

<b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>		1. CONTRACT ID CODE	PAGE OF PAGES <b>1</b> OF <b>4</b>
2. AMENDMENT/MODIFICATION NO. <b>304</b>	3. EFFECTIVE DATE (M/D/Y) <b>See Block 16C</b>	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)
6. ISSUED BY <b>U.S. Department of Energy Office of River Protection P. O. Box 450, MS H6-60 Richland, WA 99352</b>	CODE	7. ADMINISTERED BY (If other than Item 6)	CODE
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP code) <b>Bechtel National, Inc. 2435 Stevens Center Place Richland, WA 99354</b>		<input type="checkbox"/>	9A. AMENDMENT OF SOLICITATION NO.
CODE <b>396A5</b> FACILITY CODE <b>153392068</b>		<input type="checkbox"/>	9B. DATED (SEE ITEM 11)
		<input checked="" type="checkbox"/>	10A. MODIFICATION OF CONTRACT/ ORDER NO. <b>DE-AC27-01RV14136</b>
			10B. DATED (SEE ITEM 13) <b>December 11, 2000</b>

**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) <b>George F. Champlain Contracting Officer</b>	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
_____ (Signature of person authorized to sign)		BY <u>George F. Champlain</u> (Signature of Contracting Officer)	<u>5 June 2013</u>

**Modification Purpose:**

The purpose of this modification is to revise the change order issued under Contract Modification No. 300 as follows:

- a. Modification Description, paragraph 1: Change the word “suspend” to “discontinue”.
- b. Section C, *Statement of Work*, is revised to clarify roles and responsibilities for Full Scale Vessel Testing (FSVT) deliverables from the U.S. Department of Energy National Laboratories.

**Modification Description:**

1. Contract Modification No. 300, Modification Description, paragraph 1 is changed to read:

BNI is directed to discontinue the current approach of Large Scale Integrated Testing (LSIT) in support of validation and verification of Computational Fluid Dynamics (CFD) for use as a design verification tool for vessel mixing. Specifically, the language in Section C, *Statement of Work*, Standard 2 *Research, Technology, and Modeling*, (a) *Research and Technology Testing Program* (3) *Required Research and Technology Testing*, paragraph (x) *Vessel Mixing*, is superseded by the language in Section C, *Statement of Work*, Standard 3 *Design*, paragraph (h) described below.

2. Section C, *Statement of Work*, Standard 3 *Design*, (h) *Vessel Mixing*, incorporated by Contract Modification No. 300, 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. Partnering between the Contractor, DOE, and DOE contractors shall be used to prepare, review and/or approve the FSVT program elements. 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.

- (1) RLD-8 FSVT:

The Contractor shall plan and conduct FSVT utilizing the RLD-8 test vessel. The mandatory elements to be implemented by the Contractor for the RLD-8 test program are listed below:

- (i) Development of a design guide for the approach to verify vessel designs to support their mixing, transfer and sampling functions.

- (ii) Specification of the RLD-8 and 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 obtained from the DOE National Laboratories for Contractor review and procurement of the simulants. The Contractor is to ensure that the use of the simulants developed by the DOE National Laboratories provides for appropriate controls to protect personnel and manage any environmental hazards.
- (iii) Ensure that appropriate environmental permits are prepared and approved.
- (iv) Review, comment on, and approve, as the WTP design authority, the proposed test program planning documents (test plans, data analysis plan, etc.) obtained from the DOE National Laboratories for FSVT. The test plans will include identification of test objectives for FSVT to support verification of design mixing, transfer and sampling functions. The Contractor will identify any information required to verify the design that is not included in the test program planning documentation obtained from the DOE National Laboratories.
- (v) Prepare a charter for a Joint Test Group for approval by the WTP Design Completion Core Team and lead the Joint Test Group.
- (vi) Design, construct, and prepare the FSVT facility (using the repurposed RLD-8 vessel) and support equipment to conduct vessel mixing tests and PJM control tests.
- (vii) Perform FSVT utilizing approved test plans and procedures.
- (viii) Verify the data collected during testing to ensure that it meets the quality requirements for use in vessel design verification as specified in the test plan provided by the DOE National Laboratories.
- (ix) Prepare design calculations and analyses based on engineering methods and test analyses/reports to verify the RLD-8 and associated 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.

Note: DOE and the Contractor have established a WTP Design Completion Core Team to oversee the resolution of technical issues associated with Black Cells / Hard-to-Reach areas in the Pretreatment and High Level Waste Vitrification facilities. DOE has directed the Contractor to retain the DOE National Laboratories to develop and qualify simulants for testing, develop and qualify test instrumentation, develop detailed test plans for FSVT, analyze test results, and prepare final test reports. The Contractor shall provide formal documentation of the vessel selection for FSVT (including basis for selection), as well as items (i), (ii), (v), (ix) and (xi) to the WTP Design Completion Core Team for review and concurrence. Test simulant "recipes," test instrumentation requirements, test plans, and final test reports will be provided to the Contractor in draft form and, after review and comment resolution, as formal deliverables by the DOE National Laboratories. The WTP Design Completion Core Team will approve the final deliverables prior to implementation.

3. All other terms and conditions specified in Contract Modification No. 300 remain unchanged.

*(End of Modification)*