

Purpose of Modification:

The purpose of this modification is to make the following changes:

1. The Contractor is directed to proceed with implementation of Parking Lot Items (PLI) 1, 2, 7, 9, 12, and 17 as per Section C, Statement of Work, Standard 7, Environment, Safety, Quality, and Health, (3) Quality Assurance, (ii), (d). The contractor is authorized to incur costs up to a Not-to-exceed (NTE) value of \$200,000 consistent with the other contract terms and conditions and pending definitization of this change.
2. Section C, Statement of Work, Standard 7, Environment, Safety, Quality, and Health, (3) Quality Assurance, (ii), is revised to add paragraph (d), a requirement to implement six CGD Parking Lot Items (PLI) 1, 2, 7, 9, 12, and 17, as contained in 24590-WTP-PL-ENG-17-0005, Rev 0, CGD PLI Implementation Plan.
3. Section J, List of Attachments, Attachment J, Advance Understandings on Costs, Sub-Attachment C, List of Exclusions from Release and Waiver of Claims, is modified to add a notation that item 2. Commercial Grade Dedication (CGD), the 1st bullet is revised to indicate the Mutually Agreed to revision of DOE's direction on the Parking Lot Items.
4. Section J – List of Attachments, Attachment J Advance Understanding of Costs (384), Sub-Attachment C, Table 2 (19 CGD Parking Lot Items) (384) is modified to insert a note in the scope column of the table for PLI # 1, 2, 7, 9, 12, and 17.
5. BNI shall submit within 90 days of date of this modification a detailed technical and price proposal. Negotiations will commence within 140 days of the date of this change order. A bi-lateral modification definitizing this change order shall be executed as soon as possible after the date of the change order, not to exceed 180 days.
6. Contractor shall provide change order accounting in accordance with Clause I.83, FAR 52.243-6, Change Order Accounting (APR 1984).
7. This modification does not add additional funds to the contract. Accordingly, work under the contract, such as that described herein, must be performed within the amount of funds which have been incrementally allotted to the contract in accordance with clause B.3, *Obligation and Availability of Funds and Contract Value*, and clause I.66, FAR 52.232-22 Limitation of Funds (Apr 1984).

Modification Description

1. Section C, Statement of Work, Standard 7; Environment, Safety, Quality, and Health, (e)(3) Quality Assurance, (ii), is modified to add the paragraph (d) as follows:
 - d. The Contractor shall implement 6 (six) CGD Parking Lot Items (PLI) 1, 2, 7, 9, 12, and 17, as contained in 24590-WTP-PL-ENG-17-0005, Rev 0, CGD PLI Implementation Plan, Rev 0.
2. Section J, List of Attachments, Attachment J, Advance Understandings on Costs, Sub-Attachment C, List of Exclusions from Release and Waiver of Claims, is modified to add a notation that item 2. Commercial Grade Dedication (CGD), the 1st bullet is revised to indicate the Mutually Agreed to revision of DOE’s direction on the Parking Lot items in Sub-Attachment C.

2. Commercial Grade Dedication (CGD). The settlement for Modification (384) includes implementation of changes in the form of CGD documentation as described in BNI Corrective Action Plan (CAP) Actions 4-9 and actions to implement the new documentation expectations on all LBL and DFLAW equipment, instruments and bulk materials that have not yet been received and installed, including any vendor impacts due to delays and changes in requirements.

The included BNI CAP Actions 4–9 are set forth in Sub-Attachment C, Table 1 (Included CAP Actions 4-9) (6 pages)

Cost and schedule impacts associated with CGD requirements or expectations extending beyond CAP Actions 4–9 are excluded. Specifically excluded are cost and schedule impacts arising from:

- the 19 “parking lot items”; are set forth in Sub-Attachment C, Table 2 (19 CGD Parking Lot Items) (3 pages)

(Record Note: DOE added the implementation of Parking Lot Items (PLI) 1, 2, 7, 9, 12 and 17 in Section C, Statement of Work, Standard 7; Environment, Safety, Quality, and Health, (e)(3) Quality Assurance, (ii), d. 24590-WTP-PL-ENG-17-0005, Rev 0, CGD PLI Implementation Plan, Rev 0.

- any revision to the final root cause analysis (24590-WTP-RCA-MGT-15-0338, Rev. 2);
- benchmark plans; (Definition- “Benchmark CGD plans” to be developed jointly by BNI and ORP (as an outcome of the CGD Working Group chartered in October 2015) as general examples for future CGD plans, to demonstrate

implementation of current CGD requirements in addition to ORP directed changes relative to the 19 parking lot items.)

- the CGD extent of condition review and any related impacts to received or installed equipment, instruments, and materials.

(Record Note: DOE included a deliverable to implement the CGD extent of condition review and impacts in Section C, *Statement of Work, Table C.5-1.1. Deliverables, 7.11* (397))

3. Section J – List of Attachments, Attachment J Advance Understanding of Costs (384), Sub-Attachment C, Table 2 (19 CGD Parking Lot Items) (384) is modified as follows:

**SECTION J – LIST OF ATTACHMENTS
ATTACHMENT J
ADVANCE UNDERSTANDING ON COSTS (384)**

Sub-Attachment C, Table 2

Table 2 (19 CGD Parking Lot Items) (384)

| PL Item No | Description | Scope |
|------------|---|--|
| 1 | What is the dedication package? How validated/accepted? | This alignment expectation requires that a CGD release form be populated demonstrating that all required CGD plan activities have been completed for BCGD and VCGD. This requires that the reviewer/ CGD release/report generator review CofC's, source verification reports, inspection and test reports, material test reports, factory acceptance test reports and any other document used to document objective evidence of critical characteristic verification. Each CGD plan required attribute and/or activity must be matched to the associated record or objective evidence to demonstrate completion. (Included in SOW, Standard 7(e)(3)(ii)(d) of MOD 415) |
| 2 | EQ & Seismic Considerations from Design addressed in CCFA & how documented | This alignment expectation requires that the basis for selection of the CC include how the CC may be related to EQ. (Included in SOW, Standard 7(e)(3)(ii)(d) of MOD 415) |
| 3 | Structure of Specification of CCFA's | This alignment expectation requires that the acceptance criteria be defined in a manner that is not interpretable whether that acceptance criteria is directly listed or referenced out to a code or standard. Additionally, engineering judgement required to substantiate that acceptance criteria must be documented in the CGD plan technical evaluation. |
| 4 | Define Complex Items / Design Process – differentiate between item complexity and procurement complexity (dedication at lower tier suppliers) | This alignment expectation requires additional guidance to be created for complex nuclear procurements, both BCGD and VCGD. Additional deliverables include a procurement strategy document and a supply chain map. |

| PL Item No | Description | Scope |
|------------|--|---|
| 5 | What is a source Verification Plan - vs Material Acceptance Plan (MAP) (level of detail Survey Plan model) | This alignment expectation requires the creation of a source verification checklist when performing source verification for CGD. |
| 6 | Item Part Number as a CCFA? | This alignment expectation requires that an item part number be verified. It will not be verified as part of CGD, rather the standard receipt inspection process. |
| 7 | How do we use Design Information in Technical Evaluations to support critical characteristics for acceptance (CCFA) selection? | This alignment expectation requires a technical evaluation with credible failure modes identified when the design is not available. When the design is available, a technical evaluation with credible failure modes is not required. (Included in SOW, Standard 7(e)(3)(ii)(d) of MOD 415) |
| 8 | Material Chemistry specifications – full chemistry vs. partial | This alignment expectation requires technical justification when selecting a subset of material chemical properties for acceptance. MET will be producing a report that identifies the acceptable chemical values for typical materials procured at WTP. |
| 9 | Use of PMI vs. wet chemistry. | This alignment expectation requires that the use of equipment used to verify material chemistry (OES, XRF) to be defined in WTP design documents. (MET report) (Included in SOW, Standard 7(e)(3)(ii)(d) of MOD 415) |
| 10 | Refine definition of "Reasonable Assurance" | Documentation of the dedication activities must be complete enough for an independent, qualified reviewer to arrive at the same conclusion. Generated CGD packages shall provide reasonable assurance. |
| 11 | How do we implement industry guidance into the CGD Process? | This alignment expectation requires that a requirements basis report be produced to embody the outcome of the CGD Working Group. |
| 12 | Application of CGD Methods | This alignment expectation further defines the application of CGD acceptance methods, roles and responsibilities. This alignment expectation will evaluate the performance of Method 3 Source Verification by SQR. This alignment expectation will allow for the implementation of EPRI NP-5652 Rev. 1, Appendix F as an alternative means for nuclear procurement. (Included in SOW, Standard 7(e)(3)(ii)(d) of MOD 415) |
| 13 | Use of procurement specification to qualify commercial as NQA-1 vendor | This alignment expectation reiterates the ability to exercise the procurement option allowed by the graded approach to quality document. This allows BNI to qualify a CM vendor using and NQA-1 audit by writing a tailored engineering and quality specification and placing the vendor on the ESL as an NQA-1 qualified vendor. BNI would, however, be required to dedicate all of the vendor's incoming material. |
| 14 | Resolve criteria for review of Supplier Submittals - Specs, Supplier Procedures? | This alignment expectation reiterates the requirement to review vendor documents to contract flow down requirements. In this item, the commitment made was that vendor CGD plans would comply to the contract flow down requirements (T0019) as well as the vendor's |

| PL Item No | Description | Scope |
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| | | procedure. |
| 15 | Effective use of Supplier Submittal during procurement reviews. | This alignment expectation reiterates the requirement to review vendor documents to contract flow down requirements. In this item, the commitment made was that vendor CGD plans would comply to the contract flow down requirements (T0019) as well as the vendor's procedure. |
| 16 | Work on Sampling Strategy method/ guidance. | This alignment expectation requires that when sampling is applied in a CGD plan, that the basis be EPRI TR-017218, Rev. 1. Additional guidance on generating and reviewing sampling plans will be provided to those executing the work. |
| 17 | When does a Credible Failure Modes (CFM) analysis/Failure Mode and Effects Analysis (FMEA) add value? How should they be used? | This alignment expectation requires a failure analysis be performed when the design information is not available. (Included in SOW, Standard 7(e)(3)(ii)(d) of MOD 415) |
| 18 | How to strengthen Commercial Procurements? | N/A |
| 19 | How do we monitor Vendors/Suppliers? How far down the supply chain should BNI monitor dedication activities, and how can a procurement map aid in this effort? | This alignment expectation requires dedication activities to be submitted from all sub-suppliers performing dedication to receive appropriate code status. |

4. Contract Section J, *List of Attachments*, Attachment E, *Advance Understanding on Costs*, Table 13-B, *Not-to-Exceeds Not Included in Modification No. A143 Definitization (M155)*, is deleted in its entirety and replaced in full as follows:

| 13-B. Not-To-Exceeds Not Included in Modification No. A143 Definitization (M155) | | |
|--|---|---------------------------------|
| DOCUMENT ID. | TITLE | DEFINITIZATION MODIFICATION NO. |
| BCP-24590-06-02279 | Expansion of DWP Requirements (permit modifications) (122) (130) | A193 |
| ORP 08-NSD-011 (05/20/08) (CCN:179512) TN 24590-06-03487 | ORP Direction to Implement New Preliminary Safety Analysis Report (PSAR) Updates (136) | A164 |
| ORP 08-NSD-057 (10/09/08) (CCN:188218) TN 24590-06-03752 | Direction to Implement New Safety Classification Process for the Waste Treatment and Immobilization Plant (WTP) (141) | 276 |

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| ORP 08-NSD-059 (10/15/08) (CCN 188217) TN 24590-06-03753 | Direction to Implement New Justification for Continued Design, Procurement, and Installation (JCDPI) (M152) | 164 |
| Modification No. M090 & 09-AMD-205 (07/18/08) (CCN: 202423) TN 24590-06-02145 & -02381 | Direction to Implement DOE 205.1A, Cyber Security Management Program (155) | 217 |
| Modification No. M154 TN 24590-06-04133 | Direction to Implement Pretreatment Engineering Platform (PEP) dry layup (155) | 167 |
| Modification No. M196 BCP 24590-06-04489 BCP 24590-06-04784 BCP 24590-06-05085 | Direction to Implement Multiple Operational Readiness Strategy (218) | 282 |
| Modification No. M196 BCP 24590-06-04853 ORP 10-AMD-139 (05/06/10; CCN: 218244) | Direction to Implement CXP Equipment Option (218) | 317 |
| Modification No. 221 ORP 11-WTP-219 (06/17/11; CCN: 236247); Modification No. 247 ORP 11-WTP-437 (12/01/11; CCN: 242351); Modification No. 264 ORP 12-WTP-0109 (03/15/12; CCN: 245985); Modification No. 286 ORP 12-WTP-317 (09/24/12) | Direction to Proceed with Large Scale Testing (221, 247, 264, 286) | 299 - 384 |
| Modification No. 273 | Direction to participate in the Hanford Site Organizational Climate and Safety Conscious Work Environment (SCWE) Survey | 290 |
| Modification No. 245 ORP 11-WTP-429 | Direction to proceed with the implementation of DOE Order (O) 420.1B, <i>Facility Safety, Chapter V, Systems Engineer Program.</i> (245) | 276 |
| Modification No. 300 ORP 13-CPM-0099 (05/06/13); Modification No. | Direction to Proceed with Full Scale Vessel Testing Program in lieu of the existing Computational Fluid Dynamics and Large Scale Vessel testing Program as a Design Verification Tool (300, 304, 313) | 384 |

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| 304 ORP 13-CPM-0133 (06/05/13); Modification No. 313 ORP 13-CPM-0299 (11/25/13) | | |
| Modification No. 329 ORP 14-CPM-0172 | Direction to proceed with Section C, Statement of Work, Standard 3 Design, paragraph (i) Design of BOF Utility Modifications | 350 |
| Modification No. 330 ORP 14-CPM-0181 | Direction to proceed with Section C, Statement of Work, Standard 3 Design, paragraph (j) Design of BOF Effluent Management Facility | 350 |
| Modification No. 334 ORP 14-CPM-0228, ORP 15-CPM-0300 (358) 16-CPM-0088 (372) | Direction to proceed with Pretreatment Facility vessel mixing design verification. | 384 |
| Modification No. 339 ORP 15-CPM-0008 | Direction to proceed with Section C, Statement of Work, Standard 3 Design, paragraph (k) Design of Balance of Facilities Underground and Site-Wide modifications necessary to support the Direct Feed of LAW (DFLAW) | 350 |
| Modification No. 342 ORP 15-CPM-0064, ORP 16-CPM 0012 (364) | Direction to proceed with the implementation of DOE Order 433.1B, Maintenance Management Program for DOE Facilities and DOE/RL-92-36, Hoisting and Rigging Manual. (342) | 384 |
| Modification No. 344 ORP 15-CPM-0092 | Direction to proceed with initiation of procurement of BOF modifications and LAW Valve Vault materials to support DFLAW; add Interface Control Documents 30 and 31 | 384 |
| Modification No. 348 ORP 15-CPM-0128 | Direction to proceed with initiation of BOF isolation construction to support DFLAW | 384 |
| Modification No. 349 ORP 15-CPM-0136 | Direction to proceed with the implementation of DOE Order 414.1D, CRD, Chg. 1, Quality Assurance. (349) | |
| Modification No. 354 ORP 15-CPM-0195, ORP 16-CPM-0154 (380) | Direction to proceed with procurement of Effluent Management Facility (EMF) equipment and effluent transfer lines and limited EMF construction (354) | 384 |
| Modification No. 371 ORP-16-CPM-0085, ORP-16-CPM-0091 | Conduct supplementary analysis of vessels RLD-VSL-00007 and RLD-VSL-00008 beyond the WTP Code of Record and modify the RLD-VSL-00007 and RLD-VSL-00008 vessel design. | |
| Modification No. 375 ORP-16-CPM-0111, 17-CPM-0038, (388), ORP-17-CPM-0185 (412) | Update the Natural Phenomena Hazards (NPH) Assessment by generating a revised site-specific response analysis and design response spectra for WTP incorporating Hanford site-wide Probabilistic Seismic Hazard Analysis (PSHA) report from PNNL, dated November 21, 2014. (375) | |

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| Modification No. 381 ORP-16-CPM-0155 (381) | Authorization to proceed with the development of an engineering redraft process for Standard 3: Design (c) (22). | 403 |
| Modification No. 385 ORP-16-CPM-0174, ORP-17-CPM-0181 (411) | Authorization to proceed with the engineering redraft process developed in Standard 3, subparagraph (c) (22) to reclassify the required portions of the LAW C5 ventilation system from non-safety to safety significant as described in 24590-LAW-PL-NS-16-0005 Rev. 0, <i>Safety Strategy Summary Document (SSSD) – Oxides of Nitrogen/Melter Offgas Releases</i> . | |
| Modification 389 17-CPM-0044 (389) | Authorization to proceed with engineering and nuclear safety activities necessary to implement the changes to engineered safety controls documented in the Caustic Safety Strategy Summary Document (SSSD) under Standard 3, subparagraph (c) (24) | |
| Modification No. 397, ORP-17-CPM-0094 | DOE included a deliverable to implement the CGD extent of condition review and impacts in Section C, <i>Statement of Work, Table C.5-1.1. Deliverables, 7.11</i> (397) | |
| Modification No. 406, ORP-17-CPM-0151 (406) | DOE Updated DOE Order 232.2A as referenced in Section C, Standard 1, (d)(5)(6) and updated Section J deliverables.(406) | |
| Modification No.415, ORP-18-CPM – 0004 | CGD Implementation Plan for Parking Lot Items 1, 2, 7, 9, 12 and 17 in Section C, <i>Statement of Work, Standard 7, Environment, Safety, Quality, and Health, (e)(3) Quality Assurance, (ii), d.</i> | |

5. A Not-to-Exceed value of \$200,000 is hereby established. As a result, the table in Section B, *Supplies or Services and Prices/Costs*, Section B.3, *Obligation and Availability of Funds and Contract Value*, paragraph (c) is revised as follows:

- The revised Total Estimated Contract Cost (TECC) is increased by \$200,000 from \$14,082,567,405 to \$14,082,767,405
- The Total Estimated Contract Price (TECP) is increased by \$200,000 from \$14,674,907,903 to \$14,675,107,903

6. The table in Section B, *Supplies or Services and Prices/Costs*, Contract Section B.3 *Obligation and Availability of Funds and Contract Value*, paragraph (a), is deleted in its entirety and replaced in full as follows:

Table B.1 – Total Estimated Contract Price

| | | Cost | | | |
|---|--|--|--------------------------|---------------------------|-------------------------|
| Total Estimated Contract Cost (TECC) through Mod No. 412 | | | | | \$14,082,567,405 |
| Total Estimated Contract Cost (415) | | CLIN Estimated Cost | Increased by Mod No. 415 | Total CLIN Estimated Cost | |
| B.1 | CLIN 1.0: Design, Construct, and Commission LBL in the DFLAW Configuration | \$6,507,785,535 | \$200,000 | \$6,507,985,535 | \$200,000 |
| B.2 | CLIN 2.0: WTP Facility Modifications Necessary to Support DFLAW | | | | |
| | Sub-CLIN 2.1: DFLAW Design (Target Cost) | \$75,000,000 | \$0 | \$75,000,000 | \$0 |
| | Sub-CLINs 2.2 /2.3 DFLAW Procurement/ Construction | \$362,600,000 (Previous NTE Values) | \$0 | \$362,600,000 | \$0 |
| B.3 | CLIN 3.0 Reserved for HLW Facility | ** | 0 | | |
| B.4 | CLIN 4.0: Reserved for PT Facility | ** | 0 | | |
| Revised Total Estimated Contract Cost (TECC) through Mod No. 415 | | | | | \$14,082,767,405 |
| Fee | | | | | |
| | | Available | | Earned | Total |
| Earned before Mod No. 384 | | | | | |
| A1 | Final Fee Determination – Pre-Mod No. A143 | | | \$102,622,325 | |
| A2 | Final Fee Earned Mod No. A143 – Mod No. 384 | | | \$131,573,553 | |
| Fixed Fee Payment (Attachment B-2-C)*** | | \$0 | | \$60,000,000 | |
| Pending Activity Milestones (Attachment B-2-B) | | \$0 | | \$6,667,000 | |
| Maximum Available Award Fee (CY 2016–2022) (Attachment B-2-D) | | \$47,235,620 | | \$7,242,000 | |
| CLIN 1.0: Design, Construct, and Commission LBL in the DFLAW Configuration | | | | | |
| E1 | LBL Construction Complete Performance Based Incentives (Attachment B-2-E) | \$51,300,000 | | \$17,100,000 | |
| E2 | Commission LBL in the DFLAW Configuration Performance Based Incentive (Attachment B-2-F) | \$159,600,000 | | | |
| E3 | Schedule Incentive Hot Commissioning (Attachment B-2-F) | +/- \$60,000,000 (Max) | | | |
| E4 | Cost Share Incentive (Attachment B-2-G) | +/- \$50,000,000 (Max) | | | |
| CLIN 2.1: Performance-Based Incentive for DFLAW Design Completion (Attachment B-2-H) | | \$8,000,000 | | \$1,000,000 | |
| Total Maximum Available Fee**** | | \$266,135,620 | | | |
| Total Fee Earned | | | | \$326,204,878 | |
| Total Estimated Contract Price (TECP) (Total Maximum Available Fee + Total Earned Fee + TECC) 415 | | | | | \$14,675,107,903 |

7. All other terms and conditions remain unchanged.

(End of Modification)