

PERFORMANCE EVALUATION AND MEASUREMENT PLAN

Incentive B – Award Fee

DESIGN, CONSTRUCTION, AND COMMISSIONING OF THE HANFORD TANK WASTE TREATMENT AND IMMOBILIZATION PLANT

CONTRACT NO. DE-AC27-01RV14136

Evaluation Period 2017
January 1, 2017, to December 31, 2017

Bechtel National, Inc.
Richland, WA

Rev. 1 – Effective February 28, 2017



Issued By:

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TABLE OF CONTENTS

LIST OF TABLES	I
LIST OF APPENDICES	I
1.0 AWARD FEE OBJECTIVES	1
1.1 EVALUATION PROCESS	1
1.2 INCENTIVE RATINGS AND DEFINITIONS	1
1.3 AWARD FEE OBJECTIVE 1: PROJECT PERFORMANCE (COST, SCHEDULE, AND EFFICIENCIES)	2
1.3.1 Project Cost and Schedule Performance	2
1.3.2 Construction Cost and Schedule Performance	4
1.4 AWARD FEE OBJECTIVE 2: ONE SYSTEM, STARTUP AND COMMISSIONING, AND ENGINEERING PERFORMANCE	5
1.4.1 One System	5
1.4.2 Startup and Commissioning	6
1.5 AWARD FEE OBJECTIVE 3: ENVIRONMENTAL, SAFETY, HEALTH, AND SAFETY CONSCIOUS WORK ENVIRONMENT	8
1.5.1 Environmental Permitting and Compliance	8
1.6 AWARD FEE OBJECTIVE 4: QUALITY ASSURANCE PROGRAM AND QUALITY OF PERFORMANCE	9
1.6.1 Objective 4a: Contractor Assurance System	9
1.6.2 Objective 4b: Actions to Address Significant Quality Assurance Issues	10
1.7 AWARD FEE OBJECTIVE 5: NUCLEAR SAFETY	11
1.8 AWARD FEE OBJECTIVE 6: PRETREATMENT FACILITY	12
1.9 AWARD FEE OBJECTIVE 7: HIGH-LEVEL WASTE FACILITY	14
2.0 PERFORMANCE EVALUATION AND MEASUREMENT PLAN GENERAL INFORMATION	16
ABBREVIATIONS AND ACRONYMS	21
REFERENCES	22

LIST OF TABLES

Table 1	Award Fee – Incentive Ratings and Definitions	1
Table 2	Award Fee – Fee Earnings Calculation	2

LIST OF APPENDICES

Appendix A Award Fee Rating Guide

1.0 AWARD FEE OBJECTIVES

This Performance Evaluation Measurement Plan (PEMP) contains the following seven award fee objectives:

1. Project performance (cost, schedule, and efficiencies)
2. One System, startup and commissioning, and engineering performance
3. Environmental, safety, health, and safety conscious work environment
4. Quality Assurance (QA) Program and quality of performance
5. Nuclear safety
6. Pretreatment (PT) Facility
7. High-Level Waste (HLW) Facility.

1.1 EVALUATION PROCESS

The U.S. Department of Energy (DOE), Office of River Protection (ORP) will evaluate and measure performance in each of the seven award fee objectives using the criteria in each objective. The evaluation will assign an adjectival rating and corresponding award fee earned to each award fee objective (see Table 1, “Award Fee – Incentive Ratings and Definitions”). The Fee-Determining Official (FDO) may consider any other pertinent factors in making a final fee determination.

1.2 INCENTIVE RATINGS AND DEFINITIONS

ORP will utilize Table 1 to rate performance. ORP will utilize a separate color-coded table (see Appendix A, “Award Fee Rating Guide”) for informal periodic evaluations. The final evaluation will reflect the adjectival rating scale in Table 2, “Award Fee – Fee Earnings Calculations.”

Adjectival Rating	Definition	Percentage of Award Fee Earned
Excellent	Contractor has exceeded almost all of the significant award-fee criteria and has met overall cost, schedule, and technical performance requirements of the contract in the aggregate as defined and measured against the criteria in the award-fee plan for the award-fee evaluation period.	91% to 100%
Very Good	Contractor has exceeded many of the significant award-fee criteria and has met overall cost, schedule, and technical performance requirements of the contract in the aggregate as defined and measured against the criteria in the award-fee plan for the award-fee evaluation period.	76% to 90%
Good	Contractor has exceeded some of the significant award-fee criteria and has met overall cost, schedule, and technical performance requirements of the contract in the aggregate as defined and measured against the criteria in the award-fee plan for the award-fee evaluation period.	51% to 75%

Adjectival Rating	Definition	Percentage of Award Fee Earned
Satisfactory	Contractor has met overall cost, schedule, and technical performance requirements of the contract in the aggregate as defined and measured against the criteria in the award-fee plan for the award-fee evaluation period.	≤ 50%
Unsatisfactory	Contractor has failed to meet overall cost, schedule, and technical performance requirements of the contract in the aggregate as defined and measured against the criteria in the award-fee plan for the award-fee evaluation period.	0%

Table 1. Award Fee – Fee Earnings Calculation.

	Award Fee Objective	Award Fee Available	Adjectival Rating	% of Award Fee Earned	Award Fee Dollars Earned
1	Project Performance (Cost, Schedule, and Efficiencies)	\$1,400,000			
2	One System, Startup and Commissioning, and Engineering Performance	\$1,400,000			
3	Environmental, Safety, Health, and Safety Conscious Work Environment	\$1,100,000			
4	Quality Assurance Program and Quality of Performance	\$1,200,000			
5	Nuclear Safety	\$1,300,000			
6	Pre-Treatment Facility	\$900,000			
7	High-Level Waste Facility	\$572,103			
	Total Award Fee (Period 2017)	\$7,872,103			

1.3 AWARD FEE OBJECTIVE 1: PROJECT PERFORMANCE (COST, SCHEDULE, AND EFFICIENCIES)

Award Fee Criteria:

- Project Performance
- Cost Performance and Efficiencies.

1.3.1 Project Cost and Schedule Performance

ORP will evaluate the contractor's cost and schedule performance based upon actual incurred costs compared to the total estimated costs of that work and actual schedule performance as compared to the planned schedule. The analysis of cost control performance will give consideration to changed programmatic requirements, changed statutory requirements, and/or changes beyond the contractor's control, which impact costs. ORP will rely on other objective and/or subjective cost and schedule performance elements, such as critical path and float

analysis, to evaluate the contractor's performance, which includes, but is not limited to the following:

- Contractor Assurance System – Project metrics represent accurate project performance and are used to monitor performance trends. Actions are taken based on performance trends to adjust project performance.
- Cost Control – The contractor maintains cost control (i.e., actual costs incurred for work performed are equal to or less than the estimated costs for that work) and actively pursues cost containment and reduction through innovative approaches and management of resources. Cost control will be monitored against the Performance Measurement Baseline (PMB) for the Low-Activity Waste (LAW) Facility, Balance of Facilities, and Analytical Laboratory (collectively referred to as LBL)/direct-feed low-activity waste (DFLAW), and against the internal forecast for the HLW/PT Facility and Project Services.
- Schedule Control – The contractor maintains an internal forecast schedule reflective of actual schedule performance, problem identification, and corrective action plans. These action plans are tracked for actual schedule performance. Contractor performance will also be evaluated using internal contractor planning documents and performance (e.g., meeting scheduled documented safety analysis development activities, quantity unit rate report, and engineering production rate report).
- Cost and Schedule Reporting – The contractor is proactive in assisting ORP with problem identification. Potential problems are identified, and corrective action is implemented to minimize cost/schedule impacts (e.g., meeting QA requirements while meeting schedule activity completions). The Government is notified immediately of significant problems, and the contractor interacts with the Government to develop viable resolutions and overcome delays.
- Communication – The contractor is expected to communicate clearly and effectively and in a timely manner for the reporting of data and metrics for project performance.
- Variiances – The contractor is expected to promptly take corrective action on negative cost and schedule variiances. Negative variiances are not expected to build but instead be mitigated effectively and with sound business practices.
- Risk Management – The contractor shall identify new threats, opportunities, and risk closures to demonstrate an effective risk program. Risks should be identified early to maximize risk mitigation and risks shall be managed, monitored, and risk mitigation effectiveness reported on for closed threats, open threats, and opportunities realized.
- Available Funding Utilization – The contractor is expected to optimize utilization of funds while planning for an appropriate amount of carryover to cover outstanding year-end commitments and to provide for the first few weeks of continuing operations into the next fiscal year.
- Earned Value Management System (EVMS) Indices, Including Cost Performance Index and Schedule Performance Index – The contractor is expected to effectively use EVMS in managing and reporting their project performance to ensure that actual progress is

reported compared to the PMB for LBL/DFLAW, and against the internal forecast for HLW/PT, and that sound management actions are taken when negative cost and schedule variances and/or cost overruns are projected.

- Baseline and Contract Alignment – The contractor shall work closely with ORP to maintain alignment between the baseline and the contract. The contractor shall submit quality and timely documents as required to support the alignment between the baseline and the contract and to support independent reviews.

1.3.2 Construction Cost and Schedule Performance

Award Fee Criteria: This performance measure evaluates construction performance as an indicator of the contractor's ability to achieve overall project cost goals. The ORP Waste Treatment and Immobilization Plant (WTP) reserves the right to consider any available information in making this evaluation. Performance considerations include:

- Overcome engineering/procurement/construction challenges, including effective management of emergent trends with proactive and early communication to ORP-WTP from initial identification of an issue through final closure.
- Focus on LAW Facility completion.

Focus on LAW Facility completion:

- Maintain focus on LAW Completion as evidenced by achieving Contract Milestones and complete LAW Facility construction to support timely system and facility turnover to startup. Construction quality is reflected in completed systems and testing results, and construction quality records are available and retrievable to support turnover to startup.
- LAW Facility construction nonconformance reports/construction deficiency reports, condition reports, and other issue items are adequately managed – issue closure packages are developed and implemented in a manner that does not delay turnover, records support issue closures, and long-lead resolutions are prioritized to support system and facility completion.
- LAW equipment is adequately maintained – maintenance is scheduled and completed in a timely manner in order to support turnover to startup; plans and materials are in place to support equipment refurbishment to support turnover; and spare parts, vendor information, vendor support is planned and available.
- Identify opportunities to reduce cost and streamline construction, as well as opportunities to improve efficiency by optimizing DFLAW scope.

Meet installation rates:

- Planned versus actual commodity and major equipment installation rates measured against the baseline for LBL and DFLAW only. HLW and PT will continue to work in accordance with the Internal Forecast.

- Subcontractor performance on all installation work performed on the WTP jobsite by Bechtel National, Inc. (BNI) subcontractors, including the efficient coordination of BNI engineering-supplied documentation and scheduling of work interfaces with BNI direct hire craft and other BNI subcontractors and timely resolution of nonconformance reports and interferences with a minimum amount of rework. Included in this metric is reporting of correct EVMS data and performance indices by the subcontractors.
- Demonstrate priorities and decision making aligned with critical path and float analysis (as demonstrated by monthly Critical Path and Milestones review), as well as metrics identifying performance against secondary metrics of early starts and early finishes against the PMB for LBL/DFLAW, and against the internal forecast for HLW/PT.
- Manage resources (e.g., direct-hire labor, subcontractor, and equipment and materials) available to support construction.
- Timely and consistent communication and reporting of data and metrics against the PMB for LBL/DFLAW, and against the internal forecast for HLW/PT, to identify and facilitate accurate evaluation of the quantitative reporting for Construction Technical Performance.
- Maintain management tools, such as P6 and the Bechtel Procurement System, so that accurate and complete information is flowing between engineering, procurement, and construction related to the construction need date and the supporting procurement process.

1.4 AWARD FEE OBJECTIVE 2: ONE SYSTEM, STARTUP AND COMMISSIONING, AND ENGINEERING PERFORMANCE

Award Fee Criteria:

- One System
- Startup and Commissioning
- Engineering Performance.

1.4.1 One System

Performance will be evaluated on progress in meeting the following strategic objectives:

- Establish a prioritized set of activities and timing to fully integrate tank farms, LAWPS, and WTP necessary to meet the contractual dates for startup and commissioning of WTP. Be responsible for coordinating, tracking, measuring, and reporting on these activities.
- Accurately track schedule performance and any schedule slippage for DFLAW Program.
- Recommend to ORP, Washington River Protection Solutions LLC, and BNI actions needed to more effectively or efficiently conduct the transition to startup, commissioning, and operations.
- Support the establishment of a long-term tank waste disposition integrated flowsheet stewardship and technical management process that involves the national laboratories. Performance will be evaluated against milestones planned for the award fee period that are established by One System.

- Support the integration of tank farms and WTP system planning and modeling, with a focus on the WTP feed vector and waste feed qualification requirements. This includes support for preparation for DOE review of the gaps, risks, opportunities management plan, and technology roadmap.
- Manage the WTP interface control documents.
- Drive down risk by finding opportunities such as partial system tests, and activations.
- Closely track the activities necessary for startup and commissioning DFLAW and advise the One System Governance Board of any significant risks for the Governance Board milestones defined for BNI.
- Coordinate the alignment of DOE orders between BNI and Washington River Protection Solutions LLC for those DOE orders, DOE directives and contract changes having a direct effect on completion of commissioning phase activities of the WTP. Establish an optimum or necessary time to have each item aligned.
- Ensure integration of plant installed and plant administration software systems between WTP and the Tank Operations Contractor in support of DFLAW startup and commissioning.

1.4.2 Startup and Commissioning

Turnover and startup:

- Definition and implementation of system and area turnover processes that are efficient and ensure systems are successfully turned over.
- Turnover from construction to startup completed with effective management of impacts from equipment aging or other adverse conditions that impact startup work performance. This excludes any issues that require energization and testing in order to discover.
- Successful turnover planning, preparation, acceptance, and testing of scoped systems – Water Treatment Building process service water system, domestic water system, and demineralized water system.
 - 5HBC10835B63, PSW-B-01, Component Testing (energized) complete (October 5, 2017).
 - 5HBC10834B67, DOW-B-01, Component Testing (energized) complete (July 31, 2017).
 - 5HBC10834B78, DIW-B-01, Component Testing (energized) complete (November 10, 2017).

System testing:

- Successful performance of component and initial system testing, to include review and approval of component test result packages for scoped systems consistent with the Startup Waterfall schedule data dated December 19, 2016.

- Preparation and approval of appropriate component and/or system test procedures to support upcoming testing in accordance with 24590-WTP-GPP-MGT-042 *WTP System Turnover*, and the baseline schedule. Completion of test matrices and test indices and associated test requirements and criteria prior to system turnover to Startup from Construction. This will include consideration of procedure quality and review timeliness.
- Initiate potable water service to the cooling tower (ICD-2) Activity ID No. 5HBC108200 (September 17, 2017).
- Initiate Liquid Effluent Services (ICD05C) Activity ID No. 5HBC108230 (May 7, 2017).
- NLD System Testing/Closeout and Turnover to Operations ID No. 5HBC108449 (May 27, 2017).

Commissioning and operations:

- Perform contractor integrated safety management system Phase 1 verification review in order to support the safe and successful turnover of the Water Treatment Building.
- Develop and issue the Balance of Facilities Readiness Plan (July 31, 2017).

Engineering performance:

Completion of design and construction:

- Completion of comprehensive LBL design reviews as scheduled. Performance of comprehensive LAW 90 percent design reviews – assess LAW design against contractual and safety requirements, identify and address any shortcomings, and document system acceptability in a retrievable manner; resulting in a valuable system and facility operational reference resource.
- Address LAW Facility design and operability (D&O) comments as evidenced by closure of remaining 11 open D&O issues and BNI support in DOE validation of remaining 253 D&O items.
- Procurement Package Development – Address past procurement issues and results in procurements that clearly specify requirements and ensures adequate oversight of important procurement submittals and activities. Acceptable quality to be demonstrated through use of existing Quality Engineering metrics for In-Process Document Review.
- Configuration Management – Maintain the newly developed technical requirements management system, including system design descriptions, and develops and maintains an adequate SmartPlant system to support LAW system turnover.
- Design Output – Issues adequate calculations and other design products that reflect acceptable quality; manage margin; control unverified assumptions; and adequately flows down requirements to calculations, drawings, specifications, data sheets, and procurement documents. Acceptable quality to be demonstrated through use of existing Quality Engineering metrics for In-Process Document Reviews.

1.5 AWARD FEE OBJECTIVE 3: ENVIRONMENTAL, SAFETY, HEALTH, AND SAFETY CONSCIOUS WORK ENVIRONMENT

Award Fee Criteria:

- Nuclear Safety and Quality Culture
- Integrated Safety Management
- Environmental Permitting and Compliance.

Performance will be evaluated on continuous improvement in these areas, which includes, but is not limited to:

- Have an effective safety conscious work environment and culture through implementation of programs and dissemination of expectations in order to establish a work environment in which employees feel free to raise safety concerns to management and/or a regulator without fear of retaliation.
- Conduct business in a manner fully transparent to ORP. Activities are demonstrated by open, clear, and well communicated management actions and technical and project documentation. Identified issues and trends are proactively shared with ORP.
- Foster a culture that rewards proactive self-identification and reporting of issues and proactively identify and takes action on systemic weaknesses leading to sustained continuous self-improvement.
- Implementation of work hazard analysis and controls resulting in (1) improving work injury/illness performance and (2) no unplanned employee exposures to work place hazards.
- Implementation of event investigation (e.g., review, cause analysis, and action implementation) resulting in effective organizational learning with the goal of eliminating recurring events and implementing quality corrective actions in a timely manner.
- Documented periodic management analysis of work site conditions and implementing strategies resulting in improving WTP Project safety.
- Implement a robust and effective integrated safety management program.

1.5.1 Environmental Permitting and Compliance

Performance will be evaluated on the contractor's programs for environmental stewardship and compliance. ORP will rely on subjective and objective evaluations of the contractor's performance in areas that include but are not limited to documentation and implementation of the contractor's environmental protection and compliance program including initiatives for continuous improvement, establishment of performance metrics and use in improving the environmental protection and compliance program, timeliness and quality (e.g., accuracy, completeness) of permit documents and compliance to permits and licenses, proactive assessment/evaluation program, and the number and seriousness of any findings or concerns

related to noncompliances or violations including the timeliness and quality of related reporting and responses.

- Submit permitting products with a high degree of quality on the initial submittal, requiring minimal rework and enable schedule efficiencies. Specific deliverables which will be evaluated are:
- Provide final EMF transfer line permit modification package to ORP for transmittal to the Washington State Department of Ecology.
- Provide final LAB operating permit modification package to ORP for transmittal to Ecology.
- Provide “first” final EMF process equipment permit modification package to ORP for transmittal to the Washington State Department of Ecology to support agency initiated modifications.
- Provide Environmental Performance Demonstration Test Plan to ORP.
- Provide final LDR Treatability Variance to ORP for transmittal to Ecology and EPA.

1.6 AWARD FEE OBJECTIVE 4: QUALITY ASSURANCE PROGRAM AND QUALITY OF PERFORMANCE

The QA Program and Quality of Performance Objective has been divided into two subparts. Objective 4a will evaluate the effectiveness of the Contractor Assurance System and Objective 4b will evaluate the contractor’s actions to address four significant quality issues. Performance will be judged based on the quality and timeliness of products and services produced during the reporting period and the overall effectiveness of the contractor’s assurance system to completely identify, track, correct, and communicate issues. The analysis of quality performance will also give consideration to the contractor’s ability to self-identify issues (e.g., nonconforming conditions, legacy issues, emerging negative performance trends) and correct negative performance trends before significant issues occur. In addition, the QA documentation supports the requirements needed for documented safety analysis approval. ORP will rely on objective and subjective evaluations of the contractor’s performance.

Award Fee Criteria:

- Contractor Assurance System
- Actions to Address Significant QA Issues.

1.6.1 Objective 4a: Contractor Assurance System

- Assessment Program – Rigorous, risk-informed, highly self-critical, credible self-assessments are conducted to identify issues and improvement opportunities by the line management. These self-assessments should demonstrate the line management’s self-critical commitment to quality. The assessment program should also include rigorous independent QA reviews that verify the line management’s achievement of quality. The target for measurement of effectiveness of both the self-critical assessments and the QA

independent assessments is that issues are identified and documented in the Corrective Action Management Program.

- Trend Analysis Program – Performance metrics are effectively used to provide an accurate picture of current quality performance against goals. Outcomes of the trend analysis program are leveraged to inform management (contractor and ORP) of emerging issues in a timely manner.
- Cause Analysis and Corrective Action – Performance gaps are identified and analyzed commensurate with their significance. Corrective actions are timely, prioritized by importance, and appropriately targeted to correct negative performance/compliance trends and prevent the development of significant issues. In the case of significant conditions adverse to quality, effective compensatory measures are implemented, the causes of the condition are determined in a timely manner and corrective action taken to preclude recurrence.
- Corrective Action Management System – BNI improvements are implemented to promote a proactive and effective corrective action program ensuring quality issues (including project peer reviews, other reviews, assessments and audits) are correctly identified, appropriately classified, rigorously investigated and resolved to mitigate recurrence.
- Feedback and Improvement – Continuous feedback and improvement, including worker feedback mechanisms are incorporated into the overall work process to measure the effectiveness of continuous improvement. Lessons learned and operational experiences are shared with others.

1.6.2 Objective 4b: Actions to Address Significant Quality Assurance Issues

Corrective actions to address the following areas will be evaluated during each review period to determine if BNI's actions have been completed as planned and whether completed corrective actions have been effective. Ongoing status shall be communicated to the ORP QA Division during the weekly interface meetings.

- Commercial Grade Dedication – BNI shall implement, document, and demonstrate an effective commercial grade dedication program in accordance with the contract and associated corrective action plan.
- Software QA Program – BNI shall implement the Corrective Action Plan for CR 16-00939-B. Actions in the CR develop the procedure for Software Requirements Traceability and validate existing ICN software. Metric is actions completed in accordance with the CAP schedule.
- QA Program Implementation – BNI shall complete actions necessary to close Priority Level 1 QA findings (U-13-QAT-RPPWTP-001-F01) (U-13-QAT-RPPWTP-001) and demonstrate that an adequate QA program has been effectively implemented.
- Procurement Program Improvements – BNI shall demonstrate effective procurement and property management policies and procedures. This includes subcontractor/vendor related nonconformance report/construction deficiency report identification and disposition processes, and back-charge processes to ensure the contractor is effectively

identifying and resolving nonconformances to support project priorities, schedule, and contract requirements.

1.7 AWARD FEE OBJECTIVE 5: NUCLEAR SAFETY

Award Fee Criteria:

Contract No. DE-AC27-01RV14136, *Design, Construction, and Commissioning of the Hanford Tank Waste Treatment and Immobilization Plant*, Section C, "Statement of Work," Standard 9 describes contractor requirements to ensure radiological, nuclear, and process safety. This work scope includes implementation of a standards-based safety management program in compliance with the rules provided in 10 CFR 830, "Nuclear Safety Management," on nuclear safety to ensure that WTP safety requirements are defined, implemented, and maintained.

Evaluation criteria to measure performance will include ORP's evaluation of the contractor's progress toward and compliance with contract requirements for nuclear safety performance. Progress will be evaluated against interim project schedules for nuclear safety submittals and supporting documentation (e.g., hazards analyses) with consideration of any emerging issues. Compliance will be evaluated against guidance found in DOE-STD-3009, *Preparation of Nonreactor Nuclear Facility Documented Safety Analysis*, CN 3 as well as all other contract requirements and clarifying direction from ORP.

ORP-WTP will consider any available information that bears on nuclear safety performance in making this evaluation. Documents to be considered include:

- Draft nuclear safety deliverables submitted for informal review possess a high degree of quality, and meet the requirements defined in the Implementation Plan for Contract No. DE-AC27-01RV14136, *Design, Construction, and Commissioning of the Hanford Tank Waste Treatment and Immobilization Plant*, Section C, Standard 9. Acceptable quality to be determined through use of existing Quality Engineering metrics for In-Process Documents.
- Progress toward interim project schedules and milestones while producing a high quality and compliant preliminary documented safety analysis (PDSA) for the LAW Facility
- Formally submit a high quality and compliant HLW Facility PDSA revision resolving gaps identified in the HLW safety design strategy/PDSA gap analysis
- Progress toward interim project schedules and milestones and completion of a compliant Analytical Laboratory PDSA to incorporate ORP technical direction and current hazard analysis processes
- Nuclear safety calculations and engineering studies developed to support resolution of technical issues will possess a high degree of quality and will meet the requirements defined in the Implementation Plan for Contract No. DE-AC27-01RV14136, *Design, Construction, and Commissioning of the Hanford Tank Waste Treatment and Immobilization Plant*, Section C, Standard 9 for submittal of draft documents for informal review. Effectiveness of the corrective actions resulting from the quality issues identified

in 16-NSD-0026, “Contract No. DE-AC27-01RV14136 – Low-Activity Waste Process Hazards Analysis Report Quality Issues”

- Incorporation of lessons learned from the submittal and approval of the initial EMF PDSA reflecting 30 percent design completion
- Effectiveness in self-identifying nuclear safety concerns early and responding to concerns raised both internally and by external stakeholders and review teams
- Formally submit the LAW Effluent Management Facility PDSA addendum to include comment disposition received from ORP on the draft submittal
- Successfully close all remaining Conditions of Acceptance as stated in the Safety Evaluation Report for the LAW PDSA Addendum for 30% design of the Effluent Management Facility
- Develop and issue the LAW criticality safety evaluation report (CSER)
- Revise and issue 24590-WTP-G04B-00022, Licensing Document; 24590-WTP-3DG-W10T-00001, WTP Nuclear Safety Analysis Design Guide; and applicable desktop instructions to address corrective actions resulting from quality issues identified in 16-NSD-0026, Contract No. DE-AC27-01RV14136 – Low-Activity Waste Process Hazards Analysis Report Quality Issues, and to provide clear guidance on the mutually agreed upon level of detail required for hazard analysis to support an approvable PDSA/DSA.

1.8 AWARD FEE OBJECTIVE 6: PRETREATMENT FACILITY

This award fee objective applies to the PT Facility program development and technical issues resolution activities as directed by ORP to support a return to production engineering.

Award Fee Criteria:

- Identified technical and testing deliverables are accomplished on schedule and within budget for the full scale pulse jet mixing (PJM) controls and mixing for the standard high-solids vessel (SHSV) test
- Provide recommendation for PT design concept with SHSV for Planning Areas 2, 3, and 4 in support of DOE decision for PT optimization
- Demonstrate effective project performance reporting consistent with ORP priorities and available funding
- Effectively utilize funding provided to complete the directed work scope
- Demonstrate an effective and integrated WTP program team approach for accountability, leadership, decision making, and ownership
- Maintain an effective, transparent, and integrated line of communication with ORP
- Proactively support ORP in completing and documenting the resolution of technical issues identified by the Defense Nuclear Facilities Safety Board.

Work activities and deliverables are completed on schedule:

- The contractor will ensure each deliverable is submitted on schedule as defined in the current Internal Forecast (IF).
 - Complete PJM control systems testing in SHSV design test phase 3 and complete all SHSV mixing tests by September 2017.
 - Execute the Joint Test Group approved run sheets for PJM controls testing in SHSV design. Tests are complete and data successfully acquired to achieve the test objectives described in the test plan (24590-WTP-ES-ENG-16-011 *Test Plan for Phase 3 PJM Controls Testing in the Standard High Solids Vessel Design (SHSVD-T Vessel)*) by September 2017.
 - Complete and approve the SHSV PJM control test reports by September 2017.
 - Complete PJM Qualification (Mixing) testing.
 - Submit a formal notification with results of successful qualification testing.
- Transmit completed alternate trade study with recommendation and rough order of magnitude cost aligned with the functional requirements and constraints for the PT design concept for Planning Areas 2, 3, and 4.
- Deliverables provided to ORP comply with the BNI/ORP predetermined quality criteria (e.g., completeness, clarity of presentation).
- Support resolution of Defense Nuclear Facilities Safety Board-identified issues on the WTP by completing required analyses, supporting interactions with the Defense Nuclear Facilities Safety Board, and preparing documentation to support the basis for issues resolution.

Manage project performance functions and tools consistent with DOE priorities and available funding:

- The contractor will consistently maintain project management function tools (e.g., cost and schedule reporting, change control, variance reporting, configuration management, risk management function, and procurements as relative to a baseline IF).
- Implement a robust and effective EVMS in managing project performance reporting to ensure that actual progress is reported compared to a baseline IF.
- Proactively identify new threats, opportunities, and risk closures resulting in an effective risk program.

Quality of deliverables meet the BNI/ORP predetermined quality criteria:

- The contractor will collaborate with ORP to fully define quality criteria for each product deliverable required by the contract and to meet requirements as identified by the WTP federal project director.
- Report progress during project area review briefings, weekly and monthly reports.

- Contractor will also submit quality and timely documents as required as defined in the baseline IF.

Effectively maintain an integrated approach to accountability, leadership, decision making, and ownership:

- The contractor will maintain an effective integrated approach and accept responsibility; accountability; leadership and decision making; and ownership for each defined pretreatment role, responsibility, and line of authority per the BNI organizational construct.

Maintain an effective integrated line of communication; sustain transparency:

- The contractor will be expected to communicate clearly and effectively to ORP WTP Project staff, current project deliverables on a weekly and monthly schedule.
- Conduct business in a manner fully transparent and documented.

1.9 AWARD FEE OBJECTIVE 7: HIGH-LEVEL WASTE FACILITY

This award fee objective applies to the HLW Facility activities performed in support of the full procurement and construction authorization planned to be accomplished by the end of calendar year 2017.

Award Fee Criteria:

- Management of D&O issue resolution and adequate condition report disposition and closure
- Effective implementation of the updated BNI processes and procedures ensuring sustained improved products
- Deliverables are responsive, timely, and meet the quality requirements
- Achieve full authorization of procurement and construction (Decision 2A)
- All of the requirements are met to resume full HLW engineering, procurement, and construction in 2017 in accordance with the HLW Facility Completion Plan.

Management of issue resolution and condition report closures:

- Submit a D&O summary report meeting ORP expectations for disposition of design comments

Effective implementation of the updated BNI processes:

- Demonstrate effective implementation of BNI processes by successfully shipping critical equipment with completed documentation packages
- Update and manage changes to design deliverables using updated design and nuclear safety processes (e.g., backward and forward passes)

- Ensure that design products align with system design descriptions and are documented in the requirements verification matrices
- Demonstrate effective implementation of the quality engineering program.

Deliverables are responsive, timely, and of high quality:

- Collaborate with DOE-ORP to fully define quality criteria for key deliverables
- Technical and management products are clear, comprehensive, and of adequate technical content withstanding the scrutiny of internal and external stakeholders
- Deliverables meet HLW Facility objectives on schedule.

Achieve full authorization of procurement and construction:

- BNI provides notification of completion of criteria for full authorization in accordance with the criteria described in the HLW Facility Completion Plan
- Receive DOE approval of the full authorization of procurement and construction (Decision 2A).

2.0 PERFORMANCE EVALUATION AND MEASUREMENT PLAN GENERAL INFORMATION

A. CONTRACT INCENTIVE FEE STRUCTURE

Contract No. DE-AC27-01RV14136 utilizes multiple, performance-based incentive fee components to drive contractor performance excellence in completing the design, construction, and commissioning of the WTP Contract.

The contract has the following incentive fee elements:

- Incentive Fee A – Final Fee Determination for Work Prior to Modification No. A143
- Incentive Fee B – Final Fee Determination for Work from Modification No. A143 and Modification No. 384
- Incentive Fee C – Fixed Fee Payment
- Incentive Fee D – Award Fee
- Incentive Fee E – LBL Construction Complete Performance Based Incentives
- Incentive Fee F – Commission LBL in the DFLAW Configuration Performance Based Incentive
- Incentive Fee G – CLIN 1.0 Cost Share Incentives
- Incentive Fee H – CLIN 2.1 DFLAW Design Completion Fee.

This PEMP covers Incentive D, which is updated annually. The fee administration terms and conditions of incentive fee elements A, B, C, E, F, G, and H are self-contained within Contract Section B, and thus, are not addressed in this PEMP.

The award fee provides a performance incentive for the contractor and gives the Government a tool to identify and reward superior performance. The amount of award fee the contractor earns is based on both an objective and subjective evaluation by the Government of the contractor's performance as measured against the criteria contained in this PEMP.

B. ROLES AND RESPONSIBILITIES

The award fee process utilizes a three-level system to ensure full and fair performance evaluation:

Level 1.0 – FDO

Level 1.1 – WTP Contracting Officer (CO)

Level 2.0 – Performance Evaluation Board (PEB)

Level 3.0 – Performance Evaluation Monitors (PEM).

2.1.1 Level 1.0 – Fee-Determining Official: Office of River Protection Manager

The FDO will:

- Review the recommendation of the PEB, consider all pertinent data, and determine the amount of award fee earned during each evaluation period
- Notify the contractor via the CO of performance strengths, areas for improvement, and future expectations
- Approve this PEMP and any significant changes thereto
- Authorize the CO to make the award fee payment.

Level 1.0 ensures independent, executive-level review of the work of the PEB and PEMs.

2.1.2 Level 1.1 – Waste Treatment and Immobilization Contracting Officer

The WTP CO will:

- Serve as a voting member of the PEB
- Issue the PEMP on an annual basis in accordance with Section B.8, “Award Fee Administration,” of the contract
- Ensure that the award fee and contract incentives process is managed consistent with applicable acquisition regulations
- Ensure that the award fee process meets the overall WTP business objectives
- Issue the award fee amount earned determination as authorized by the FDO in accordance with Section B.8.

2.1.3 Level 2.0 – Performance Evaluation Board

- WTP federal project director, Chair
- WTP deputy federal project director, field operations
- WTP CO
- Assistant Manager, Technical and Regulatory Support.

The PEB reviews the PEM evaluations of contractor performance, considers the contractor’s self-assessment if submitted, considers all information from pertinent sources, prepares draft and final performance reports, and arrives at an earned award fee recommendation to be presented to the FDO. The PEB may also recommend changes to this PEMP.

2.1.4 Performance Evaluation Board Chair

The PEB Chair will be the assistant manager/federal project director for WTP. The Chair will:

- Review the performance monitors’ evaluations and consider the contractor’s self-assessment

- Analyze the contractor’s performance against the criteria set forth in this PEMP
- Consider any additional relevant contractor performance
- Provide periodic interim performance feedback to the contractor via the CO
- Provide a recommendation to the FDO on the award fee scoring and the amount earned by the contractor
- Recommend any changes to this PEMP.

2.1.5 Level 3.0 – Performance Evaluation Monitors:

PEMs will consist primarily of WTP sub-federal project directors and ORP division directors. The PEMs will:

- Monitor, evaluate, and assess contractor performance in their assigned areas
- Periodically prepare a contractor performance monitor report for the PEB and recommend verbal performance input as well
- Recommend any needed changes to this PEMP for consideration by the PEB and FDO
- Maintain a performance dialogue with their respective BNI counterparts throughout the evaluation period.

C. PROCESS

The total available award fee for the 2017 evaluation period is \$7,872,603.

In accordance with FAR 16.401(e)(3)(v), the contractor is prohibited from earning any award fee when the contractor’s overall cost, schedule, and technical performance is below satisfactory.

D. PROVISIONAL FEE

Provisional fee requirements in Contract Section B, Clause B.8 (g), “Provisional Payment of Fee,” apply to this PEMP. The clause paragraphs are restated below for emphasis:

(g)(3)(vi) Provisional payment of fee for an incentive means the Government’s paying available fee for an incentive to the Contractor for making progress towards meeting the performance measures for the incentive before the Contractor has earned the available fee.

(g)(3)(vii) Provisional payment of fee has no implications for the Government’s eventual determination that the Contractor has or has not earned the associated available fee. Provisional payment of fee is a separate and distinct concept from earned fee.

(g)(6) The Contracting Officer, at his/her sole discretion, will determine if the Contractor has met the requirements under which the Government will be obligated to pay fee, provisionally, to the Contractor and for the Contractor to have any right to retain the provisionally paid fee.

(g)(7) If the Contracting Officer determines the Contractor has not met the requirements to retain any provisionally paid fee and notifies the Contractor, the Contractor must return that provisionally paid fee to the Government within 30 days:

(i) the Contactor's obligation to return the provisional paid fee is independent of its intent to dispute or its disputing the Contracting Officer's determination; and

(ii) if the Contractor fails to return the provisionally paid fee within 30 days of the Contracting Officer's determination, the Government, in addition to all other rights that accrue to the Government and all other consequences for the Contractor due to the Contractor's failure, may deduct the amount of the provisionally paid fee from: amounts it owes under invoices; amounts it would otherwise authorize the Contractor to draw down under a Letter of Credit; or any other amount it owes the Contractor for payment, financing, or other obligation.

(g)(8) If the Contractor has earned fee associated with an incentive in an amount greater than the provisional fee the Government paid to the Contractor for the incentive, the Contractor will be entitled to retain the provisional fee and the Government will pay it the difference between the earned fee and the provisional fee.

Provisional fee procedures:

The Government and the Contractor will meet monthly to review the Contractor's performance against the PEMP criteria. Subsequent to each monthly meeting and pending satisfactory performance, the Contractor is authorized to invoice for provisional fee once per month, at a rate of \$328,025 per month (calculated as one-twelfth of 50 percent of the \$7,872,603 maximum annual available PEMP fee). However, the Contracting Officer may reduce the amount in accordance with Section B, Clause B.8 (g) Provisional Payment of Fee.

In the event that fee overpayment results from the provisional fee payments provided for in this section exceeding the earned fee, as determined by the FDO, the contractor shall reimburse the unearned fee overpayment within 30 days of notification to the CO.

E. CONTRACTOR SELF-ASSESSMENT

Contract Section B, Clause B.8 states:

Following each evaluation period, the Contractor may submit a self-assessment, provided such assessment is submitted within ten (10) calendar days after the end of the period. This self-assessment shall address both the strengths and weaknesses of the Contractor's performance during the evaluation period. Where deficiencies in performance are noted, the Contractor shall describe the actions planned or taken to correct such deficiencies and avoid their recurrence. The Contracting Officer will review the Contractor's self-assessment, if submitted, as

part of its independent evaluation of the Contractor's management during the period.

F. METHOD FOR CHANGING THE PERFORMANCE EVALUATION AND MEASUREMENT PLAN DURING THE EVALUATION PERIOD

Proposed changes to the current period PEMP may be initiated by either ORP or the contractor. Proposed changes shall be in writing. Both ORP and the contractor must agree to any changes. Once agreement is reached, the FDO and contractor representative will sign the revised PEMP. The revision number (e.g., Rev. 1) will be noted on the PEMP. Subsequently, the revised PEMP will be incorporated into the contract by reference via contract modification.

ABBREVIATIONS AND ACRONYMS

BNI	Bechtel National, Inc.
CLIN	Contract Line Item Number
CO	contracting officer
DFLAW	direct-feed low-activity waste
DOE	U.S. Department of Energy
D&O	design and operability
EMF	Effluent Management Facility
EVMS	Earned Value Management System
FDO	Fee-Determining Official
HLW	high-level waste
IF	Internal Forecast
LAW	low-activity waste
LBL	low-activity waste, balance of facilities, analytical laboratory
ORP	U.S. Department of Energy, Office of River Protection
PDSA	preliminary documented safety analysis
PEB	Performance Evaluation Board
PEM	performance evaluation monitor
PEMP	Performance Evaluation Measurement Plan
PJM	pulse jet mixing
PMB	Performance Measurement Baseline
PT	pretreatment
QA	quality assurance
SHSV	standard high-solids vessel
WTP	Waste Treatment and Immobilization Plant

REFERENCES

- 10 CFR 830, "Nuclear Safety Management," *Code of Federal Regulations*, as amended.
- 16-NSD-0026, 2016, "Contract No. DE-AC27-01RV14136 – Low-Activity Waste Process Hazards Analysis Report Quality Issues" (external letter to M. McCullough, Bechtel National, Inc.), from W.F. Hamel, U.S. Department of Energy, Office of River Protection, Richland, Washington, June 23.
- 24590-WTP-ES-ENG-16-011, 2016, , *Test Plan for Phase 3 PJM Controls Testing in the Standard High Solids Vessel Design (SHSVD-T) Vessel*, Bechtel National, Inc., Richland, Washington, September 29.
- 24590-WTP-GPP-MGT-042, 2014, *WTP System Turnover*, Bechtel National, Inc., Richland, Washington, October 30.
- Contract No. DE-AC27-01RV14136, *Design, Construction, and Commissioning of the Hanford Tank Waste Treatment and Immobilization Plant*, U.S. Department of Energy, Washington, D.C., as amended.
- DOE-STD-3009, 2014, *Preparation of Nonreactor Nuclear Facility Documented Safety Analysis*, DOE Standard, U.S. Department of Energy, Washington, D.C., November.
- FAR 16.401, "Incentive Contracts," "General," *Federal Acquisitions Regulations*, as amended.
- U-13-QAT-RPPWTP-001, 2013, *BNI Quality Assurance Program Requirements 3, 4, 7, 8, 15, and 16*, U.S. Department of Energy, Office of River Protection, Richland, Washington, October 28.

**APPENDIX A
AWARD FEE RATING GUIDE**

Appendix A. Award Fee Rating Guide. (2 pages)

	OBJECTIVE ITEMS	SUBJECTIVE ITEMS
Dark Blue "Excellent" Performance	<ul style="list-style-type: none"> Objective measures are achieved on or ahead of time Very high probability of achieving the outcome Meeting all cost, scope, and schedule objectives Very high degree of transparency 	<ul style="list-style-type: none"> 100% of key areas meeting requirements 100% of key deliverables will be met on time 90% of sub or supporting areas are performing very well No safety, security, or quality issues of note Very high degree of self-identification and reporting deficiencies Very high degree of transparency Strong ISMS practices, timely reporting, critiqued/EOC whenever needed
Light Blue "Very Good" Performance	<ul style="list-style-type: none"> Objective measures expected to be achieved on time Very good probability of achieving the outcome Expect to meet cost, scope, and schedule objectives High degree of transparency 	<ul style="list-style-type: none"> 100% of key areas meeting or close to meeting requirements 100% of key deliverables are meeting or expected to meet requirements Majority of sub or supporting areas are performing very well At most minor safety, security, or quality issues of note High degree of self-identification and reporting deficiencies High degree of transparency Strong ISMS practices, timely reporting, critiqued/EOC whenever needed
Green "Good" Performance	<ul style="list-style-type: none"> Objective measures reasonably expected to be achieved on time Reasonable probability of achieving the outcome Expect to meet or be very close to cost, scope, and schedule Good degree of transparency 	<ul style="list-style-type: none"> Almost all key areas meeting or close to meeting requirements Majority of key deliverables are satisfactory or better Majority of sub or supporting areas are performing satisfactorily Mostly minor safety, security, or quality issues of note Good degree of self-identification and reporting deficiencies Good degree of transparency Infrequent deviation in ISMS practices, timely reporting, critiqued/EOC reviews

Appendix A. Award Fee Rating Guide. (2 pages)

	OBJECTIVE ITEMS	SUBJECTIVE ITEMS
<p>Yellow “Underperforming” “Needs improvement” “Elevated risk”</p>	<ul style="list-style-type: none"> Elevated risk of objectives not being achieved on time Reasonable probability of not achieving the outcome Expect to not meet cost, scope, or schedule Partial degree of transparency 	<ul style="list-style-type: none"> Majority key areas meeting or close to meeting requirements Notable percentage of key deliverables are satisfactory or better Notable percentage of sub or supporting areas are performing satisfactorily Occasional mid-level safety, security, or quality issues of note ~75% of issues are self-identified with most reporting in a timely manner Partial degree of transparency Clear deviations of ISMS practices, reporting, critiques, EOC reviews, safety basis/CONOPS/engineering deviations that are generally infrequent or have minor consequences Nominal NOV, PAAA, fine, injury, security infraction(s)
<p>Red “Does not meet reqmts” “Failing or will fail”</p>	<ul style="list-style-type: none"> Clear (or high) risk of objectives not being achieved on time High probability of not achieving the outcome Expect to not meet or significantly miss cost, scope, or schedule Inadequate degree of transparency 	<ul style="list-style-type: none"> Overall most key areas meeting or close to meeting requirements Inadequate percentage of key deliverables are satisfactory or better Inadequate percentage of sub or supporting areas are performing satisfactorily Too high a frequency of mid-level safety, security, or quality issues of note Major safety, security, or quality issue Less than ~75% of issues are self-identified and reported in a timely manner Inadequate degree of transparency Significant deviations of ISMS practices, reporting, critiques, EOC reviews, multiple safety basis/CONOPS/engineering deviations or a significant deviation with nuclear safety or operational implications Significant NOV, PAAA, fine, injury, security deviation(s)
<p>Grey “Insufficient data” “Not able to assess”</p>	<ul style="list-style-type: none"> Insufficient data to assess at this time 	<ul style="list-style-type: none"> Insufficient data to assess at this time Parties misaligned on the objective

CONOPS = conduct of operations. ISMS = Integrated Safety Management System. PAAA = Price-Anderson Amendment Act.
 EOC = extent of condition. NOV = notice of violation.