

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE		PAGE 1 OF 10 PAGES
2. AMENDMENT/MODIFICATION NO. 453		3. EFFECTIVE DATE (M/D/Y) See Block 16C		4. REQUISITION/PURCHASE REQ. NO.
5. PROJECT NO. (If applicable)				
6. ISSUED BY U.S. Department of Energy Office of River Protection P. O. Box 450, MS H6-60 Richland, WA 99352		7. ADMINISTERED BY (If other than Item 6) CODE		
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP code) Bechtel National, Inc. 2435 Stevens Center Place Richland, WA 99354		9A. AMENDMENT OF SOLICITATION NO. 9B. DATED (SEE ITEM 11) 10A. MODIFICATION OF CONTRACT/ ORDER NO. DE-AC27-01RV14136 10B. DATED (SEE ITEM 13) December 11, 2000		
CODE 396A5		FACILITY CODE 153392068		

11. THIS ITEM APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE DATE AND HOUR SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and amendment and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

**13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS,
IT MODIFIES THE CONTRACT/ORDER NO. AS SET FORTH IN ITEM 14.**

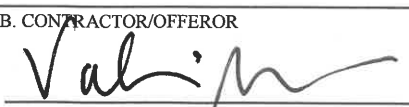
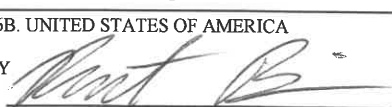
CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
<input type="checkbox"/>	
<input type="checkbox"/>	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO AUTHORITY OF FAR 43.103(b).
<input type="checkbox"/>	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO THE AUTHORITY OF:
<input checked="" type="checkbox"/>	D. OTHER (Specify type of modification and authority) FAR 43.103 Types of Contract Modifications (a) Bilateral - Mutual Agreement of the Parties

E. IMPORTANT: Contractor ☐ is not, ☒ is required to sign this document and return **1** copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

See following page(s)

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print) Valerie McCain Project Director		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Robert Burrier Contracting Officer	
15B. CONTRACTOR/OFFEROR  (Signature of person authorized to sign)	15C. DATE SIGNED 22 APR 19	16B. UNITED STATES OF AMERICA BY  (Signature of Contracting Officer)	16C. DATE SIGNED 4-23-19

Purpose of Modification:

1. The purpose of this modification is to definitize Request for Equitable Adjustments (REA) 2018-011, Transfer Line Pressure Discrepancy Resolution and Section B, *Supplies or Services and Prices/Costs*, and Section J, *List of Attachments* are updated as follows:
 - The subject modification definitizes the Change Order as stated in Contract Modification No. 432.
 - Update Section B, *Supplies or Services and Prices/Costs*, to reflect the total negotiated amount of \$518,883 split between CLIN 1 and Sub-CLINs 2.2/2.3 and \$41,078 for REA Negotiated Fee.
 - Update Section J, *List of Attachments, Attachment J*, to recognize this modification as definitizing the Change Order from Modification No. 432.

Description of Modification:

1. Contract Section B is revised to reflect the following negotiated settlement resulting from REA 2018-011, Transfer Line Pressure Discrepancy Resolution :

Estimated Contract Cost (B.1, CLIN 1):	\$208,568
Estimated Contract Cost (B.2, Sub-CLINs 2.2/2.3):	\$310,315
REA Settlement Fee:	<u>\$41,078</u>
Revised Total Estimated Contract Price (TECP):	\$559,961

2. As a result of negotiations and definitizing REAs 2018-011, the table in Section B, *Supplies or Services and Prices/Costs*, Contract Section B.3 *Obligation and Availability of Funds and Contract Value*, paragraph (c) is revised as follows:
 - The Cost Category (A) Total Estimated Contract Cost (TECC) in the amount of \$14,087,130,275 is carried forward from Contract Modification 448.
 - The Cost Category (B.1) CLIN 1.0: Design, Construct, and Commission LBL in the DFLAW Configuration, Increased by Mod No. 453, is \$208,568.
 - The Cost Category (B.1) CLIN 1.0: Design, Construct, and Commission LBL in the DFLAW Configuration, Total CLIN Estimated Cost, is increased by \$208,568 from \$6,509,669,840 to \$6,509,878,408.
 - The Cost Category (B.2) CLIN 2.0: WTP Facility Modifications Necessary to Support DFLAW, Sub-CLINs 2.2/2.3 DFLAW Procurement/Construction, Increased by Mod No. 453, is \$310,315.

- The Cost Category (B.2) CLIN 2.0: WTP Facility Modifications Necessary to Support DFLAW, Sub-CLINs 2.2/2.3 DFLAW Procurement/Construction, Total CLIN Estimated Cost, is increased by \$310,315 from \$364,038,552 to \$364,348,867.
 - The Revised Total Estimated Contract Cost (TECC) is increased by \$518,883 from \$14,087,130,275 to \$14,087,649,158.
 - The Cost Category E5: REA Fee Post Mod 384, Earned Fee, is increased by \$41,078 from \$322,035 to \$363,113.
 - The Total Fee Earned is increased by \$41,078 from \$336,982,874 to \$337,023,952.
 - The Total Estimated Contract Price (TECP) (Total Maximum Available Fee + Total Earned Fee + TECC) is increased by \$559,961 from \$14,675,726,166 to \$14,676,286,127.
3. The table in Section B, *Supplies or Services and Prices/Costs*, Contract Section B.3 *Obligation and Availability of Funds and Contract Value*, paragraph (c), 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. 448					\$14,087,130,275
Total Estimated Contract Cost (453)		CLIN Estimated Cost	Increased by Mod No. 453	Total CLIN Estimated Cost	
B.1	CLIN 1.0: Design, Construct, and Commission LBL in the DFLAW Configuration	\$6,509,669,840	\$208,568	\$6,509,878,408	
B.2	CLIN 2.0: WTP Facility Modifications Necessary to Support DFLAW				
	Sub-CLIN 2.1: DFLAW Design (Target Cost)	\$75,058,200		\$75,058,200	
	Sub-CLINs 2.2 /2.3 DFLAW Procurement/ Construction	\$364,038,552 (Previous NTE Values)	\$310,315	\$364,348,867	
B.3	CLIN 3.0 HLW Facility	\$2,741,698,522		\$2,741,698,522	
B.4	CLIN 4.0: PT Facility	\$4,396,665,161		\$4,396,665,161	
	Revised Total Estimated Contract Cost (TECC) through Mod No. 453				\$14,087,649,158
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)		\$39,363,017		\$11,047,961	
CLIN 1.0: Design, Construct, and Commission LBL in the DFLAW Configuration					

		Cost			
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)	\$152,950,000		\$6,650,000	
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)			
E5	REA Fee Post Mod 384 (453)		\$41,078	\$363,113	
CLIN 2.1: Performance-Based Incentive for DFLAW Design Completion (Attachment B-2-H)		\$8,000,000		\$1,000,000	
Total Maximum Available Fee****		\$251,613,017			
Total Fee Earned (453)				\$337,023,952	
Total Estimated Contract Price (TECP) (Total Maximum Available Fee + Total Earned Fee + TECC) (453)					\$14,676,286,127

** Estimated cost for interim work plans within the agreed funding profile for CLINs 3.0 and 4.0 is included in Total Estimated Contract Cost (TECC).

*** Payment is in satisfaction of all fee entitlement for work accomplished under the Contract from contract Modification No. A143 through the date of this modification (384) that is not included in A2 above.

**** Exclusive of Cost Share and Schedule Incentives.

4. Section B, Table B-2-F-1, Configuration Performance Based Incentive Fee, item B) Successful Demonstration of Hot Commissioning Final Milestone PBI Description - is revised to increase the number in the third paragraph from \$3,604,336,447 by \$208,568 to \$3,604,545,015 as follows:

LBL Startup and Commissioning Performance Based Incentive Fee	Fee (\$)
<p>B) <u>Successful Demonstration of Hot Commissioning Final Milestone PBI Description:</u></p> <p>75% of the Startup and Commissioning PBI pool will be earned upon the successful demonstration of hot commissioning by January 15, 2022. This PBI is date dependent and will have a +/- 3-month grace period.</p> <p>Schedule Incentive Fee – <u>Description:</u> For completion of the successful demonstration of LBL hot commissioning per Section J, "List of Attachments," Attachment P, "Completion Definition Sheets for Incentive Fees," after April 15, 2022, fee under this PBI will be reduced at a rate of \$10M/month for a six (6) month period or until October 15, 2022. For completion after October 15, 2022, fee under the successful demonstration of hot commissioning PBI will be reduced to a minimum fee of 30% or \$35.9M, which is subject to the cost share incentive of this PBI.</p> <p>For completion per Section J, "List of Attachments," Attachment P, "Completion Definition Sheets for Incentive Fees," earlier than October 15, 2021, the Contractor shall earn a fee incentive of \$10M/month for a six (6) month period or until April 15, 2021, subject to the maximum schedule incentive of \$60M. Any incentive earned under the successful demonstration of this PBI for early completion is conditioned on achievement of actual cost savings equal to or greater than 200% of the amount of incentive earned (i.e., if the completion date is August 15, 2021, the Contractor is entitled to a \$20M schedule incentive, provided that the total costs for CLIN 1.0 are equal to or less than \$3,604,545,015, a reduction of \$40M).</p> <p>Total LBL Startup and Commissioning Performance Based Incentive Fee not including schedule incentive</p>	<p>\$119,700,000 (+ any unearned Startup and Commissioning Interim PBIs)</p> <p>\$159,600,000</p>

LBL Startup and Commissioning Performance Based Incentive Fee	Fee (\$)
See Figure B-2-F-1 for an illustration of the mechanics of the Schedule Incentive.	

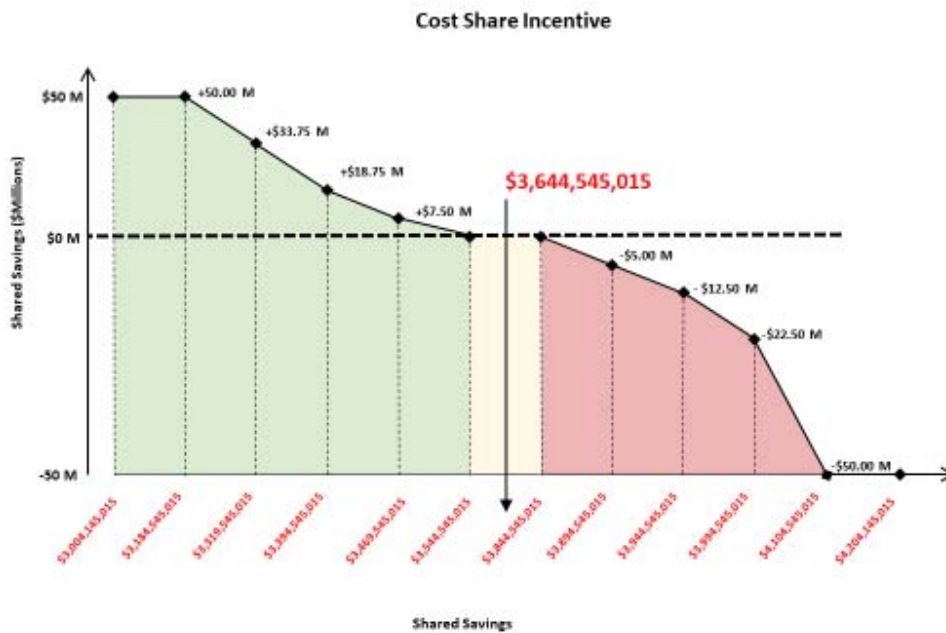
5. Section B, Attachment B-2-G, Incentive Fee G – CLIN 1.0 Cost Share Incentives is revised to increase numbers by \$208,568 as follows:

The Government and BNI will share cost increases/decreases above or below the target cost of **\$3,644,545,015**. The final increase/decrease to earned fee will be based on the actual final cost incurred to complete CLIN 1.0 from January 1, 2014. The increase/decrease will be cumulative and the final amount will be prorated for any final cost falling between the high and low points of any of the final cost bands reflected herein.

Cost Share Incentives	Description	Maximum Incremental Fee Reduction	Maximum Cumulative Fee Reduction
	CLIN 1.0 Cost share incentive will include a +\$200M fee neutral cost band above the price of \$3,644,545,015 and a -\$100M fee neutral band below \$3,644,545,015 .		
Decreases to earned fee will start after the total cost for CLIN 1.0 exceeds \$3,844,545,015 as follows:	Total cost for CLIN 1.0 between \$3,844,545,015 to \$3,894,545,015 , the cost increase will be shared in a ratio of 90% Government and 10% BNI.	-\$5,000,000.00	-\$5,000,000.00
	Total cost for CLIN 1.0 between \$3,894,545,015 to \$3,944,545,015 , the cost increase will be shared in a ratio of 85% Government and 15% BNI.	-\$7,500,000.00	-\$12,500,000.00
	Total cost for CLIN 1.0 between \$3,944,545,015 to \$3,994,545,015 , the cost increase will be shared in a ratio of 80% Government and 20% BNI.	-\$10,000,000.00	-\$22,500,000.00
	Total cost for CLIN 1.0 between \$3,994,545,015 to \$4,104,545,015 the cost increase will be shared in a ratio of 75% Government and 25% BNI.	-\$27,500,000.00	-\$50,000,000.00
	Total Decrement for \$460,000,000 cost increase to price (\$4,104,545,015)	-\$50,000,000.00	
Increases to earned fee will start when costs are below \$3,544,545,015		Maximum Incremental Fee Increase	Maximum Cumulative Fee Increase

	Total cost for CLIN 1.0 equal to \$3,544,545,015 to \$3,469,545,015 , the cost savings will be shared in a ratio of 90% Government and 10% BNI.	\$7,500,000.00	\$7,500,000
	Total cost for CLIN 1.0 between \$3,469,545,015 to \$3,394,545,015 , the cost savings will be shared in a ratio of 85% Government and 15% BNI.	\$11,250,000.00	\$18,750,000
	Total cost for CLIN 1.0 between \$3,394,545,015 to \$3,319,545,015 , the cost savings will be shared in a ratio of 80% Government and 20% BNI.	\$15,000,000.00	\$33,750,000
	Total cost for CLIN 1.0 between \$3,319,545,015 to \$3,184,545,015 , the cost savings will be shared in a ratio of 75% Government and 25% BNI.	\$16,250,000.00	\$50,000,000
	Total Incentive for cost savings	\$50,000,000.00	

6. In Section B, Figure B-2-G-1. Graph Cost Share Incentive Fee CLIN 1.0 is revised to reflect the \$208,568 revision to the Cost Share Incentive Curve as follows:



7. The table in Section B, *Supplies or Services and Prices/Costs*, Contract Section B.12, Attachment B-2-I, REA Fee Post Mod 384, is revised to add the REA for Transfer Line Pressure Discrepancy Resolution to the table as follows:

REA Number and REA Title	Contract Mod Recognizing Definitization	Dollar Value of Fee Negotiated
REA 2017-002 EMF Differing Subsurface Conditions	420	\$40,522
REA 2016-002 Probabilistic Seismic Hazards Analysis (PSHA) Assessment	429	\$85,627
REA 2016-001 Rev. 1 Direction to Evaluate IERT Recommendations for RLD-VAL-00007 & 00008	441	\$139,098
REA 2017-008 Rev. 0 T-1 Office Space for DOE	445	\$56,788
REA 2018-011 Rev. 0 Transfer Line Pressure Discrepancy Resolution	453	\$41,078
Total		\$363,113

8. Contract Section J, *List of Attachments*, Attachment J, *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
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)	Direction to Implement DOE 205.1A, Cyber Security Management Program (155)	217

TN 24590-06-02145 & -02381		
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</i> , Chapter V, <i>Systems Engineer Program</i> . (245)	276
Modification No. 300 ORP 13-CPM-0099 (05/06/13); Modification No. 304 ORP 13-CPM-0133 (06/05/13); Modification No. 313 ORP 13-CPM-0299 (11/25/13)	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

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.	441
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)	429
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-	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	426

17- CPM-0181 (411)	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), 18-CPM- 0105 (428)	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)	433
Modification No. 397, ORP-17- CPM-0094; 18- CPM-0143 (438)	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, 18-CPM- 0105 (428)	CGD Implementation Plan for Parking Lot Items 1, 2, 7, 9, 12 and 17 in Section C, Statement of Work, Standard 7, Environment, Safety, Quality, and Health, (3) Quality Assurance, (ii), d.	443
Modification No. 432, ORP-18- CPM-0123 (432)	Authorized to perform Design and Procurement of the Actuated On/Off Valve as referenced in Section C, Statement of Work, Subsection C.7 Facility Specification, paragraph (a) (3)	453

9. **Contractor's Statement of Release:** In consideration of the Modification 453, agreed to herein as complete equitable adjustment for the Contractor's Request for Equitable Adjustments (REA) for 2018-011, the Contractor hereby releases the Government from any and all liability under this contract for further equitable adjustments attributable to such facts or circumstances giving rise to the changes as noted in the modification.

All other terms and conditions remain unchanged.

(End of Modification)