

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE
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2. AMENDMENT/MODIFICATION NO. Eleven (11)	3. EFFECTIVE DATE 01/20/88	4. REQUISITION/PURCHASE REQ. NO. NMS-85-009 dtd 1/13/88	5. PROJECT NO. (If applicable)
6. ISSUED BY U.S. Nuclear Regulatory Commission Division of Contracts Washington, D.C. 20555	CODE	7. ADMINISTERED BY (If other than Item 6)	CODE

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) Nuclear Waste Consultants, Inc. 155 South Madison Street, Suite 306 Denver, Colorado 80209-3014	(X) 9A. AMENDMENT OF SOLICITATION NO. 9B. DATED (SEE ITEM 11) 10A. MODIFICATION OF CONTRACT/ORDER NO. X NRC-02-85-009 10B. DATED (SEE ITEM 13) 09/27/85
CODE	FACILITY CODE

11. THIS ITEM ONLY 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 ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE 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 this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

APPN NO. 31X0200.508 FIN NO. D1021-8 B&R NO. 50-19-03-01 OBLIGATE: \$358,888.00

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

(X) 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.
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: X C.1.3 and F.2 by mutual agreement
D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☐ is not, ☒ is required to sign this document and return 2 copies to the issuing office.

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

SEE ATTACHED PAGES

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) Mark J. Logsdon, Vice President	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Elois J. Higgins
15B. CONTRACT/ORDER/ISSUE Mark J. Logsdon (Signature of person authorized to sign)	15C. DATE SIGNED BY Elois J. Higgins (Signature of Contracting Officer)
15D. UNITED STATES OF AMERICA	15E. DATE SIGNED 4/27/88

NSN
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30-105

STANDARD FORM 30 (Rev. 1-75)
Prescribed by GSA
FPMR (41 CFR) 101-11.6

The purpose of this modification is to incorporate the Statement of Work and the Total Estimated Cost for the first option year. As a result of this modification, the cost ceiling of the subject contract is revised to reflect the final agreement of the parties on the total amount of cost and fee applicable for the work during the first option year.

Under modification No. 10, the Estimated Cost and Obligation amounts were increased to provide the temporary ceiling increase of \$40,000.00 for the first year option pending completion of negotiations. Upon completion of negotiations, it was determined that the Total Estimated Cost Plus Fixed Fee for the first year option is \$398,888.00. Therefore, this modification hereby provides authorization and funding for the remaining \$358,888.00. Accordingly, the following changes are hereby made:

1. During the first year option (January 20, 1988 through January 19, 1989), the Contractor shall perform work in accordance with the requirements specified in the attached Statement of Work, which is incorporated herein by reference under Section C - Description/Specifications/Work Statement of the contract. The Contractor's proposal, dated March 7, 1988, is hereby incorporated by reference.
2. Under Section B - Supplies or Services and Prices/Costs, Paragraph B.2 is revised to read as follows:

"The Total Estimated Cost and Fixed Fee is hereby increased from \$1,177,349.00 by \$358,888.00 to \$1,536,237.00. Of which amount the Total Estimated Cost amount of \$1,112,970.90 is increased by \$332,792.00 to \$1,445,762.90 and the Fixed Fee of \$64,378.10 is increased by \$26,096.00 to \$90,474.10."

3. Under Section G - Contract Administration Data, paragraph G.1, Consideration, is revised to read as follows:

"Estimated Cost, Fixed Fee and Obligation

1. It is estimated that the total cost to the Government for full performance of this contract will be \$1,536,237.00 of which the sum of \$1,445,762.90 represents the estimated reimbursable costs, and of which \$90,474.10 represents the fixed fee.
2. Total funds currently available for payment and allotted to this contract are \$1,536,237.00, of which \$1,445,762.90 represents the estimated reimbursable costs, and of which \$90,474.10 represents the fixed fee."

4. Under Section G - Contract Administration Data, paragraph G.2, Overhead/General and Administrative Rates, the following changes are made:

1. Under sub-paragraphs A. and B., the following sentence is hereby added:

"The effective date of this rate is from September 27, 1985 through September 30, 1985."

2. The following sub-paragraph is hereby added:

"C. Pending the establishment of final overhead rates which shall be negotiated based on audit of actual costs, the contractor shall be reimbursed for allowable indirect costs hereunder at the pooled-overhead provisional rate of 40.19 percent of direct labor. The effective date of this rate is from October 1, 1985 through January 19, 1989."

As a result of this modification, the contract ceiling amount is increased from \$1,177,349.00 by \$358,888.00 to \$1,536,237.00. All other terms and conditions of this contract remain unchanged.

Statement of Work
For The First Option Year
Under Contract No. 02-85-009

TASK 1 (50%): TECHNICAL ASSISTANCE IN REVIEWING THE HYDROGEOLOGIC INVESTIGATIONS OF THE NEVADA NUCLEAR WASTE STORAGE INVESTIGATION PROJECT (NNWSI)

Subtask 1.2: Data Inventory and Management (NNWSI)

Subsequent to becoming familiar with the existing NNWSI data base under Subtask 1.1 the contractor shall develop a data inventory which lists in summary form the type and amount of data/information which are available and documented. In addition, the contractor shall summarize the available data using a format suitable for:

- A) Reviewing the appropriate hydrogeologic and related data;
- B) Developing three-dimensional relationships and governing processes;
- C) Developing conceptual model(s) of saturated and unsaturated zone groundwater flow and radionuclide transport pathways; and
- D) Evaluating conceptual models numerically

The format shall allow the data base to be updated periodically to include new or additional data/information obtained under Subtask 1.3 of this contract. Efforts under this task should be focused on data collected by DOE or their contractors as part of NNWSI site investigations rather than data obtained by DOE which is only of secondary interest. (Example of obtained data: data reported from literature searches rather than direct field or laboratory investigations).

Within six (6) months after initiation of the contract, the contractor shall submit a letter report to the NRC containing the data inventory and compiled data base. For the purposes of proposal preparation it is estimated that the contractor will be required to update the data base semi-annually throughout the period of performance of this option year.

Subtask 1.3: Review of DOE Site Activities, Reports and Other Relevant Technical Documents (NNWSI)

DOE is now conducting major programs of laboratory and field testing related to the hydrogeology of both the saturated and unsaturated zones. Early and ongoing technical reviews are essential to assure that this work is providing information needed for licensing. These reviews involve evaluating specific data and detailed information on how data was collected and analyzed to establish independently data relevance and quality. Effective review requires keeping current with the large volume of data being generated to assure DOE's program is directed toward resolving licensing issues. Therefore, it is anticipated that work under this subtask will continue throughout the period of performance of this contract. Reviews under this subtask shall be in two forms:

- A) The contractor shall review and comment on either DOE NNWSI data reports and technical documents or other relevant technical documents as directed by the NRC P.O. Reviews shall include a brief summary of the document, evaluation of the technical quality of the document and a discussion on how the document is related to or affects issue resolution (refer to Exhibit 2 for an example format). It is estimated that such document reviews will vary in length from three (3) to ten (10) pages depending on the depth of information in the document. The contractor shall be allowed two (2) weeks to review any and each individual document.

It is estimated the contractor will be required to review thirty-six (36) documents per year throughout the period of performance of this option year.

- B) The contractor shall participate in NRC/DOE technical meetings (one in Silver Spring, Maryland and one in Nevada) related to NNWSI site activities. These meetings will involve discussion and/or review of data, information or plans for future testing. It is estimated that the contractor will participate in two (2) NRC/DOE technical meetings and one (1) site field trip (5 days duration, each) per year during the period of performance of this option year.

Subtask 1.4: Conceptual Model Evaluation (NNWSI)

The contractor shall evaluate existing conceptual models of the groundwater flow system (in particular, radionuclide transport pathways) based on data/information developed in Subtask 1.2. In addition, the contractor shall determine the need to develop and evaluate alternate conceptual models which may be supported by the existing data base. If such alternate conceptual models are supported by the existing data base, the contractor shall continue to develop and evaluate them. Evaluation of conceptual models shall consider both regional and local (Yucca Mountain) scales (including both the saturated and unsaturated zones). Appropriate consideration should be given to geologic, geophysical, hydrologic and hydrochemical information when evaluating and/or developing the conceptual models.

Within six (6) months after initiation of the contract, the contractor shall submit a letter report containing the qualitative evaluation of conceptual models. The evaluation shall include:

- A) Descriptions
- B) Illustrations
- C) Geologic, hydrologic, geophysical and hydrochemical bases
- D) Consideration of anticipated future conditions
- E) Discussion of areas of uncertainty
- F) Areas of additional data needs

It is estimated that the contractor will be required to update conceptual models semi-annually throughout the period of performance of this option year.

Subtask 1.5: Numerical Evaluation of Conceptual Models (NNWSI)

In consultation with the NRC P.O., the contractor shall perform sensitivity studies of conceptual models evaluated under Subtask 1.4 in order to identify quantitatively key parameters affecting flow system and radionuclide transport pathway conceptualization, assess areas of uncertainty and prioritize areas of additional data needs. Within six (6) months after initiation of the contract the contractor shall submit a letter report containing the results of these analyses. It is estimated that the contractor will be required to update numerical analyses semi-annually throughout the period of performance of this option year.

Subtask 1.6: Review of Site Characterization Plan (NNWSI)

Under NWPA [Sec. 113 (b)(1)] DOE is required to develop a Site Characterization Plan (SCP) for sites nominated as a candidate repository. Upon receipt of a SCP the NRC will have, at most, four months to complete review of this comprehensive document. Upon receipt of the SCP the contractor shall review the document in accordance with the review plan developed by the NRC. (refer to attached Administrative and Technical Review Plans for guidance on scope and content of review for proposal preparation).

TASK 2(2.5%): TECHNICAL ASSISTANCE IN REVIEWING THE HYDROGEOLOGIC INVESTIGATIONS OF THE BASALT WASTE ISOLATION PROJECT (BWIP)

Subtask 2.8: Technology Transfer To CNWRA

To close out activities related to the BWIP program in an orderly manner, the contractor shall transfer to the CNWRA in San Antonio, Texas, summary reports on past activities and products such as reference bibliographies, data bases, document reviews, conceptual and numerical analyses for retention. It is estimated this effort will require at least one (1) trip to the CNWRA in San Antonio, Texas of approximately three (3) days duration. All technology transfer activities shall be completed within five (5) months.

TASK 3(2.5%): TECHNICAL ASSISTANCE IN REVIEWING THE HYDROGEOLOGIC
INVESTIGATIONS OF THE SALT REPOSITORY PROJECT OFFICE SALT SITES
(SRPO)

Subtask 3.8: Technology Transfer To CNWRA

To close out activities related to the SRPO program in an orderly manner, the contractor shall transfer to the CNWRA in San Antonio, Texas, summary reports on past activities and products such as reference bibliographies, data bases, document reviews, conceptual and numerical analyses for retention. It is estimated this effort will require at least one (1) trip to the CNWRA in San Antonio, Texas of approximately three (3) days duration. All technology transfer activities shall be completed within five (5) months.

TASK 5 (45%): PREPARATION AND REVIEW OF ISSUE-RELATED TECHNICAL REPORTS
FOR POTENTIAL DOE HLW REPOSITORY SITES

Based on work done previously by the NRC and by the contractor under previous tasks of this contract, specific hydrogeologic site issues will have been identified and refined for each site identified by DOE as a potential HLW repository site. Specific issues are usually questions about significant conditions and processes (information needed) that must be considered in assessing the performance objectives of 10 CFR 60. During NRC's review of DOE site characterization programs, specific technical questions or concerns are anticipated to arise related to:

- A) Information needed to resolve issues.
- B) Degree to which existing information, investigative methodology and techniques serve to resolve issues.
- C) Adequacy of DOE plans to resolve issues.

Technical reports prepared by the contractor under this subtask will be used as technical support in preparation of either specific Site Technical Positions (STP's) or Generic Technical Positions (GTP's) by NRC technical staff. Given the uncertain and anticipated variable nature of these reports it is impossible to specify either topical areas or level of effort required for any individual technical report at this time.

The contractor shall prepare issue related technical reports on topical areas identified and as directed by the NRC P.O. It is anticipated that efforts under this subtask will continue throughout the period of performance of this contract. The total level of effort for this subtask is anticipated not to exceed forty-five (45) percent of the total option year level of effort.

All exhibits referred to under Section C.1.3 are contained in Attachment No. 7 of this contract.

The total estimated level of effort for the option year requirement as specified above is 3.97 staff years of effort.