installation of Pretreatment Feed Separation Vessels	12/31/2031	On Schedule
D-00A-14	PT Facility Construction Substantially Complete	12/31/2031	On Schedule
D-00A-15	Start PT Facility Cold Commissioning	12/31/2032	On Schedule
D-00A-16	PT Facility Hot Commissioning Complete	12/31/2033	On Schedule
High-Level Waste Facility			
D-00A-20	Complete Construction of Structural Steel to 14' in HLW Facility	12/31/2010	Complete
D-00A-21	Complete Construction of Structural Steel to 37' in HLW Facility	12/31/2012	Complete
D-00A-02	HLW Facility Construction Substantially Complete	12/31/2030	On Schedule
D-00A-03	Start HLW Facility Cold Commissioning	06/30/2032	On Schedule
D-00A-04	HLW Facility Hot Commissioning Complete	12/31/2033	On Schedule
Low-Activity Waste Facility			
D-00A-07	LAW Facility Construction Substantially Complete	12/31/2020	On Schedule
D-00A-08	Start LAW Facility Cold Commissioning	12/31/2022	On Schedule
D-00A-09	LAW Facility Hot Commissioning Complete	12/31/2023	On Schedule
Balance of Facilities			
D-00A-12	Steam Plant Construction Complete	12/31/2012	Complete
Analytical Laboratory			
D-00A-05	LAB Construction Substantially Complete	12/31/2012	Complete

BOF = balance of facilities.

HLW = high-level waste.

LAB = analytical laboratory.

LAW = low-activity waste.

PT = pretreatment.

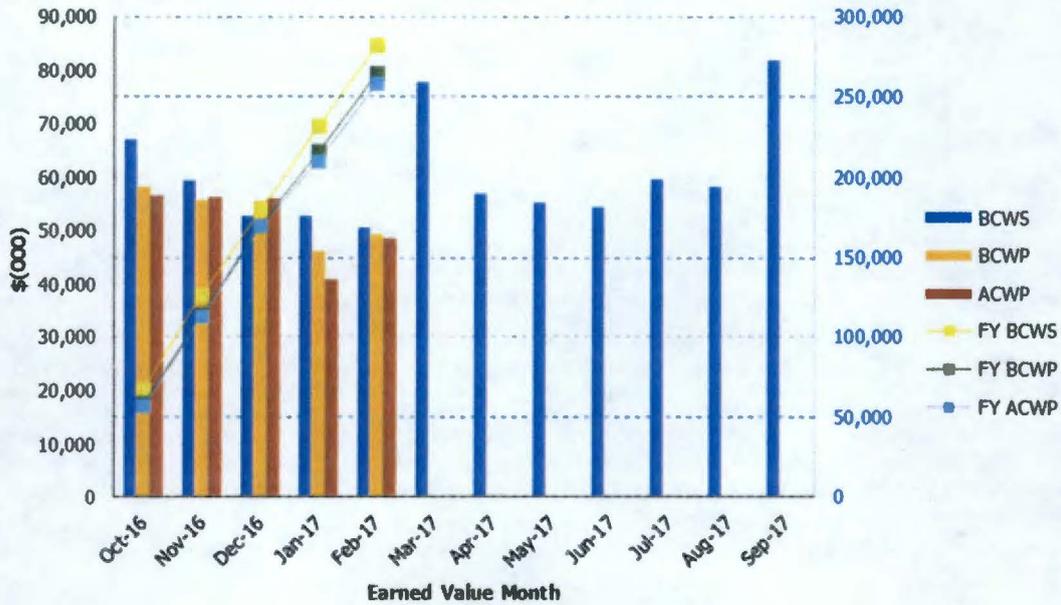
WTP = Waste Treatment and Immobilization Plant.

Data Set: FY 2017 Earned Value Data

Data as of: February 2017

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

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2016	\$67,019	\$58,321	\$56,633	0.87	1.03	\$67,019	\$58,321	\$56,633	0.87	1.03
Nov 2016	\$59,361	\$55,681	\$56,299	0.94	0.99	\$126,379	\$114,002	\$112,932	0.90	1.01
Dec 2016	\$52,654	\$55,489	\$56,125	1.05	0.99	\$179,033	\$169,491	\$169,057	0.95	1.00
Jan 2017	\$52,807	\$46,077	\$40,881	0.87	1.13	\$231,840	\$215,568	\$209,938	0.93	1.03
Feb 2017	\$50,489	\$49,354	\$48,627	0.98	1.01	\$282,329	\$264,922	\$258,565	0.94	1.02
Mar 2017	\$77,702									
Apr 2017	\$56,734									
May 2017	\$55,298									
Jun 2017	\$54,462									
Jul 2017	\$59,542									
Aug 2017	\$58,331									
Sep 2017	\$81,888									
PTD	\$10,110,444	\$10,065,931	\$9,988,654	1.00	1.01					

- | | |
|---|--|
| ACWP = actual cost of work performed. | CTD = contract to date. |
| BCWP = budgeted cost of work performed. | EVMS = earned value management system. |
| BCWS = budgeted cost of work scheduled. | FY = fiscal year. |
| CPI = cost performance index. | SPI = schedule performance index. |

Performance Tracking	SV (\$x1,000)	CV (\$x1,000)
Cumulative (through Feb. 2017)	(\$44,513)	\$77,277
Fiscal Year 2017 to-date	(\$17,407)	\$6,356
February 2017	(\$1,136)	\$726
January 2017	(\$6,730)	\$5,195
December 2016	\$2,836	(\$636)

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 work scope. Likewise, a favorable or positive CV would be reported if it cost less to complete the work than the performed dollar value of the work.

The SV and CV are reported for each monthly period, FY 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 February EVMS reporting period, a net **unfavorable SV** of approximately **(\$1.1 million)** was reported, primarily due to the following:

- LBL reported a net unfavorable SV of (\$2.1 million), related to LAW engineering delays in mechanical systems and controls and instrumentation and other LAW planned work scope, as the engineering labor staff is focused on completing the LAW PDSA-II, which is behind schedule. DFLAW is experiencing delays in completing civil, structural, and design reviews, and cannot provide planned procurement support for controls and instrumentation, because of delayed FY 2017 funding allocations. Startup reported delays in BOF because of Building 91 testing delays related in part to inclement weather, and a delay in turnover of the cooling tower and water treatment buildings. Plant Material reported delays in DFLAW related to late delivery of steel, pipe, and hangers.
- PT reported a net favorable SV of \$0.8 million, resulting from a rescheduling of a planned procurement delivery, early completion of controls testing and platform modifications, and resumption of simulant procurement and analysis for mixing testing.

For the January EVMS reporting period, a net **unfavorable SV** of approximately **(\$6.7 million)** was reported, primarily due to the following:

- LBL reported a net unfavorable SV of (\$8.2 million) related to construction delays associated with the prolonged receipt of the Effluent Management Facility (EMF) Temporary Authorization permit and challenges with on-time delivery of pipe procurement. As a result, construction deferred site work, concrete, piping, and installation of tank ring beams. In addition, the equivalent of 3 days of work stoppage due to inclement weather postponements or delays impacted subcontract and craft work levels. LAW engineering is behind schedule primarily related to delays in mechanical systems development, which were impacted by the delay in completing the LAW Preliminary Documented Safety Analysis (PDSA). Startup lags in BOF were related to nonradioactive liquid waste disposal (NLD) system testing delays and not achieving system turnover of the cooling tower and water treatment buildings.
- HLW reported a favorable SV of \$1.0 million, primarily due to the remote change high-efficiency particulate air (HEPA) filter qualification testing progressing ahead of schedule.
- PT reported a net favorable SV of \$0.4 million, primarily due to the Test Completion Team resumption of simulant procurement and analysis for mixing tests.

For the December EVMS reporting period, a net **favorable SV** of approximately **\$2.8 million** was reported, primarily due to the following:

- PT reported a net favorable SV of \$3.6 million, mostly related to deferral of technical teams erosion/corrosion scope due to FY 2017 funding constraints; test completion team resumption of simulant procurement and analysis, which had been scheduled in prior periods, and early plant equipment payment for a procurement for distribution panels, transformers, etc., which was scheduled for closure in April 2017.

- HLW reported a net favorable SV of \$0.1 million, tied to removal of the scope and budget for the Radioactive Liquid Waste Disposal System (RLD) mixing study since it was determined while completing the analysis of the RLD vessels, the process mixing study for the RLD vessels is no longer needed.
- LBL reported a net unfavorable SV of (\$0.9 million), resulting from delays in the carbon media testing technical subcontract; DFLAW mechanical support is behind as a result of procurement delays; LBL construction was impacted by delays in the temporary authorization permitting process and challenges with on-time pipe procurement; BOF startup and commissioning experienced delays in non-RLD testing and not receiving turnover of systems in the cooling tower and water treatment buildings.

Cost Variance Summary:

For the February EVMS reporting period, a net **favorable CV** of approximately **\$0.7 million** was reported, primarily due to the following:

- There were several weather-related site closure days. This resulted in a net favorable CV for level-of-effort type work, as the level-of-effort work is considered performed. Because employees did not actually work those days, the account was not charged for actual costs. The actual cost for the employees staying home was charged to other general distribution or overhead-type accounts in Project Services. With the primary crafts and trades not working, the support craft and personnel – which are also considered level-of-effort – did not work as well. This resulted in the facility-specific accounts reporting a net favorable CV, while the support accounts (i.e., Project Services) reported a net unfavorable CV.
- LBL reported a net favorable CV of \$2.0 million, resulting primarily from February weather-related closures. This was offset by additional engineering charges for revised PDSA work.
- HLW reported a net favorable CV of \$0.3 million, resulting primarily from February weather-related closures.
- PT reported a net favorable CV of \$0.2 million, resulting primarily from February weather-related closures. This was offset by technical teams' additional labor cost to complete the standard high-solids vessel (SHSV) design plant vessel structural analysis and scrubber trade study.
- Project Services reported a net unfavorable CV of (\$1.7 million), related to absorbing the general/other services weather-related site closures labor costs described in the above bullets.

For the January EVMS reporting period, a net **favorable CV** of approximately **\$5.2 million** was reported, primarily due to the following:

- LBL reported a favorable CV of \$4.1 million, primarily due to weather-related closures, delays, and holiday time-off impacts affecting work scheduled and earned, but not actualized or fully costed.

- HLW reported a favorable CV of \$0.7 million, primarily due to inclement weather closures, delays, and holiday time-off impacts.
- PT reported a favorable CV of \$0.5 million, primarily due to weather-related closures, delays and holiday time-off impacts.

For the December EVMS reporting period, a net **unfavorable** CV of approximately **(\$0.6 million)** was reported, primarily due to the following:

- Project Services reported a net unfavorable CV of (\$1.5 million) related to higher than expected General/Other services site closure costs. Procurement reported Other Direct Costs that should have been charged to other facilities (these costs will be corrected next month). Construction reported a labor overrun of six full-time equivalents and more relocation costs than anticipated during the current year. Integration, Startup, Completions, and Plant Operations reported an unfavorable CV due to a sales tax adjustment from prior years. These overruns were offset by engineering under-running the labor budget by about 12 full-time equivalents due to holiday and vacation time.
- LBL reported a net unfavorable CV of (\$0.2 million) for LBL Startup and Commissioning related to BOF and Management Suspension of Work that has impacted maintenance work. These overruns were partially offset by a labor underrun in LBL Support Functions, related to the holidays and WTP weather closures.
- PT reported a net favorable CV of \$0.7 million, tied to technical teams staff efficiencies for deliverables related to T4 (PJM vessel mixing and control) and reduced support from the national laboratories.
- HLW reported a net favorable CV \$0.3 million, primarily due to the inclement weather resulting in office and site delays/closures and increased use of paid time-off due to holidays, which favorably affects level of effort labor control accounts.

WTP Project Cumulative through February 2017

Through February 2017, the WTP Project is behind the planned work scheduled by approximately (\$44.5 million), but it has cost approximately \$77.2 million less to perform the work than originally estimated. The cumulative to-date schedule and cost variances are reported against the LBL/DFLAW Performance Measurement Baseline, while the HLW Facility, PT Facility, and Project Services variances are still being reported against an Internal Forecast, pending revised Baseline Change Proposals for those areas.

Pretreatment Facility

Federal Project Director: Bill Hamel

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, with engineering design 85 percent complete, procurement 56 percent complete, construction 43 percent complete, and startup and commissioning 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 as described in the Amended Consent Decree, which includes, “Ensuring Control of the Pulse Jet Mixers” (i.e., technical issue 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), while performing hazards analyses, and completing safety evaluations for process systems in accordance with the revised PT Facility Three-Year Interim Work Plan.

Work is also being performed to evaluate the facility design using the SHSV test design prototype (i.e., T6 in relation to design redundancy and in-service inspection); and evaluating vessel and equipment structural integrity (i.e., T7 in relation to seismic ground motion criteria changes around 2005).

Full-scale testing is ongoing and significant progress has been made in addressing the PJM controls and mixing issue. Test plans have been designed to demonstrate adequacy of the PJM control system and the vessel mixing to support resolution of PJM issues applicable to PT Facility vessels with high-solids concentrations and non-Newtonian slurries. Test results will be used to support the PT Facility redesign with the SHSV design. ORP continues to work with BNI to develop closure packages for each technical issue, defining work scope, required deliverables, and technical issue resolution criteria.

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

Accomplishments during the Reporting Period

- ORP has made significant progress regarding the WTP nuclear safety technical issues, “Preventing Potential Hydrogen Build-Up” and “Preventing Criticality,” as described in the Amended Consent Decree. In late January, the Acting Assistant Secretary for Environmental Management sent a letter and supporting documentation to the DNFSB Chairman regarding the status of these technical issues. The letter noted ORP and BNI have performed a comprehensive set of work activities since 2012, which provides ORP with sufficient confidence to direct resumption of design activities affected by these technical issues at the PT and HLW facilities.

- ORP briefed the DNFSB in late January on the status of the technical issues noted in the above bullet (i.e., T1 in relation to hydrogen gas events in vessels, T2 in relation to criticality in PJM vessels, and T3 in relation to HPAV). These technical issues have been sufficiently resolved to allow engineering to proceed in support of design and safety basis development. Design, control system changes, and safety basis updates associated with these resolutions will be implemented as part of the facility design process.
- ORP and BNI continued the testing of a proposed PJM SHSV design to replace a number of vessel designs in the PT Facility (this is in relation to resolving concerns over PJM vessel mixing and control [i.e., T4]). A prototype of the 16-foot-diameter SHSV was commissioned in December 2016. Testing is expected to be completed by December 2017 and will provide the required design and operations information to support PT Facility design.

Accomplishments Expected in the Next Three Months

- BNI will continue the erosion/corrosion synergistic test simulant qualification to determine the final recipe.
- BNI will continue full-scale testing of the SHSV design prototype, focusing on the PJM control system testing.
- BNI will continue the non-Newtonian blend testing at the National Engineering Technology Laboratory.
- As noted in the previous report, ORP and BNI will continue efforts to resolve the spray leak methodology and sliding bed wear issues identified by the DNFSB in its *26th Annual Report to Congress*, dated March 2016. Resolution of these issues is significant in supporting ORP's decision to resume production engineering at the PT Facility.
- BNI to issue an update to the localized corrosion test basis document.
- BNI to develop an engineering study documenting SHSV conceptual design functions and requirements in support of resolving issues in relation to design redundancy and in-service inspection (i.e., T6).

Issues Encountered during the Reporting Period

- PT Facility planned work has been reprioritized because of the need for additional resources to support DFLAW/LBL activities. This has resulted in limited work on technical issue resolution related to erosion/corrosion in piping and vessels and progression of the conceptual design of the SHSV test design prototype.
 - *Impact:* Delay in completing PT Facility redesign activities. However, the effect of reprioritizing planned PT Facility work is not anticipated to affect DOE's ability to achieve Consent Decree milestones at this time.
 - *Actions initiated or taken to address potential project schedule slippage:* Continue to discuss the funding needs for the WTP Project with DOE Headquarters, including the remaining technical issue resolution, and engineering, procurement, and construction work at the PT Facility.

Issues Expected in the Next Three Months

- PT Facility planned work could be reprioritized due to increased focus on higher priority DFLAW/LBL activities within WTP. This could result in limited work on technical issue resolution and conceptual design of the SHSV prototype.
 - *Impact:* The PT Facility redesign could be delayed. However, the effect of reprioritizing planned PT Facility work is not anticipated to affect DOE's ability to achieve Consent Decree milestones at this time.
 - *Actions initiated or taken to address potential project schedule slippage:* Continue to discuss the funding needs for the WTP Project with DOE Headquarters, including the remaining technical issue resolution, and engineering, procurement, and construction work at the PT Facility to ensure funds are made available.

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 the remaining technical issues, "Ensuring Control of the Pulse Jet Mixers, Protecting against Possible Erosion and Corrosion," (i.e., T4) and "Ensuring Ventilation Balancing" (i.e., T8).

ORP has worked with BNI to develop closure packages for each technical issue, defining work scope, required deliverables, and technical issue closure criteria. The status for each of the five technical issues as described in the Amended Consent Decree 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 HPAV that could lead to a hydrogen deflagration or detonation in a piping system (i.e., T3).
 - *Status:*
 - **Hydrogen in Vessels** – This technical issue has been sufficiently resolved to allow engineering to proceed in support of design and safety basis development.

As noted in the previous report, BNI provided an engineering study with supporting calculations to document the proposed hydrogen control strategy for vessels consisting of both preventive and mitigation controls. The analysis and calculations included the impact of decay heat, process changes, and assumptions on hydrogen generation rate and consequences. ORP completed a formal review of BNI's study, calculations, and proposed hydrogen controls; and solicited comments from DOE Headquarters and DNFSB staff. As a result of these reviews, additional calculations and analyses were added to the engineering study.

Based on the extensive analyses completed and documented in the engineering study, ORP considers the issue associated with hydrogen retention and control and heat transfer in PJM vessels to have been sufficiently resolved to allow engineering to proceed in support of design and safety basis development of the PT Facility using the hydrogen control strategies presented in the engineering study.

- HPAV – This technical issue has been sufficiently resolved to allow engineering to proceed in support of design and safety basis development.

Also noted in the previous report, BNI submitted the HPAV PDSA Change Package and supporting calculations to ORP for formal review and approval. ORP conducted its formal review of the HPAV PDSA Change Package and supporting documents; and solicited comments from DOE Headquarters and DNFSB staff on those documents. BNI developed a Basis of Design Change Notice and Safety Requirements Document Change Notice to confirm HPAV considerations are consistent with the PDSA Change Package. The combination of the HPAV PDSA, Basis of Design Change Notice, and Safety Requirements Document changes were approved in December 2016. These documents provide the basis to approve the path forward for HPAV design and nuclear safety basis development. 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 in a configuration that could result in an inadvertent criticality event (i.e., T2).
- *Status:* This technical issue has been sufficiently resolved to allow engineering to proceed in support of design and safety basis development.

- As noted in the previous report, ORP reviewed and approved the WTP Criticality Safety Evaluation Report with four conditions of approval. ORP also reviewed and accepted an engineering study evaluating the potential heavy plutonium particulates in the PT Facility design basis. DOE's Criticality Safety Support Group performed an independent review of the WTP criticality documentation and issued a report from its review. The criticality issue, as described in the Statement of Issue, has been extensively investigated and does not represent a credible hazard based on the proposed controls in the WTP Criticality Safety Evaluation Report and proposed strategy in the Criticality Safety Evaluation Engineering Study. Based on information noted above, ORP considers the criticality issue to have been sufficiently resolved to allow engineering to proceed in support of design and safety basis development.

- ***Ensuring Control of the PJMs:***

- *Issue:* Concern with adequacy of PJMs and PJM controls to adequately mix high-solids slurries in PT Facility process vessels (i.e., T4 [PJM vessel mixing and control]).

– *Status:*

- As noted in previous reports, BNI is conducting 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 continues.
- ORP and BNI have identified a new 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. This testing will demonstrate the required PJM control parameters and control approach to be used during the qualification of the design for the SHSV implementation. Testing is expected to be completed by December 2017 and will provide the required design and operations information to support completion of the PT Facility design.

• ***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 erosion/corrosion design basis, including margin, through testing and analysis (i.e., T5).

– *Status:*

- A testing program to provide the technical information to underpin the design basis for erosion and corrosion is being implemented.
- A WTP Basis of Design Change Notice establishing the erosion/corrosion basis of design parameters has been 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.
- Laboratory scale corrosion testing to assess localized corrosion material degradation mechanisms continues. This testing involves immersion of small metal samples in fluids representing anticipated WTP chemistries. Material degradation mechanisms being evaluated include pitting, crevice cracking, and stress cracking.
- Test platform shakedown of bench scale jet impingement test equipment apparatus continues. This test platform will be used to evaluate erosion wear from the impinging PJM jets in process vessels.
- A multi-mineral synergistic test simulant is being developed for the erosion testing. Selection and qualification of the simulant minerals is in progress.

- ***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 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 would 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 continues. 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 (NQA-1) qualification testing at Mississippi State University for all WTP normal and abnormal conditions. Based on the successful filter design that bounds all WTP normal and off-normal conditions, it was concluded that alternative filter designs and testing are not required. The final test report is expected to be issued in mid-2017.

High-Level Waste Facility

Federal Project Director: Bill Hamel

Facility Federal Project Director: Wahed Abdul

Work on the HLW Facility is being performed in accordance with the FY 2017– FY 2021 Interim Work Plan, although BNI is still working under a limited construction and procurement authorization.

As of September 2012, the HLW Facility was 62 percent complete overall, with engineering design 89 percent complete, procurement 81 percent complete, construction 43 percent complete, and startup and commissioning 4 percent complete. 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.

The WTP contractor is currently focusing its efforts on completing activities required to obtain full-production authorization from ORP. In addition, BNI has submitted a Facility Completion Plan for ORP review and approval identifying the strategy for completing engineering, procurement, and construction of the HLW Facility.

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

Accomplishments during the Reporting Period

- BNI incorporated ORP comments into the final HLW Facility Completion Plan and then submitted the plan to ORP for approval. The document provides the strategy, approach, and key deliverables required for ORP to authorize full release of procurement and construction of the HLW Facility. In addition, the plan provides the strategy for development of the revised performance baseline.
- BNI completed NQA-1 full-scale HEPA filter testing of the “Design 4” safe-change and remote-change filters to support the WTP ventilation and offgas needs.
- BNI submitted a revised HLW Facility PDSA Change Package, addressing the initial ORP-chartered Safety Basis Review Team comments. ORP is in the process of reviewing the document.
- BNI released material procurement and fabrication of RLD-7 and RLD-8. These vessels are located in the wet process cell and must be installed prior to concrete slab placement to support roof installation.
- BNI completed disposition of all design and operability (D&O) comments and began drafting the D&O final report.

Accomplishments Expected in the Next Three Months

- BNI to issue the final D&O report summarizing the path to disposition D&O issues on key HLW Facility mechanical and process systems.

- BNI will continue to design the remaining portions of the RLD system (Phase II).
- ORP to complete the review and comment resolution of the draft PDSA update.
- ORP to approve the HLW Facility Completion Plan.
- BNI to issue the reports associated with the full-scale testing and final selection of HEPA filters supporting the ventilation and offgas systems of HLW and LBL facilities.
- BNI to continue focusing on facility preservation and maintenance.

Issues Encountered during the Reporting Period

- HLW Facility planned work has been reprioritized because of the need for additional resources to support DFLAW/LBL activities. This has resulted in limited engineering assets to perform production work and 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. However, the effect of reprioritizing planned HLW Facility work is not anticipated to affect DOE's ability to achieve Consent Decree milestones at this time.
 - *Actions initiated or taken to address potential project schedule slippage:*
 - Continue to discuss the funding needs for the WTP Project with DOE Headquarters, including the remaining engineering, procurement, and construction work at the HLW Facility.
 - Evaluating funding alternatives and planning scenarios to define additional scope that could be performed if increased funding becomes available.

Issues Expected in the Next Three Months

- HLW Facility planned work could be reprioritized due to higher priority DFLAW/LBL activities within WTP. This could result in limited engineering and construction resources to perform production work.
 - *Impact:* The HLW Facility redesign activities could be delayed. However, the effect of reprioritizing planned HLW Facility work is not anticipated to affect DOE's ability to achieve Consent Decree milestones at this time.
 - *Actions initiated or taken to address potential project schedule slippage:* Continue to discuss the funding needs for the WTP Project with DOE Headquarters, including the remaining engineering, procurement, and construction work at the HLW Facility to secure funds are made available.

Low-Activity Waste Facility

Federal Project Director: Bill Hamel

Facility Federal Project Director: Jeff Bruggeman

As of February 2017, the LAW Facility was 60 percent complete overall, with engineering design 81 percent complete, procurement 75 percent complete, construction 84 percent complete, and startup and commissioning 9 percent complete.

Milestones associated with the commissioning of low-activity waste are on schedule.

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

Accomplishments during the Reporting Period

- BNI completed redesign of the melter jack-bolts as progress continues on completing the melters.
- BNI installed the steel caustic scrubber platform on the greater than the 48-foot elevation (i.e., EL+48).
- BNI received delivery of the final shipment of caustic scrubber internals and completed installation.
- BNI completed LAW Facility secondary offgas/vessel vent process system pipe tie-ins at caustic scrubber and thermal catalytic oxidizer.
- BNI completed base frame modifications on both melters.
- BNI installed and tested melter bubblers and completed welding on melter shield lids.
- BNI provided ORP with the draft LAW PDSA.
- BNI completed repairs for the LAW primary offgas system wet electrostatic precipitator vessel nozzle welds.
- BNI completed radiographic testing of wet electrostatic precipitator nozzles to verify adequacy of welds.
- BNI issued the 90 percent design review reports for the following:
 - C1 ventilation system (C1V)–C5 ventilation system (C5V)
 - Radioactive solid waste handling system
 - LAW melter handling system
 - LAW melter equipment support handling system
 - Carbon dioxide gas system
 - Plant cooling water system.

Accomplishments Expected in the Next Three Months

- ORP to evaluate preliminary hazard category calculation for low-activity waste.
- BNI to develop hazard identification checklist, what-if tables, and process hazard analysis events for accident scenarios to support PDSA update development.
- BNI to install C3V air conditioning unit for offgas exhausters on the greater than the 48-foot elevation (i.e., EL+48).
- BNI to reinstall wet electrostatic precipitator internals now that radiographic testing to verify adequacy of welds is complete.
- BNI to receive and install redesigned melter jack-bolts.
- BNI to receive grapples, thermocouple, and thermowells from vendors.
- BNI to place concrete for the caustic scrubber platform.
- BNI to start layout and assembly of cooling jackets for the LAW melter feed process vessels.
- BNI to perform initial system walkdowns for the following:
 - Chilled water system
 - Domestic (potable) water system
 - C1V.

Issues Encountered during the Reporting Period

- No new issues were encountered during the reporting period.

Issues Expected in the Next Three Months

- As noted in previous reports, an ongoing issue for the project has been the concern about how BNI has managed its commercial grade dedication (CGD) program.
 - *Impact:* This puts at risk some of the equipment purchased that performs a specific safety function in the LAW Facility. The consequence of identified CGD deficiencies are:
 - Material requisitions with vendors will need to be revised or re-established to incorporate the new CGD documentation and test requirements.
 - CGD plans produced by both vendors and WTP will be required to be updated; additional documentation and testing will be required to meet the updated CGD plans; where test results or documentation cannot demonstrate items meet the required critical characteristics, items will need to be repurchased to replace existing equipment.

- *Actions initiated or taken to address potential project schedule slippage:*
 - Additional personnel have been added to the CGD group to work on both WTP-generated and vendor-generated CGD packages to update the CGD plans and documentation to meet current customer expectations.
 - New staff and/or subcontractors have been added to provide subject matter expertise and oversight to enhance the CGD program.
 - Every effort will be made to qualify existing items to the new CGD plans. This may involve modifying existing requisitions or reopening closed material requisitions to upgrade the CGD plans and provide additional documentation and testing of items, or generating new material requisitions to purchase replacement equipment that cannot be qualified.
- Also noted in previous reports, nuclear safety documents being developed by BNI during the design phase PDSA and the scheduled activities for the final documented safety analysis are taking longer than planned.
 - *Impact:* Delay in DOE approval of the documented safety analysis could impact some early LAW Facility commissioning activities. However, the effects of the delay are not anticipated to affect DOE's ability to achieve Consent Decree milestones at this time.
 - *Actions initiated or taken to address potential project schedule slippage:* The project team has been hosting workshops with the nuclear safety teams from BNI and ORP to outline expectations and come to a common understanding of document development deliverables. ORP approved a PDSA Interim Change Package to reflect additional defense-in-depth structures, systems, and components and changes in safety-significant structures, systems, and components' safety functions and functional requirements.

Balance of Facilities

Federal Project Director: Bill Hamel

Facility Federal Project Director: Jason Young

As of February 2017, BOF was 64 percent complete overall, with engineering design 82 percent complete, procurement 80 percent complete, construction 90 percent complete, and startup and commissioning 24 percent complete. Design of the EMF was 80 percent complete.

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

BOF will provide services and utilities to support operation of the main production facilities: PT, HLW, LAW, and LAB. 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 the ongoing 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.

Accomplishments during the Reporting Period

- To accelerate the EMF design, BNI is self-performing the design of the EMF evaporator and will provide the required design information to the selected fabrication facility. BNI has received fabrication bids from multiple vendors and is working through the selection process.
- To reduce procurement risks and potentially improve the EMF construction schedule, BNI will be using bulk materials and selected large vessels originally planned for use in the PT Facility. ORP has authorized the transfer of four large vessels and the materials required for construction of the EMF evaporator.

- BNI completed placement of the EMF utility building basemat (approximately 1,000 yards) and placement of the EMF processing building basemat (approximately 3,000 yards) is in progress.
- BNI completed excavation of the low-point drain section of the EMF and is initiating rebar and form placement for the EMF low point drain basemat.
- BNI energized the low voltage electrical systems in the BOF switchgear facility with permanent power supplied by the WTP switchgear facility.
- BNI energized the NLD system and the water treatment facility with permanent site power from the BOF switchgear facility.
- BNI submitted the Class 2 permit for the DFLAW transfer lines. The public comment period is in progress and a public meeting will be held on May 3, 2017, to support the review.
- Startup testing activities for the de-ionized water and process service water systems in the water treatment facility are in progress.
- BNI completed the following fire protection design acceptance test plans:
 - Cooling tower facility
 - Switchgear building
 - Water treatment building.
- BNI completed the functional review of installation of the fire detection and alarm system fire detection equipment in the water treatment building (Building 86) and cooling tower facility (Building 83).

Accomplishments Expected in the Next Three Months

- The public comment period is in progress for the DFLAW waste transfer line permit and a public meeting is scheduled for early May 2017 to support the review.
- Placement of the EMF processing building basemat is in progress and will be followed by placement of the EMF processing facility stem walls.
- Repairs for the BOF switchgear medium-voltage transformers have been completed and BNI is preparing for energization of the transformers from the WTP switchgear facility. This will facilitate startup testing of the medium-voltage electrical system in the BOF switchgear facility.
- Continue startup testing activities in the NLD system and water treatment facilities.
- BNI to award EMF evaporator fabrication.
- BNI to formally submit EMF Underground Transfer Line Permit package to ORP.

Issues Encountered during the Reporting Period

- Delays occurring during startup and energization of the WTP switchgear have impacted the distribution of power to the rest of the BOF.
 - *Impact:* Delayed energization of BOF switchgear systems delayed power distribution to the NLD system facility, water treatment facility, and cooling tower facility.
 - *Actions initiated or taken to address potential project schedule slippage:*
 - Delays to the energized testing of the NLD and water treatment facility were initially mitigated via a temporary power supply until permanent low-voltage electrical power was available. However, the large electrical load of the cooling tower pumps requires energization from the medium-voltage electrical permanent power supply via Building 91.
 - Test procedure preparation is being prioritized.

Issues Expected in the Next Three Months

- BNI is experiencing delays in the system startup program due to aging and obsolescence of existing equipment, resource availability and previous inclement weather delays. In general, startup activities are linked together so when one activity is delayed it creates a waterfall affect. Delays in system turnovers and inadequate procedure preparation are slowing the startup testing process.
 - *Impact:* Delayed testing of interdependent BOF systems creates a cascading effect impacting testing in other facilities in BOF. However, the effect of the delays schedule are not anticipated to affect DOE's ability to achieve Consent Decree milestones at this time.
 - *Actions initiated or taken to address potential project schedule slippage:*
 - Production meetings are focusing on completion of outstanding work items.
 - Startup testing organization is introducing additional rigor into system reviews prior to turnover.
 - Test procedure preparation is being prioritized.
 - Working proactively with vendors to refurbish equipment.

Analytical Laboratory

Federal Project Director: Bill Hamel

Facility Federal Project Director: Jason Young

The LAB will support WTP operations by analyzing samples of waste feed, vitrified waste, and effluent streams from the WTP processing facilities. As of February 2017, the LAB was 63 percent complete overall, with engineering design 81 percent complete, procurement 88 percent complete, construction 95 percent complete, and startup and commissioning 16 percent complete.

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

Accomplishments during the Reporting Period

- BNI continued testing control and monitoring systems in the test engineer's workstation to support the NLD system functional tests.
- BNI finalized the C5V operating strategy for the LAB during DFLAW operations.
- BNI completed the fire detection and alarm system facility battery-drawdown fire protection acceptance test.
- BNI completed installation of the test engineer's workstation and turned equipment over to startup.
- BNI completed turnover of the fire protection water system in support of the test engineer's workstation to startup.
- BNI completed turnover of the process control system in support of the test engineer's workstation to startup.
- BNI continued final wall and floor coatings.
- BNI continued development of procedures for the WTP analytical methods.

Accomplishments Expected in the Next Three Months

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

Issues Encountered during the Reporting Period

- As noted in the previous report, there is a potential that the radioactive material handling hoods in the LAB, which are currently ventilated by the C3V system, may have C5V airborne contamination levels.
 - *Impact:* Modifications to the LAB hood ventilation may be required.
 - *Action initiated or taken to address potential project schedule slippage:* BNI is in the process of completing an engineering evaluation, which will close the condition report and associated risk to the baseline.

Issues Expected in the Next Three Months

None expected.

Written Directives

Written directives from January 1, 2017, through March 31, 2017, have been included with this report.

No written letters of direction were issued to WRPS during the reporting period.

Twenty letters of direction were issued to Bechtel National, Inc. during the reporting period. The letters are listed below and copies are attached:

- 16-WTP-0232, “U.S. Department of Energy, Office of River Protection Acceptance of 24590-PTF-ES-NS-15-003 Rev C, Proposed Control of Hydrogen Events in the Pretreatment Facility Pulse Jet Mixed Vessels,” dated January 24, 2017
- 17-CPM-0007, “Contracting Officer’s Response to Notification of H.1 Technical Direction-Analysis of the Extent of Condition of Audit Finding Related to Bechtel National, Inc. Commercial Grade Dedication Program,” dated February 6, 2017
- 17-CPM-0021, “Approval of Completion of Activity Milestone HLW-09, Set HEPA Filter Housings at Elevation 14 FT,” – dated February 23, 2017
- 17-CPM-0023, “Fully Executed 2016 Performance Evaluation and Measurement Plan Revision 2,” dated February 21, 2017
- 17-CPM-0028, “Request for Signature – Contract Modification No. 387,” dated February 22, 2017
- 17-CPM-0034, “Request for Signature – 2017 Annual Performance Evaluation and Measurement Plan Revision 1,” dated March 3, 2017
- 17-CPM-0037, “Transmittal of Contract Modification No. 387,” dated March 8, 2017
- 17-CPM-0038, “Transmittal of Contract Modification No. 388 - Revision to the Not-To-Exceed Value for the Funding Limitation Established in the Change Order for Updating the Natural Phenomena Hazards Assessment Previously Incorporated in Modification 375,” dated March 10, 2017
- 17-CPM-0039, “Potential Delay in 2016 Performance Evaluation and Measurement Plan Award Fee Determination,” dated March 9, 2017
- 17-CPM-0044, “Concurrence With Safety Strategy Summary Document for Low-Activity Waste Facility Process Streams and Sodium Hydroxide Reagent Hazards, and Transmittal of Associated Contract Modification No. 389 – Change Order for New Safety Controls Associated With Low-Activity Waste Facility Process Streams and Sodium Hydroxide Reagent Hazards,” dated March 24, 2017
- 17-NSD-0003, “The U.S. Department of Energy, Office of River Protection Transmittal of the U.S. Department of Energy Criticality Safety Support Group Report, *Review of Criticality Safety Issues at the Waste Treatment Plant* and Direction to Address Near-Term Issues,” dated February 16, 2017
- 17-WSC-0008, “Operations Requirements Document Change Notice,” dated March 6, 2017

- 17-WTP-0017, “Schedule Risk Maintenance,” dated February 16, 2017
- 17-WTP-0019, “Acceptance of Completion of Activity Milestone BOF-01, Receive Anhydrous Ammonia System,” dated February 16, 2017
- 17-WTP-0025, “Direct Feed Low Activity Waste Project Schedule Impacts due to Effluent Management Facility Permitting Delays,” dated March 15, 2017
- 17-WTP-0062, “Untimely Issuance of Apparent Cause Analysis on the Hydrotest Personal Injury Event – November 4, 2016,” dated March 21, 2017
- 17-WTP-0040, “Increased Rigor Associated With Earned Value Management System Baseline Change Process,” dated March 27, 2017
- 17-WTP-0044, “Notification of Completion of Activity Milestone Low-Activity Waste A-1, Install Caustic Scrubber Vessel,” dated March 22, 2017
- 17-WTP-0059, “Evaluation of Re-Purposing Pretreatment Equipment for use in the Effluent Management Facility,” dated March 28, 2017
- 17-WTP-0066, “Bechtel National, Inc. Notification of Performance for Implementation of Control Strategy Changes Associated with Low-Activity Waste Facility Melter Offgas Releases,” dated March 30, 2017.

Retrieval Labor Hours*Tank Farms Assistant Manager:* Glyn Trenchard*Federal Program Manager:* Jeff Rambo

Labor Hours Expended on Self Contained Breathing Apparatus
January–March 2017

	SCBA Direct Labor Hours	SCBA Subcontractor Hours ¹	Total SST Operation Hours	Total Hours ²	Total Percent on SCBA	Detrimental Impacts ³
C Farm	9,818	5,280	15,098	62,518	24%	26
A/AX Farm	5,516	9,360	14,876	53,597	28%	26
Total	15,334	14,640	29,974	116,115	26%	26

¹ Subcontractor hours include labor hours from subcontractors including North Point Electrical Contracting Inc., Geophysical Survey Inc., Fowler General Construction, American Electric, BNL Technical Services, and Intermech Inc.

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

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

SCBA = self-contained breathing apparatus.

SST = single-shell tank.

Spare Reboiler Requirement Status

Tank Farms Assistant Manager: Glyn Trenchard

Federal Program Manager: Paul Hernandez

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:

- DOE has provided WRPS with funding to design and procure the spare E-A-1 reboiler. DOE ORP authorized WRPS to proceed by awarding a not-to-exceed contract action.
- WRPS awarded a not-to-exceed design/build contract to ABW Technologies (ABW) for fabrication of a spare reboiler, with delivery prior to December 31, 2018.
- Design of the new spare 242-A Evaporator reboiler is ongoing with ABW. A finite element analysis associated with the reboiler is in the process of being performed. The bounding conditions associated with the finite element analysis model were provided to ABW from WRPS engineering. The commercial grade dedication plan submitted by ABW has been reviewed by WRPS engineering. Comments associated with the commercial dedication plan have been generated by WRPS and have been submitted back to ABW for disposition.
- WRPS and ABW are in the process of finalizing the design/fabrication schedule with associated with the new spare 242-A Evaporator reboiler.

Enclosure

(35 Pages Excluding Cover Sheet)

Written Directives from January 1, 2017, through March 31, 2017



OFFICE OF RIVER PROTECTION

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

JAN 24 2017

16-WTP-0232

Mr. J.M. St. Julian
Project Manager
Bechtel National, Inc.
2435 Stevens Center Place
Richland, Washington 99354

Mr. St. Julian:

CONTRACT NO. DE-AC27-01RV14136 – U.S. DEPARTMENT OF ENERGY, OFFICE OF RIVER PROTECTION ACCEPTANCE OF 24590-PTF-ES-NS-15-003 REV C, PROPOSED CONTROL OF HYDROGEN EVENTS IN THE PRETREATMENT FACILITY PULSE JET MIXED VESSELS

- References:
1. BNI letter from J.M. St. Julian to W.F. Hamel, ORP, "Resolution of Defense Nuclear Facility Safety Board (DNFSB) Concerns: Generation and Accumulation of Hydrogen in Pretreatment Facility Process Vessels and Heat Transfer," CCN: 272834, dated November 17, 2016.
 2. BNI letter from L.W. Baker to R. L. Dawson, "Contracting Officer Direction for Change to Technical Decision resolution Endpoint 1," CCN: 280338, dated October 27, 2015.

The U.S. Department of Energy, Office of River Protection (ORP) has reviewed and accepts the engineering study entitled *Proposed Control of Hydrogen Events in the Pretreatment Facility Pulse Jet Mixed Process Vessels*, transmitted via Reference 1. In addition, ORP accepts the preparation of an engineering study as compared to a preliminary documented safety analysis change package, as requested in Reference 2, as the appropriate document to support the resolution of the Pretreatment Facility technical issues associated with hydrogen generation and control in pulse jet mixed vessels.

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.

Mr. J.M. St. Julian
16-WTP-0232

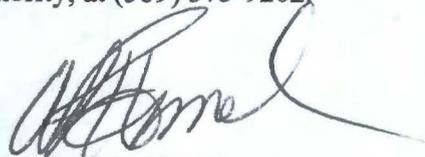
-2-

JAN 24 2017

If you have any questions please contact William F. Hamel, Assistant Manager/Federal Project Director, Waste Treatment and Immobilization Plant, at (509) 376-6727 or you may contact Langdon K. Holton, WTP Senior Technical Authority, at (509) 373-9202.



George F. Champlain
Contracting Officer



William F. Hamel
Assistant Manager, Federal Project Director
Waste Treatment and Immobilization Plant

WTP:LKH

Attachment

cc w/attach:
BNI Correspondence



OFFICE OF RIVER PROTECTION

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

FEB 06 2017

17-CPM-0007

Ms. L.W. Baker, Business Services Manager
Bechtel National, Inc.
2435 Stevens Center Place
Richland, Washington 99354

Ms. Baker:

CONTRACT NO. DE-AC27-01RV14136 – CONTRACTING OFFICER’S RESPONSE TO NOTIFICATION OF H.1 TECHNICAL DIRECTION-ANALYSIS OF THE EXTENT OF CONDITION OF AUDIT FINDING RELATED TO BECHTEL NATIONAL, INC. COMMERCIAL GRADE DEDICATION PROGRAM

- References:
1. BNI letter from L.W. Baker to R.L. Dawson, ORP, “Contract Clause H.1 Technical Direction – Analysis of Extent of Condition of Audit Finding Related to BNI Commercial Grade Dedication,” CCN: 293418, dated December 28, 2016.
 2. ORP letter from R.L. Dawson and K.W. Smith to M.G. McCullough, BNI, “Audit Report U-14-QAD-RPPWTP-003 – U.S. Department of Energy, Office of River Protection Audit of Bechtel National, Inc. Commercial Grade Dedication Program,” 15-QAD-0038, dated August 6, 2015.

The purpose of this letter is to provide Contracting Officer’s response to Reference 1, which states that technical direction has been provided that requires significant increase in document reviews. Reference 1 also requests Contracting Officer direction in accordance with the Notification of Changes clause of the contract.

In reviewing the attachment to Reference 1, Extent of Condition Plan for Review of CGD Documentation for RCA-MGT-00338 CA (24590-WTP-PL-ENG-16-003, Rev 0), the document did not provide the new work scope outside the release listed with Section J, Attachment J, Sub-Attachment C, Item No. 2 Commercial Grade Dedication (CGD).

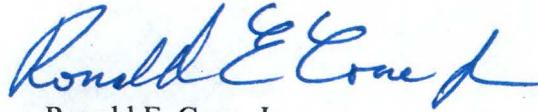
Therefore, in accordance with Contract Clause I.84, FAR 52.243-7 Notification of Changes (d) (4), I have determined that the information provided by Bechtel National, Inc., in the Reference 1 letter and attachments is inadequate. Once adequate information has been submitted for the changes needed for the CGD program/plans, and how these changes were required, I will provide an updated response to your notification. As such, it is requested that you provide updated and/or revised supporting information of the proposed changes due to CGD program/plans within 90 days of this letter.

Ms. L.W. Baker
17-CPM-0007

-2-

FEB 06 2017

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

A handwritten signature in blue ink that reads "Ronald E. Cone, Jr." with a stylized flourish at the end.

Ronald E. Cone, Jr.
Contracting Officer

CPM:REC

cc: BNI Correspondence



OFFICE OF RIVER PROTECTION

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

FEB 23 2017

17-CPM-0021

Ms. L.W. Baker, Business Services Manager
Bechtel National, Inc.
2435 Stevens Center Place
Richland, Washington 99354

Ms. Baker:

CONTRACT NO. DE-AC27-01RV14136 – APPROVAL OF COMPLETION OF ACTIVITY MILESTONE HLW-09, SET HEPA FILTER HOUSINGS AT ELEVATION 14 FT

- References:
1. BNI letter from L.W. Baker to R.L. Dawson, ORP, "Notification of Completion of Activity Milestone HLW-09, Set HEPA Filter Housings at Elevation 14 Ft.," CCN: 276225, dated August 25, 2016.
 2. BNI letter from L.W. Baker to R.L. Dawson, ORP, "Supplemental Information – Notification of Completion of Activity Milestone HLW-09, Set HEPA Filter Housings at Elevation 14 Ft.," CCN: 289767, dated October 26, 2016.

On August 25, 2016, Bechtel National, Inc. (BNI) notified the U.S. Department of Energy, Office of River Protection (ORP) that Activity Milestone HLW-09, "Set HEPA Filter Housings at Elevation 14 Ft." had been completed (Reference 1). BNI provided supplemental information on October 26, 2016 (Reference 2). ORP has reviewed the information provided and concurs that BNI has completed Activity Milestone HLW-09.

ORP approves completion of the milestone and authorizes BNI to invoice for the milestone completion fee of \$2,500,000. For tracking purposes, it is requested that a separate invoice be submitted for this milestone.

If you have any questions, please contact George F. Champlain, Contracting Officer, (509) 376-6678; or Wahed Abdul, Federal Project Director, High-Level Waste Facility, (509) 438-0455.

George F. Champlain
Contracting Officer

William F. Hamel
Assistant Manager, Federal Project Director
Waste Treatment and Immobilization Plant

CPM:GFC

cc: BNI Correspondence



OFFICE OF RIVER PROTECTION

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

FEB 21 2017

17-CPM-0023

Ms. L.W. Baker, Business Services Manager
Bechtel National, Inc.
2435 Stevens Center Place
Richland, Washington 99354

Ms. Baker:

**CONTRACT NO. DE-AC27-01RV14136 – FULLY EXECUTED 2016 PERFORMANCE
EVALUATION AND MEASUREMENT PLAN REVISION 2**

The purpose of this letter is to transmit one fully executed original of the subject Performance Evaluation and Measurement Plan. Revision 2 reflects changes resulting from the execution of Contract Modification 384, dated December 15, 2016.

If you have any questions, please contact me at (509) 376-6678.

A handwritten signature in blue ink that reads "George F. Champlain".

George F. Champlain
Contracting Officer

CPM:GFC

Attachment

cc w/attach:
BNI Correspondence



OFFICE OF RIVER PROTECTION

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

FEB 22 2017

17-CPM-0028

Ms. L.W. Baker, Business Services Manager
Bechtel National, Inc.
2435 Stevens Center Place
Richland, Washington 99354

Ms. Baker:

CONTRACT NO. DE-AC27-01RV14136 - REQUEST FOR SIGNATURE - CONTRACT
MODIFICATION NO. 387

The purpose of this letter is to transmit the subject modification for signature. This modification revises Contract Sections B, C, F, H, and J to correct editorial changes from Modification 384. Please sign and return two (2) originals of the attached contract modification to the Contracting Officer. An executed original of the contract modification 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.".

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

MAR 03 2017

17-CPM-0034

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 – 2017 ANNUAL
PERFORMANCE EVALUATION AND MEASUREMENT PLAN REVISION 1**

The purpose of this letter is to transmit the subject Performance Evaluation and Measurement Plan (PEMP) for signature. Please sign and return two (2) originals of the attached PEMP to the Contracting Officer. An executed original of the 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, (509) 376-6678.

A handwritten signature in blue ink that reads "George F. Champlain".

George F. Champlain
Contracting Officer

CPM:GFC

Attachment

cc w/attach:
BNI Correspondence



OFFICE OF RIVER PROTECTION

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

MAR 08 2017

17-CPM-0037

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. 387**

The purpose of this letter is to transmit an executed original of the subject modification. Contract Modification 387 revises Sections B, C, F, H and J. 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) 376-4427.

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

MAR 10 2017

17-CPM-0038

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. 388 – REVISION TO THE NOT-TO-EXCEED VALUE FOR THE FUNDING LIMITATION ESTABLISHED IN THE CHANGE ORDER FOR UPDATING THE NATURAL PHENOMENA HAZARDS ASSESSMENT PREVIOUSLY INCORPORATED IN MODIFICATION 375

The purpose of this letter is to transmit a signed original of Contract Modification No. 388. The modification increases the not-to-exceed (NTE) value for updating the Natural Phenomena Hazards Assessment by generating a revised site-specific response analysis and design response spectra for Waste Treatment and Immobilization Plant incorporating Hanford site-wide Probabilistic Seismic Hazard Analysis report from Pacific Northwest National Laboratory from \$400,000 to \$800,000 consistent with the other contract terms and conditions and pending definitization of this change.

Bechtel National, Inc. is requested to provide notification to the Contracting Officer at which time the total costs are expected to reach 75% of the NTE value as detailed in the enclosed contract modification.

If you have any project-related questions, please contact William F. Hamel at (509) 438-1176. For contract-related questions, 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

MAR 09 2017

17-CPM-0039

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

Mr. Binns:

**CONTRACT NO. DE-AC27-01RV14136 – POTENTIAL DELAY IN 2016 PERFORMANCE
EVALUATION AND MEASUREMENT PLAN AWARD FEE DETERMINATION**

- References:
1. BNI letter from L.W. Baker to R.L. Dawson, ORP, "2016 Performance Evaluation and Measurement Plan – Award Fee Objective 4B: Quality Documentation," CCN: 294011, dated December 9, 2016.
 2. ORP letter from W.F. Hamel to J.M. St. Julian, BNI, "U.S. Department of Energy, Office of River Protection Receipt of Award Fee Objective 4B: Quality Documentation," 17-QAD-0008, dated February 22, 2017.

The purpose of this letter is to notify Bechtel National, Inc. (BNI) that the award fee determination for the 2016 Performance Evaluation and Measurement Plan (PEMP) evaluation period may be delayed by up to three weeks beyond the current due date of March 26, 2017. Award Fee Objective (AFO) 4b: Quality Documentation, required BNI to identify eight safety-significant system components within 90 days of the effective date of the PEMP. The effective date of Revision 1 of the PEMP was February 9, 2016, making the information due on May 9, 2016. BNI did not provide the information until December 9, 2016 (Reference 1).

As stated in Reference 2, ORP will complete its evaluation by March 10, 2017 and use the results to support evaluation of the fee objective, and if necessary, request the documentation for two additional components for ORP review. Due to the ongoing review of AFO 4b, the award fee determination schedule will likely be impacted.

If you have any questions, please contact me at (509) 376-6678; or William F. Hamel Jr. (509) 376-6727.

A handwritten signature in blue ink that reads "George F. Champlain".

George F. Champlain
Contracting Officer

CPM:GFC

cc: BNI Correspondence



OFFICE OF RIVER PROTECTION

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

MAR 24 2017

17-CPM-0044

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 WITH SAFETY STRATEGY SUMMARY DOCUMENT FOR LOW-ACTIVITY WASTE FACILITY PROCESS STREAMS AND SODIUM HYDROXIDE REAGENT HAZARDS, AND TRANSMITTAL OF ASSOCIATED CONTRACT MODIFICATION NO. 389 - CHANGE ORDER FOR NEW SAFETY CONTROLS ASSOCIATED WITH LOW-ACTIVITY WASTE FACILITY PROCESS STREAMS AND SODIUM HYDROXIDE REAGENT HAZARDS

Reference: BNI letter from C.K. Binns to R.L. Dawson, ORP, "Submittal of 24590-LAW-PL-NS-16-0004, Rev. 0, for Review and Concurrence, and Contract Clause I.84 FAR 52.243-7 Notification of Changes for Control Strategy Changes," CCN: 295189, dated March 17, 2017.

The purpose of this letter is to:

1. Provide U.S. Department of Energy, Office of River Protection (ORP) concurrence with Bechtel National, Inc. (BNI) proposed safety controls associated with process streams and sodium reagent hazards in the Low-Activity Waste (LAW) Facility, as documented in 24590-LAW-PL-NS-16-0004, Rev. 0, *Safety Strategy Summary Document - Process Streams and Sodium Hydroxide Reagent Hazards* (Caustic SSSD), submitted to ORP for concurrence by the Reference.
2. Transmit a signed original of Contract Modification No. 389.

Contract Modification No. 389 directs BNI to proceed with engineering and nuclear safety activities necessary to implement the changes to engineered safety controls documented in the Caustic SSSD. This direction includes using the engineering redraft process to upgrade the outer piping of concentrate receipt process and melter feed process coaxial piping in areas outside of C5V ventilated rooms and secondary confinement, and upgrading the seismic

Mr. K.C. Binns
17-CPM-0044

-2-

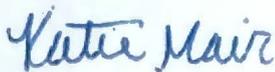
MAR 24 2017

classification of some of the sodium hydroxide reagent system piping from seismic category IV to seismic category III. The modification establishes a not-to-exceed value of \$159,672 for the change order. BNI is requested to provide notification to the Contracting Officer at which time the total costs are expected to reach 75 percent of the not-to-exceed value as detailed in the contract modification – Attachment 1.

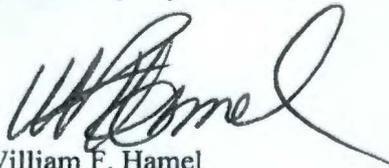
ORP concurrence on the Caustic SSSD is an important project risk mitigation step in the development of the LAW Preliminary Documented Safety Analysis (PDSA) change package. The Caustic SSSD documents a viable strategy for controlling or mitigating potential release of caustic hazards from LAW process streams and the LAW sodium hydroxide reagent system under various accident scenarios. ORP acknowledges BNI's position that hazard controls within the Caustic SSSD are new. ORP notes that defense-in-depth features for hydrogen explosions in the LAW concentrate receipt and melter feed systems had previously been approved in the LAW PDSA Rev. 6B.

Attachment 2 is a review comment record that documents understandings and conditions associated with the ORP concurrence, and identifies expectations for items that will be addressed in the future as the LAW PDSA is developed. Comments provided in the review comment record do not require a formal response, nor is BNI expected to update the SSSD to incorporate comments.

If you have any project-related questions, please contact William F. Hamel at (509) 376-6727. For contract-related questions, please contact Katie Mair at (509) 376-4427.



Katie A. Mair
Contracting Officer



William F. Hamel
Assistant Manager , Federal Project Director
Waste Treatment and Immobilization Plant

CPM:KAM

Attachments: (2)

cc w/attachs:
BNI Correspondence



OFFICE OF RIVER PROTECTION

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

FEB 16 2017

17-NSD-0003

Mrs. Margaret McCullough, Project Director
Bechtel National, Inc.
2435 Stevens Center Place
Richland, Washington 99354

Mrs. McCullough:

CONTRACT NO. DE-AC27-01RV14136 – THE U.S. DEPARTMENT OF ENERGY, OFFICE OF RIVER PROTECTION TRANSMITTAL OF THE U.S. DEPARTMENT OF ENERGY CRITICALITY SAFETY SUPPORT GROUP REPORT, *REVIEW OF CRITICALITY SAFETY ISSUES AT THE WASTE TREATMENT PLANT* AND DIRECTION TO ADDRESS NEAR-TERM ISSUES

- References:
1. 24590-WTP-CSER-ENS-08-0001, *Preliminary Co-Precipitated Plutonium Criticality Safety Evaluation Report for the WTP Project*, Rev. 1, February 25, 2016.
 2. 24590-PTF-ES-NS-15-002, *Pretreatment Criticality Safety Evaluation Engineering Study in Support of T2*, Rev. 2, April 21, 2016.
 3. 24590-WTP-Z0C-W11T-00018, *Validation of MCNP5 for Hanford Waste Criticality Safety Calculations*, July 29, 2010.
 4. ORP letter from K.W. Smith to M. McCullough, BNI, "Approval of Preliminary Co-Precipitated Plutonium Criticality Safety Evaluation Report for the Waste Treatment and Immobilization Plant Project, Revision 1," 16-NSD-0022, dated June 10, 2016.

The U.S. Department of Energy, Office of River Protection (ORP) Waste Treatment and Immobilization Plant (WTP) and Nuclear Safety Division transmit the attached U.S. Department of Energy Criticality Safety Support Group (CSSG) report, *Review of Criticality Safety Issues at the Waste Treatment Plant*. A brief review of the report's contents and actions to be taken are given below.

Introduction

ORP requested that the CSSG assess Bechtel National, Inc.'s (BNI) recent strategy for assuring criticality safety at WTP. This effort consisted of two discrete tasks, which were subsequently divided into subtasks to better focus the specific activities conducted during the review. The task statements associated with this review are:

- Task No. 1 – Evaluate WTP Co-Precipitated Critical Safety Evaluation Report (CSER)

Mrs. Margaret McCullough
17-NSD-0003

-2-

- Task 1.a: Review the recommendations and opportunities for improvement (OFI) associated with the WTP from previous assessments to determine if these have been properly addressed. The focus is to be primarily on the processing of the co-precipitated plutonium currently within the WTP Project scope.
- Task 1.b: Review and comment on the *Preliminary Co-Precipitated Plutonium Criticality Safety Evaluation for the WTP Project* (Reference 1) and associated technical support documents.
- Task No. 2 – Review Pretreatment Criticality Safety Evaluation Engineering Study in Support of T2
 - Task 2.a: Review the status and progress on the recommendations and OFIs from the Independent Review Team (IRT) report.
 - Task 2.b: Review the *Pretreatment Criticality Safety Evaluation Engineering Study in Support of T2* (Reference 2) and supporting documents and provide recommendations.

Discussion

Task 1.a had the specific purpose of identifying outstanding recommendations and OFIs associated with past reviews in an effort to streamline and bring current the existing criticality safety evaluation for the WTP. To that end, it was determined by the CSSG that 8 of the 16 outstanding recommendations and OFIs had been closed by revision to the CSER. Three OFIs were elevated to formal recommendations, leaving a total of six outstanding recommendations and two outstanding OFIs. The recommendations and OFIs are listed in Table 1.

Table 1. Existing Criticality Safety Support Group Recommendations. (2 pages)

Identifier	Recommendation/Opportunity for Improvement	Status
R-08-01	<i>Process assumptions relied on should be identified in the control section of the CSER.</i>	Closed
R-08-2	<i>The CSER should identify the need for clarity and robustness in the sampling program.</i>	Closed
R-08-3	<i>The CSER should identify required samples and location.</i>	Open
R-08-4	<i>Move key information from the CSER to AB documents and delete the CSER as a stand-alone AB document.</i>	Open
R-08-5	<i>Evaluate potential operational constraints due to uncertainties in the BBI data relating to combined uncertainties of fissile/absorber ratios.</i>	Closed
O-08-1	<i>The HAZOP should be updated with some periodicity and rolled into the CSER.</i>	Closed
O-08-2	<i>CSER should address the NCS consequence of a seismic event.</i>	Closed

Mrs. Margaret McCullough
17-NSD-0003

-3-

Table 1. Existing Criticality Safety Support Group Recommendations. (2 pages)

Identifier	Recommendation/Opportunity for Improvement	Status
O-08-3	<i>WTP should use guidance from the ANS 8 standards on nuclear poisons.</i>	Elevated
O-08-4	<i>Update the validation documentation with currently available benchmark experiments.</i>	Elevated
O-08-5	<i>Temperature effects on cross-sections and reactivity feedback coefficients should be evaluated and impacts considered for systems considerably different than room temperature.</i>	Open
O-08-6	<i>Basis should be provided for the stated 5% "non-representativeness" of samples.</i>	Elevated
O-08-7	<i>NCS staff should review technical basis for control schemes at other similar DOE facilities.</i>	Open
O-08-8	<i>Clarify the application of "double contingency" to facilities at which the accident is not considered credible.</i>	Closed
O-08-9	<i>WTP should consider the development of a technical document that addresses the chemical and process issues relied upon on the CSER.</i>	Closed
R-09-1	<i>The fundamental issue of the possible separation of nuclear poisons from fissile material raised by results of testing scale models of the WTP Pulse Jet Mixer, needs a resolution. The issue of heel removal from the mixing tank also needs resolution.</i>	Open
R-09-2	<i>The Pulse Jet Mixer testing also raises issues on the mixing tank sampling uncertainty assumptions in the WTP preliminary CSER. Further data is needed to determine a reasonable sampling uncertainty.</i>	Closed

Recommendations are identified using the following nomenclature:

R/O (Recommendation/OFI) — Original Review (by year) — Serial Number

Specific details and the basis for closure or nonclosure of each item is discussed in detail in the CSSG report.

Task 1.b had the purpose of establishing a current status of the most recent revision to the CSER for WTP. The CSSG review also included the facility criticality hazards analysis and the validation report (Reference 3) associated with the Monte Carlo simulations used to develop and support the CSER. This task concluded that the CSER and associated documents present an adequate safety basis for processing co-precipitated material, but they concur with ORP's position that considerable work needs to be accomplished to adequately document said safety basis. Consequently, seven new formal recommendations were presented for future action. These recommendations are listed in Table 2.

Mrs. Margaret McCullough
17-NSD-0003

-4-

Table 2. New Criticality Safety Support Group Recommendations for Co-Precipitated Solids.

Identifier	Recommendation	Status
R-16-1	<i>Define a process for tracking "open items" in the HA and how consistency will be maintained as both the HA and CSER are living documents.</i>	Open
R-16-2	<i>Use of sensitivity/uncertainty techniques to support the appropriateness of the selected benchmarks, particularly in cases where no additional margin for the AoA is utilized.</i>	Open
R-16-3	<i>Revise the validation report to meet all the requirements of ANS-8.24.</i>	Open
R-16-4	<i>Ensure the assumptions used in the CSER are properly categorized, and managed/controlled as applicable.</i>	Open
R-16-5	<i>Restructure Criticality Safety Limits to support understanding of the safety margin and assist with response to potential abnormal events.</i>	Open
R-16-6	<i>Apply or provide justification to exempt the analysis from ANS-8.14.</i>	Open
R-16-7	<i>Develop a CSER for the co-precipitated material that presents a better defined picture of the safety basis.</i>	Open
R-16-8	<i>Proceed with the HPP distribution test to provide a technical basis for including some of the distributed nuclear poison in the criticality safety basis.</i>	Open
R-16-9	<i>Consider potential management of HPP criticality safety concerns via addition of caustic boron.</i>	Open

Several of these recommendations fall directly in line with the previously-issued conditions of approval identified in ORP's Safety Evaluation Report (Attachment to Reference 4).

Task 2.a was a review of outstanding IRT recommendations, with the same purpose as Task 1.a. The review determined that two of the five outstanding recommendations were closed; three remain outstanding. The IRT recommendations are listed in Table 3.

Table 3. Existing Independent Review Team Recommendations.

Identifier	Recommendation	Status
R-IRT-1	<i>Proceed with the settling test, described in the report, to provide basis for including some of the distributed nuclear poison in the criticality safety basis.</i>	Open
R-IRT-2	<i>Assure that an adequate sampling capability is available so that the WTP Waste Acceptance Criteria is met before waste is accepted at Pretreatment.</i>	Open
R-IRT-3	<i>Assure a Pu heel management system is available.</i>	Open
R-IRT-4	<i>Provide a comprehensive Chemical Study to understand possible upsets which could affect the safety basis.</i>	Closed
R-IRT-5	<i>Provide a comprehensive Hazard Assessment.</i>	Closed

Specific details and the basis for closure or nonclosure of each item is discussed in detail in the CSSG report.

FEB 16 2017

Mrs. Margaret McCullough
17-NSD-0003

-5-

Task 2.b was a review of the criticality safety evaluation associated with heavy plutonium particulates (HPP) at WTP. An engineering study containing the details of the evaluation and other supporting documentation was reviewed by the CSSG. The CSSG generally agrees that the identified control strategy for HPP management has a reasonable chance of succeeding. However, the group feels that evaluation and exploration of some additional or alternative proposals for HPP control should be explored. In addition, two formal recommendations were provided by the group. The additional and alternative proposals are listed in Table 4, and the recommendations are listed in Table 5.

Table 4. Additional and Alternative Criticality Safety Support Group Proposals.

Identifier	Control Proposal
A-16-1	<i>Demonstrating by testing that hydraulic equivalence will preclude all of the HPP from settling independent of the co-precipitated material, thereby removing the hazard.</i>
A-16-2	<i>Consider sending HPP tank wastes directly to the High Level Waste (HLW) facility where there are no PJMs to loft and create the potential for larger masses to loft/settle in unfavorable geometries.</i>
A-16-3	<i>Consider the impact to criticality safety in PTF if caustic boron poisons are added at the Hanford Tank Farm (HTF).</i>
A-16-4	<i>Consider making a case under ANS-8.10 to demonstrate that the identified Pretreatment Facility criticality hazards are within the shielded part of the facility and an unlikely criticality accident would not result in a significant dose consequence to the co-located worker nor the public.</i>

Table 5. New Criticality Safety Support Group Recommendations for Heavy Plutonium Particulates.

Identifier	Recommendation	Status
R-16-8	<i>Proceed with the HPP distribution test to provide a technical basis for including some of the distributed nuclear poison in the criticality safety basis.</i>	Open
R-16-9	<i>Consider potential management of HPP criticality concerns via addition of caustic boron.</i>	Open

Specific details for each item is discussed in detail in the complete CSSG report.

Actions

The following actions are to be accomplished in response to the results of this report:

- In response to Item O-08-3, "WTP should use guidance from the ANS 8 standards on nuclear poisons," and Item R-16-6, "Apply or provide justification to exempt the analysis from ANS-8.14," BNI is directed to conduct an assessment on the incorporation of the ANS-8.14 standard into the existing criticality safety evaluations and criticality safety program description for WTP and report the results to ORP within 90 days.

Mrs. Margaret McCullough
17-NSD-0003

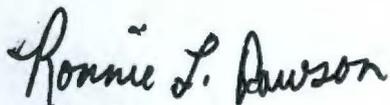
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- In response to Item O-08-3; Item O-08-4, "Update the validation documentation with currently available benchmark experiments;" and Item R-16-3, "Revise the validation report to meet all the requirements of ANS-8.24," BNI is directed to revise the validation report used for CSER development to meet the requirements of the ANS-8.24 standard and submit the report for review by ORP within 90 days.

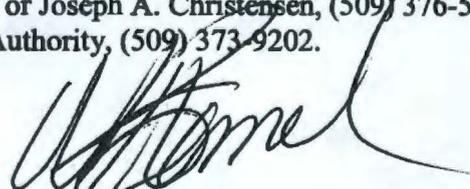
In response to the remaining outstanding recommendations and OFIs from Tables 1 through 3 BNI is directed to perform an evaluation of each item and make recommendations for implementation or nonimplementation, as appropriate. The evaluation results including justifications for each recommendation shall be incorporated into a plan for implementation that appropriately considers the current completion schedule for direct-feed low-activity waste. Presentation of the preliminary evaluation results will be made to ORP within 30 days. Final evaluation results and a final written plan containing a prioritized implementation schedule will be submitted to ORP for review within 60 days. The plan shall plainly identify and segregate the items that fall outside the existing contract scope.

ORP acknowledges that HPP material is currently outside the existing WTP Basis of Design. However, the review comments and recommendations from the CSSG report are technically valuable. Therefore, in response to the additional and alternative proposals and remaining recommendations from Tables 4 and 5 BNI is directed to document these comments such that a future revision of the criticality safety evaluation engineering study will include an evaluation of these comments. BNI is not directed to revise Reference 2 at this time.

If you have any questions, please contact me, or Joseph A. Christensen, (509) 376-5863, or Langdon K. Holton, WTP Senior Technical Authority, (509) 373-9202.



Ronnie L. Dawson
Contracting Officer



William F. Hamel
Assistant Manager, Federal Project Director
Waste Treatment and Immobilization Plant

NSD:JAC

Attachment

cc w/attach:
R.T. Brock, BNI
A.J. Dobson, BNI
F. Presti, BNI
J.M. St. Julian, BNI
BNI Correspondence



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MAR 06 2017

17-WSC-0008

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

Mr. Binns:

**CONTRACT NO. DE-AC27-01RV14136 – OPERATIONS REQUIREMENTS DOCUMENT
CHANGE NOTICE**

Reference: BNI letter from C.K. Binns to W.F. Hamel, ORP, "Contract Deliverable 3.4 – Operations Requirements Document (ORD) Change Notice 24590-WTP-ORDCN-OP-013," CCN: 276987, dated February 15, 2017.

The reference letter submitted an Operations Requirements Document (ORD) Change Notice for the U.S. Department of Energy, Office of River Protection (ORP) approval. The Change Notice corrects an inconsistency between the Basis of Design and the ORD regarding application of pneumatic testing for leakage in coaxial piping secondary lines. Consistent with the Basis of Design and Dangerous Waste Permit, pneumatic testing of secondary lines should only apply to underground coaxial lines. Testing in facilities is not feasible for coaxial lines that tie into containment bulges. All coaxial lines are required to have on-line primary containment leak detection capability. ORP approves the reference ORD Change Notice.

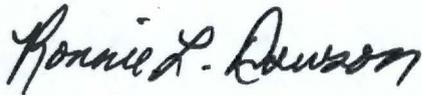
The action taken herein is considered to be within the scope of work of the existing contract and does not authorize the Contractor to incur any additional costs (either direct or indirect) or delay delivery to the Government. If the Contractor considers that carrying out this action will increase contract/project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

Mr. C.K. Binns
17-WSC-0008

-2-

MAR 06 2017

If you have any questions, please contact me, or you may contact Robert A. Gilbert, Division Director, WTP Commissioning Operations and Maintenance Division, (509) 376-2310.



Ronnie L. Dawson
Contracting Officer



William F. Hamel
Assistant Manager, Federal Project Director
Waste Treatment and Immobilization Plant

WSC:RAG

cc: I. Milgate, BNI
K. Wells, WTCC
BNI Correspondence



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FEB 16 2017

17-WTP-0017

Mrs. Margaret McCullough, Project Director
Bechtel National, Inc.
2435 Stevens Center Place
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Mrs. McCullough:

CONTRACT NO. DE-AC27-01RV14136 – SCHEDULE RISK MAINTENANCE

- References:
1. Joint Risk Management Team (JRMT) Meeting #81 Minutes, Prepared by R.S. Hajner to Distribution, CCN: 285806, dated January 13, 2016.
 2. BNI letter from L.W. Baker to R.L. Dawson, ORP, "BNI Transmittal of Associated Risk Deliverables to the Integrated LBL and DFLAW Change Proposal," CCN: 285453, dated January 28, 2016.
 3. Joint Risk Management Team (JRMT) Meeting #91 Minutes, Prepared by R.S. Hajner to Distribution, CCN: 285816, dated November 9, 2016.

Reference 2 provided Bechtel National, Inc. (BNI) the schedule risk assessment (SRA) for the integrated Low-Activity Waste (LAW) Facility, Balance of Facilities, Analytical Laboratory, and Direct Feed of LAW (collectively called LBL/DFLAW) baseline change proposal (BCP), which was used as part of the supporting basis for the recently approved federal LBL/DFLAW BCP to update the Project's Performance Baseline. References 1 and 3 are the Joint Risk Management Team meeting minutes for January 2016 and November 2016. These meeting minutes include the risk registers for the period they were issued. The Attachment to this letter shows a comparison of the risk registers and the risk changes which have occurred between the meetings. Without detailed analysis, a direct comparison of risk registers to derive potential impact to key milestones cannot be easily made. However, comparing summations of most likely values of schedule delay between the two periods shows a 300% increase in potential schedule threat.

Upon receipt of the SRA in Reference 2, a review of the SRA was conducted, led by the U.S. Department of Energy's (DOE), Office of River Protection, Project Controls Division (WPD), which resulted in several concerns at that time:

1. No narrative was provided on how individual risks were addressed in the SRA outside of three point estimates of best, most likely, and worst case durations. How the three point estimates tie back to risk sheets was not apparent;
2. Accepting the optimistic durations as the remaining activity duration over most likely activity durations was not realistic;
3. Setting the same duration for best, most likely, and worst case on some activities was not justified;

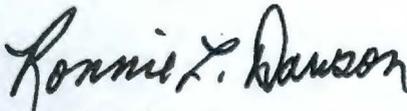
4. The SRA did not evaluate potential DOE risk impact; and
5. Event based risks which would require additional recovery activities (workaround solutions) were not identified.

Due to the significant increase in schedule threat and concerns with the initial SRA, BNI is directed to perform a new SRA on a yearly basis, starting the first week of March 2017, including the following enhancements:

1. Evaluation of all BNI (including current unassigned risk) and DOE risks starting with BNI and unassigned risks only and then with the addition of DOE risks;
2. Provide a narrative on how each risk was added to the schedule, i.e., which specific activity durations were modified, what workaround solutions were added, and explanations on how activity or groups of activities tie back to risk sheets;
3. Use most likely durations unless otherwise justified;
4. Provide an explanation in cases where best, most likely, and worst case duration estimates are all the same; and
5. If possible, provide options for schedule recovery.

Within 30 days from receipt of this letter, provide a briefing to WPD staff on BNI's approach to meeting this request. In addition, within 90 days from receipt of this letter, provide a briefing to WPD staff on how best to develop and track an integrated schedule covering the One System DFLAW scope for both TOC and WTP to include key interface milestones, and a recommended monthly reporting structure.

If you have any questions related to the SRA's, please contact Dennis Brown, WPD Director, Waste Treatment and Immobilization Plant, at (509) 376-4441.



Ronnie L. Dawson
Contracting Officer



William F. Hamel
Assistant Manager, Federal Project Director
Waste Treatment and Immobilization Plant

WTP:DCM

Attachment

cc w/attach:
BNI Correspondence



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FEB 16 2017

17-WTP-0019

Ms. L. W. Baker, Business Services Manager
Business Services
Bechtel National, Inc.
2435 Stevens Center Place
Richland, Washington 99354

Ms. Baker:

**CONTRACT NO. DE-AC27-01RV14136 – ACCEPTANCE OF COMPLETION OF
ACTIVITY MILESTONE BOF-01, RECEIVE ANHYDROUS AMMONIA SYSTEM**

- References: 1. BNI letter from L.W. Baker to R.L. Dawson, ORP, "Notification of Completion of Activity Milestone BOF-01, Receive Anhydrous Ammonia System," CCN: 291534, dated November 16, 2016.
2. BNI letter from L.W. Baker to R.L. Dawson, ORP, "Supplement to Notification of Completion of Activity Milestone BOF-01, Receive Anhydrous Ammonia System," CCN: 291535, dated December 9, 2016.

On November 16, 2016, Bechtel National, Inc. (BNI) notified the U.S. Department of Energy, Office of River Protection (ORP) that Activity Milestone BOF-01, "Receive Anhydrous Ammonia System" had been completed (Reference 1). ORP requested and received additional materials to supplement the initial submission (Reference 2). ORP has reviewed the information provided and concurs that BNI has completed the Activity Milestone BOF-01, "Receive Anhydrous Ammonia System."

ORP approves completion of the milestone and authorizes BNI to invoice for the milestone completion value of \$2,500,000. For tracking purposes, it is requested that a separate invoice be submitted for this milestone.

If you have any questions, please contact George F. Champlain, Contracting Officer, (509) 376-6678, Bill Hamel, Federal Project Director (509) 376-6727, or your staff may contact Jason Young, Federal Project Director, Analytical Laboratory and Balance of Facilities, (509) 376-0375.

George F. Champlain
Contracting Officer

William F. Hamel
Assistant Manager, Federal Project Director
Waste Treatment and Immobilization Plant

WTP:JDY

cc: BNI Correspondence



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MAR 15 2017

17-WTP-0025

Mr. C.K. Binns
Business Services Manager
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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 L.W. Baker to R.L. Dawson, ORP, "Notification of Impacts to Effluent Management Facility Due to Ecology Permitting Schedules in Accordance with Contract Clause I.84, FAR 52.243-7, Notification of Changes," CCN: 295181, dated January 25, 2017.
 2. BNI letter from L.W. Baker to R.L. Dawson, ORP, "BNI Response to Potential Direct Feed Low-Activity Waste Project Impacts Due to Effluent Management Facility Permitting Delays," CCN: 291537, dated January 6, 2017.

The U.S. Department of Energy, Office of River Protection (ORP), Waste Treatment and Immobilization Plant (WTP) Project understands and shares the Direct Feed Low-Activity Waste (DFLAW) project schedule impact concerns and has reviewed the information provided in the references above. As co-permittees for the WTP project, ORP and Bechtel National, Inc. (BNI) share a responsibility for communicating and working with the Washington State Department of Ecology (WADOE) in a manner that facilitates timely review and approval of permit documents. ORP has consistently communicated with the WADOE on every management level to stress the importance of timely permit review and approval. It is important to emphasize that the WADOE is an independent oversight organization representing the State of Washington. As such, they are not obligated by the permit review durations and other schedule assumptions in the WTP Contract.

On February 17, 2017, the WADOE has issued the Temporary Construction Authorization requested for the Effluent Management Facility (EMF). If BNI believes the schedule impacts discussed in the above equates to a contract change, BNI should submit a detailed account of the schedule impacts and the specific consideration requested within 30 days of the date of this letter. When quantifying the schedule impacts, BNI should account for any concurrent delays or delays in BNI readiness not directly attributable to the permitting process.

Mr. C.K. Binns
17-WTP-0025

-2-

MAR 15 2017

ORP has consistently worked with BNI to engage the WADOE and help identify opportunities for potential schedule improvements. In accordance with section H.53(b)(2) of the WTP Contract, 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 Joanne F. Grindstaff, Deputy Federal Project Director, Waste Treatment and Immobilization Plant at (509) 376-6202.



George F. Champlain
Contracting Officer



William F. Hamel
Assistant Manager, Federal Project Director
Waste Treatment and Immobilization Plant

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MAR 27 2017

17-WTP-0040

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

Ms. Irwin:

CONTRACT NO. DE-AC27-01RV14136 – INCREASED RIGOR ASSOCIATED WITH EARNED VALUE MANAGEMENT SYSTEM BASELINE CHANGE PROCESS

The U.S. Department of Energy (DOE), Office of River Protection (ORP), Waste Treatment and Immobilization Plant (WTP) Project is committed to the effective implementation of an Earned Value Management System (EVMS). Consistent with DOE Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*, Bechtel National, Inc. (BNI) applies an Electronic Industries Alliance Standard-748 (EIA-748) EVMS that ensures use of an integrated set of policies, procedures, and practices to objectively track true performance on the WTP Project. The BNI EVMS is based upon an integrated project management process that provides an early warning when performance problems occur and supports decision-making in the development of corrective actions to resolve variant conditions.

A compliant EVMS provides for the generation of timely, reliable, and verifiable performance data; permits the evaluation of progress; and allows for the calculated probability of meeting project and contractual requirements for cost, schedule, and authorized work scope. A key tenet of an effective EVMS is a disciplined and rigorous baseline revisions and data maintenance process that preserves the integrity of the WTP Project's Performance Measurement Baseline (PMB). Integrity of the PMB is critical to being able to predict when WTP facilities will be completed and provide a range of forecasted estimate-at-completions.

With the recent DOE approval of an incremental WTP Project Performance Baseline cost increase and schedule extension, along with the associated BNI contract modification, ORP is increasing expectations related to PMB changes and the BNI change control process. ORP is emphasizing the expectation that internal replanning should not be used as an alternative to proper initial planning, nor should it be used to mask legitimate variances.

MAR 27 2017

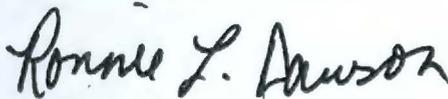
The two areas where increased rigor is expected, are as follows:

- All proposed baseline changes must clearly document the scope of work that is changing. The existing work scope must be presented along with the proposed scope change, and the rationale for the change. If the changed scope condition cannot be clearly documented and rationalized, then justification for a scope change does not exist. Baseline resource or schedule changes must not be approved without a documented scope change. If a particular element of approved work scope requires additional resources or more time, BNI should revise schedule and cost forecasts to capture the variances, and utilize the existing corrective action tracking process to mitigate project impacts, to the extent possible, without a baseline change.
- Historically, BNI has, at times, granted relief to impacted control accounts when an upstream control account does not perform consistent with an approved baseline plan. ORP is directing BNI to discontinue this practice. When any control account impact is encountered, all affected control accounts should attempt to implement corrective actions to mitigate as much variance as possible and not be granted relief through the baseline change control process.

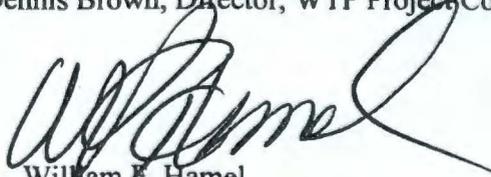
These ORP expectations associated with the baseline change process will result in increased transparency in managing the WTP Project PMB and will focus more effort on implementing corrective actions, rather than changing the baseline, when cost or schedule deviations are encountered.

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 Dennis Brown, Director, WTP Project Controls Division, at (509) 376-4441.



Ronnie L. Dawson
Contracting Officer



William F. Hamel
Assistant Manager, Federal Project Director
Waste Treatment and Immobilization Plant

WTP:DAB

cc: BNI Correspondence



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MAR 22 2017

17-WTP-0044

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

Mr. Binns:

**CONTRACT NO. DE-AC27-01RV14136 – NOTIFICATION OF COMPLETION OF
ACTIVITY MILESTONE LOW-ACTIVITY WASTE A-1, INSTALL CAUSTIC SCRUBBER
VESSEL**

Reference: BNI letter from C.K. Binns to R.L. Dawson, ORP, "Notification of Completion of Activity Milestone LAW A-1, Install Caustic Scrubber Vessel," CCN: 295770, dated February 14, 2017.

On February 14, 2017, Bechtel National, Inc. (BNI) notified the U.S. Department of Energy, Office of River Protection (ORP) that Activity Milestone A-1, "Install Caustic Scrubber Vessel," had been completed. ORP has reviewed the information provided and concurs that BNI has completed the Activity Milestone A-1, "Install Caustic Scrubber Vessel."

ORP approves completion of the milestone and authorizes BNI to invoice for the milestone completion value of \$4,275,000 minus provisional fee payments made to date. For tracking purposes, it is requested that a separate invoice be submitted for this milestone.

If you have any questions, please contact George F. Champlain, Contracting Officer, (509) 376-6678 or William F. Hamel, Federal Project Director, (509) 376-6727.

Handwritten signature of George F. Champlain in blue ink.

George F. Champlain
Contracting Officer

Handwritten signature of Joanne F. Grindstaff in black ink.

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

WTP:JMB

cc: BNI Correspondence



OFFICE OF RIVER PROTECTION

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

MAR 28 2017

17-WTP-0059

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

Mr. Binns:

**CONTRACT NO. DE-AC27-01RV14136 – EVALUATION OF RE-PURPOSING
PRETREATMENT EQUIPMENT FOR USE IN THE EFFLUENT MANAGEMENT
FACILITY**

Reference: BNI letter from L.W. Baker to R.L. Dawson, ORP, "Request to Re-Purpose Pretreatment Facility Equipment for Use in the Effluent Management Facility to Mitigate Impacts Due to Changes in Ecological Requirements," CCN: 293416, dated January 25, 2017.

The U.S. Department of Energy, Office of River Protection (ORP), Waste Treatment and Immobilization Plant Project has evaluated the technical, financial, and legal aspects of the proposed re-purposing of the following equipment (procured in fiscal years 2003 and 2004) originally allocated to the Pretreatment Facility (PTF), to the Effluent Management Facility (EMF).

1. Cesium nitric acid recovery process system evaporator (CNP-EVAP-00001)
2. Vessels PTF-HLP-VSL-0027 A and B
3. Vessels PTF-UFP-VSL-00002 A and B

ORP concurs with Bechtel National, Inc. (BNI) that reassigning the listed equipment from PTF to the EMF is in the best interest of the Government based on the current uncertainty in the design state of the PTF and the completion schedule for the EMF to meet the new Consent Decree milestone dates.

Although the provisions of 41 CFR Chapter 109, Subpart 43.50, "Utilization of Personal Property Held for Facilities in Standby," do not directly apply to the PTF, the determination to direct re-purposing of this equipment is consistent with the regulatory principles which provide for utilization of uninstalled equipment intended for a facility that is not in service elsewhere on site based on an evaluation of the circumstances. ORP has evaluated the circumstances,

Mr. C.K. Binns
17-WTP-0059

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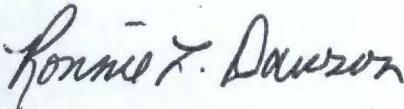
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including the new milestone dates for the PTF in the Consent Order, the current status of the Standard High Solids Vessel Design testing and the potential for design changes, and the opportunity to mitigate schedule impacts related to permitting for the EMF, and determined that it is appropriate to utilize the listed equipment for the EMF.

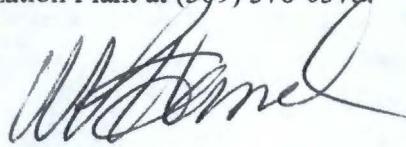
ORP concurs with BNI's recommendation to reassign the listed equipment from PTF Work Breakdown Structure (WBS) 1.01.00 to EMF WBS 1.07.72. The transfer will be documented using a Standard Form 122, Transfer Order of Excess Personal Property. PTF will be listed as the "Holding Agency" (Block 5) and the EMF as the "Ordering Agency" (Block 4) will document the transfer from PTF to EMF. The applicable WBS will be referenced for each facility in the respective Holding and Ordering Agency Blocks. ORP approval of the transfer will be documented by the ORP Property Administrator's signature in Block 14a of the form.

BNI shall brief the WTP Contracting Officer and Federal Project Director of any modifications made to the WTP baseline or internal forecast as a result of performing this equipment transfer.

If you have any questions, please contact Jason Young, Balance of Facilities Federal Project Director, Waste Treatment Plant and Immobilization Plant at (509) 376-0375.



Ronnie L. Dawson
Contracting Officer



William F. Hamel
Assistant Manager, Federal Project Director
Waste Treatment and Immobilization Plant

WTP:JDY

cc :
BNI Correspondence



OFFICE OF RIVER PROTECTION

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MAR 21 2017

17-WTP-0062

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

Ms. Irwin:

CONTRACT NO. DE-AC27-01RV14136 – UNTIMELY ISSUANCE OF APPARENT CAUSE ANALYSIS ON THE HYDROTEST PERSONAL INJURY EVENT – NOVEMBER 4, 2016

Reference: ORP letter from J.F. Grindstaff to J.M. St. Julian, BNI, "Reissue of Level 2 Assessment Report S-15-WPA-RPPWTP-036, Review of Bechtel National Inc.'s Actions to Address Condition Reports," 16-WTP-0014 (Reissued), dated June 17, 2016.

An Occurrence Reporting and Processing System reportable event causing personal injury to a Bechtel National, Inc. (BNI) worker occurred on November 4, 2016, at the U.S. Department of Energy, Office of River Protection (ORP) Waste Treatment and Immobilization Plant (WTP). The event occurred during hydrostatic and pneumatic testing on the plant cooling water system. BNI initiated condition report 24590-WTP-GCA-MGT-16-01752 to document this event on November 7, 2016, and generated a management suspension of work on November 8, 2016. BNI documented the event on Event Investigation Report 24590-WTP-FFR-SA-16-0031, which was signed by the event investigator on November 17, 2016.

BNI documented the beginning of an Apparent Cause Evaluation (ACE) on the Occurrence Reporting and Processing System reportable event on an ACE Pre-Job Brief form on November 22, 2016. The ACE Pre-Job Brief form included a target schedule to complete the ACE by December 12, 2016, and present it to the Integrated Project Improvement Review Board by January 15, 2017.

BNI did not maintain this schedule for completing the ACE on this event, and on February 16, 2017, BNI forecasted the completion of the ACE on February 27, 2017. As of the date of this letter (mid-March), BNI had still not completed the ACE. Due to the nature of the personal injury, ORP is concerned with the completion delay of the ACE and development of a corrective action plan (CAP).

Mr. J.M. St. Julian
17-WTP-0062

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MAR 21 2017

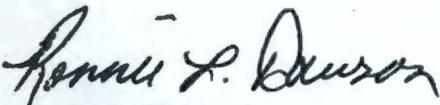
Please provide daily status to the ORP Safety and Health Division Director until the ACE and CAP have been finalized and transmitted to ORP.

The issue of untimely completion of cause analyses evaluations (i.e., both Root Cause Analysis and ACE investigations) appears to be ongoing. ORP identified the extremely untimely completion and issuance of root cause analysis for condition report 24590-WTP-GCA-MGT-16-00077 in ORP oversight activity S-15-WPA-RPPWTP-036, Priority Level 3 finding F02, transmitted via the Reference.

In an effort to address the ongoing issue of untimely completion and issuance of cause analysis evaluations, ORP directs BNI to establish performance indicators for the timeframe from beginning the cause analysis evaluation until completion and issuance. ORP directs BNI to track these performance metrics and report on BNI's performance to ORP management on a monthly basis.

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

If you have any questions, please contact me at (509) 376-6202.



Ronnie L. Dawson
Contracting Officer



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

WTP:CDT
cc: BNI Correspondence



OFFICE OF RIVER PROTECTION

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MAR 30 2017

17-WTP-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 – BECHTEL NATIONAL, INC. NOTIFICATION OF PERFORMANCE FOR IMPLEMENTATION OF CONTROL STRATEGY CHANGES ASSOCIATED WITH LOW-ACTIVITY WASTE FACILITY MELTER OFFGAS RELEASES

- References:
1. BNI letter from C.K. Binns to R.L. Dawson, ORP, "Contract Clause I.82 FAR 52.243-2 Changes – Cost Reimbursement – Notification of Performance for the Implementation of the Safety Strategy Summary Document for Low-Activity Waste Facility Oxides of Nitrogen / Melter Offgas Releases," CCN: 294930, dated March 16, 2017.
 2. ORP letter from R.L. Dawson and W.F. Hamel to L.W. Baker, BNI, "Concurrence with Safety Strategy Summary Document for Low-Activity Waste Facility Melter Offgas/Oxides of Nitrogen Releases," 16-WTP-0250, dated December 22, 2016.
 3. ORP letter from R.E. Cone to L.W. Baker, BNI, "Transmittal of Contract Modification No. 385 - Change Order for Partial Reclassification of the Low-Activity Waste Facility C5 Ventilation System To Safety Significant," 16-CPM-0174, dated December 22, 2016.

The U.S. Department of Energy, Office of River Protection (ORP) has received the Bechtel National, Inc. notification of performance, Reference 1, associated with implementing safety controls documented in the Safety Strategy Summary Document (SSSD) for oxides of nitrogen and melter offgas releases (NOx SSSD). ORP previously provided concurrence with the proposed safety control strategies in the NOx SSSD in Reference 2, and issued contract Modification 385, Reference 3, for the partial reclassification of the Low-Activity Waste (LAW) Facility C5 Ventilation system confinement boundary from non-safety to safety significant.

Mr. C.K. Binns
17-WTP-0066

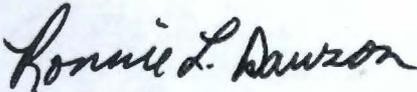
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MAR 30 2017

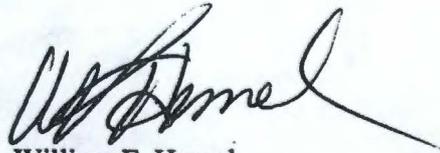
As previously stated in Reference 2, ORP does not have sufficient information to acknowledge the merit of any potential contract scope change associated with control strategy changes documented in the NOx SSSD, with the exception of the partial reclassification of the C5V system confinement boundary from non-safety to safety significant, addressed by the Contract change order, Reference 3.

ORP continues to support Bechtel National, Inc's proposed schedule mitigation actions to advance completion of the LAW Facility design and safety basis in support of LAW construction, startup, and commissioning.

If you have any project-related questions, please contact William F. Hamel at (509) 376-6727 or Jeff Bruggeman, LAW Facility Federal Project Director, Waste Treatment and Immobilization Plant at (509) 438-0444. For contract-related questions, please contact Ronnie L. Dawson at (509) 372-0098.



Ronnie L. Dawson
Contracting Officer



William F. Hamel
Assistant Manager, Federal Project Director
Waste Treatment and Immobilization Plant

WTP:JST

cc: BNI Correspondence