

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE	PAGE 1 OF 7 PAGES
2. AMENDMENT/MODIFICATION NO. 334		3. EFFECTIVE DATE (M/D/Y) See Block 16C		4. REQUISITION/PURCHASE REQ. NO.
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.	
CODE 396A5			9B. DATED (SEE ITEM 11)	
FACILITY CODE 153392068			10A. MODIFICATION OF CONTRACT/ ORDER NO. DE-AC27-01RV14136	
			10B. DATED (SEE ITEM 13) December 11, 2000	

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 checked="" type="checkbox"/> Clause I.82, FAR 52.243-2 Changes – Cost Reimbursement (AUG 1987) – Alternate III (APR 1984)
<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 type="checkbox"/>	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor is not, is required to sign this document and return ___ copies to the issuing office.

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

Reference Continuation 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)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) George F. Champlain Contracting Officer	
15B. CONTRACTOR/OFFEROR <i>(Signature of person authorized to sign)</i>	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY <i>George F. Champlain</i> <i>(Signature of Contracting Officer)</i>	16C. DATE SIGNED 20 Oct 2014

Modification Purpose:

1. Issue a change order for full-scale vessel and proof-of-concept testing beyond vessel RLD-8 as follows:
 - a. Section C, *Statement of Work*, is revised to incorporate *Standard 3 Design*, paragraph (h)(2) Pretreatment Vessel Mixing Design Verification into the contract.
 - b. The Contractor is directed to proceed with the workscope in Section C, *Statement of Work, Standard 3 Design*, paragraph (h)(2) specified in the Modification Description below. The Contractor is directed to begin work immediately. The Contractor is authorized to incur costs up to a not-to-exceed (NTE) value of \$30,000,000 consistent with the other contract terms and conditions and pending definitization of this change. This NTE only applies to paragraph (h)(2) Pretreatment Vessel Mixing Design Verification.
 - c. Contractor shall submit a proposal within 45 days of the date of this change order. A bilateral modification definitizing this change order shall be executed as soon as possible after the date of the change order, not to exceed 180 days.
 - d. Contractor shall provide change order accounting in accordance with Clause I.83, FAR 52.243-6, Change Order Accounting (APR 1984).
 - e. 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.2, *Obligation and Availability of Funds and Contract Value*, and clause I.66, FAR 52.232-22 Limitation of Funds (Apr 1984).
2. Modify existing language in Section C, *Statement of Work*, paragraph (h) Vessel Mixing, to clarify the requirements for existing RLD-8 testing.

Modification Description:

1. Section C, *Statement of Work, Standard 3 Design*, paragraph (h) is replaced in its entirety with the following language:

(h) Vessel Mixing:

The Contractor shall plan to perform a Full Scale Vessel Testing (FSVT) program to support design verification of the Pulse Jet Mixed (PJM) vessels to perform their mixing functions, control the operation of the PJMs, and provide a basis to update the WTP safety basis. Planning for the FSVT program shall include identification of the PJM vessels to be tested at full scale considering vessels

currently installed and vessels to be installed. For vessels that have not yet been installed, the design is to be verified before installation. Computational fluid dynamics (CFD) tools may be used to verify certain vessel designs in such cases that are justified with adequate technical bases and concurred by DOE. The Contractor is required to demonstrate CFD meets the acceptability requirements for design verification prior to use.

(1) RLD-8 Testing :

The Contractor shall plan and conduct FSVT utilizing the RLD-8 test vessel. The test program shall include the following elements, as a minimum:

- (i) Development of a strategy/design guide for the approach to verify vessel designs to support their mixing, transfer and sampling functions.
- (ii) Develop test specification(s) to document the associated vessel operating/process conditions, mixing requirements and data needs to support verification of the vessel mixing functions. The defined process conditions will serve as the specification of the requirements for the development of chemical/physical test simulants to be used in FSVT. Qualified simulant recipes are to be used. The Contractor is to ensure that the use of the simulants provides for appropriate controls to protect personnel and manage any environmental hazards.
- (iii) Ensure that appropriate environmental permits are prepared and approved.
- (iv) As the WTP design authority, develop the proposed test program planning documents (e.g. test plans, data analysis plan) for FSVT. Test plans will include identification of test objectives for FSVT to support verification of design mixing, transfer and sampling functions.
- (v) Prepare a charter for a Joint Test Group and lead the Joint Test Group.
- (vi) Design, construct, and prepare the FSVT facility and support equipment to conduct vessel mixing tests and PJM control tests.
- (vii) Perform FSVT using approved test plans and procedures.
- (viii) Ensure the data collected during testing meets the quality requirements for use in vessel design verification as specified in the test plan.

- (ix) Prepare design calculations and analyses based on engineering methods and test analyses/reports to verify the vessel designs for performing their mixing, transfer and sampling functions.
- (x) Retain custodial responsibility for the platform equipment and instrumentation that are used in the test program to ensure they are not damaged as part of any activities associated with testing.
- (xi) In addition to the FSVT program, the Contractor shall develop and implement an integrated test strategy and program to verify the vessel level PJM control system design(s). This test program will demonstrate adequate performance of the PJM control systems with prototypic equipment.

(2) Pretreatment Vessel Mixing Design Verification:

The Contractor shall demonstrate the adequacy of design of PT vessels using full scale vessel and proof-of-concept testing. CFD tools may be used to verify certain vessel designs in such cases that are justified with adequate technical basis and concurred by DOE.

The test program shall include the same elements identified under RLD-8 testing and:

- (i) Develop test specification(s) for the PT vessels (including the standard high-solids vessel) to document the associated vessel operating/process conditions, mixing requirements, and data needs to support verification of the vessel mixing functions.
- (ii) Modify and prepare the FSVT facility, support facilities, prototypic test vessel, and support equipment to conduct vessel mixing and design verification testing as required.

2. A Not-to-Exceed value of \$30,000,000 is hereby established for work under Section C, *Statement of Work, Standard 3 Design*, paragraph (h)(2). As a result, the table in Section B, *Supplies or Services and Prices/Costs*, Section B.2, *Obligation and Availability of Funds and Contract Value*, paragraph (c) is revised as follows:

- The Total Estimated Contract Cost (TECC) is increased by \$30,000,000, from \$10,748,386,496 to \$10,778,386,496.
- The Total Estimated Contract Price (TECP) is increased by \$30,000,000, from \$11,343,510,036 to \$11,373,510,036.

The table in Section B, *Supplies or Services and Prices/Costs*, Section B.2, *Obligation and Availability of Funds and Contract Value*, paragraph (c) is deleted in its entirety and replaced in full as follows:

Cost:			
	Total Estimated Contract Cost (TECC) (334)		\$ 10,778,386,496
Fee:			
A	Final Fee Determination - Pre-Mod No. A143		\$ 102,622,325
B	Maximum Available Award Fee (See Table B-2-B-1)		\$ 114,501,215
B.1	Project Management Incentive	\$ 54,744,797	
B.2	Cost Incentive	\$ 54,358,760	
B.3	REA Settlement	\$ 5,397,658	
C	Schedule Incentive Fee		\$ 227,000,000
C.1	Activity Milestone Completion	\$ 173,000,000	
C.2	Facility Milestone Completion	\$ 54,000,000	
D	Operational Incentive Fee		\$ 91,000,000
D.1	Cold Commissioning	\$ 45,000,000	
D.2	Hot Commissioning	\$ 46,000,000	
E	Enhancement Incentive Fee		\$ 60,000,000
E.1	Enhanced Plant Capacity	\$ 15,000,000	
E.2	Sodium Reduction	\$ 15,000,000	
E.3	Enhanced Plant Turnover	\$ 15,000,000	
E.4	Sustained Production Achievement	\$ 15,000,000	
	Total Maximum Available Fee		\$ 595,123,540
	Total Estimated Contract Price (TECP) (334)		\$ 11,373,510,036

3. 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) (M122) (M130)	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 (M136)	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) (M141)	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)	A164
Modification M090 & 09-AMD-205 (07/18/08) (CCN 202423) TN 24590-06-02145 & -02381	Direction to Implement DOE 205.1A, Cyber Security Management Program (M155)	217
Modification M154 TN 24590-06-04133	Direction to Implement Pretreatment Engineering Platform (PEP) dry layup (M155)	A167
Modification M196 BCP 24590-06-04489 BCP 24590-06-04784 BCP 24590-06-05085	Direction to Implement Multiple Operational Readiness Strategy (218)	282
Modification M196 BCP 24590-06-04853 ORP 10-AMD-139 (05/06/10; CCN 218244)	Direction to Implement CXP Equipment Option (218)	317
Modification 221 ORP 11-WTP-219 (06/17/11; CCN 236247); Modification 247 ORP 11-WTP-437 (12/01/11; CCN 242351); Modification 264 ORP 12-WTP-0109 (03/15/12; CCN 245985); Modification 286 ORP 12-WTP-317 (09/24/12)	Direction to Proceed with Large Scale Testing (MOD 221, MOD 247, MOD 264, MOD 286)	299 - Partial
Modification 273	Direction to participate in the Hanford Site Organizational Climate and Safety Conscious Work Environment (SCWE) Survey	290
Modification 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 300 ORP 13-CPM-0099 (05/06/13); Mod 304	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	

ORP 13-CPM-0133 (06/05/13); Modification 313 ORP 13-CPM-0299 (11/25/13)	Tool (300, 304, 313)	
Modification 329 ORP 14-CPM-0172	Direction to proceed with Section C, <i>Statement of Work, Standard 3 Design</i> , paragraph (i) Design of BOF Utility Modifications	
Modification 330 ORP 14-CPM-0181	Direction to proceed with Section C, <i>Statement of Work, Standard 3 Design</i> , paragraph (j) Design of BOF Effluent Management Facility	
Modification 334 ORP 14-CPM-0228	Direction to proceed with Pretreatment Facility vessel mixing design verification.	

4. All other terms and conditions remain unchanged.

(End of Modification)