

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1 CONTRACT ID CODE

PAGE 1 OF PAGES

2 AMENDMENT/MODIFICATION NO

3 EFFECTIVE DATE

4 REQUISITION/PURCHASE REQ. NO.

5 PROJECT NO. (If applicable)

8

APR 26 2000

6 ISSUED BY

CODE

7 ADMINISTERED BY (If other than Item 6)

CODE

U.S. Nuclear Regulatory Commission
Division of Contracts and Property Mgt.
Attn: T-7-I-2
Contract Management Branch
Washington DC 20555

8 NAME AND ADDRESS OF CONTRACTOR (No. street, county, State and ZIP Code)

Modeling & Computing Services
6560 Gunpark Drive, Suite B
Boulder, CO 80301
Princ. Investigator: Ernest D. Eason
Telephone No.: (303) 530-4295

(X) 9A AMENDMENT OF SOLICITATION NO.

9B DATED (SEE ITEM 11)

10A MODIFICATION OF CONTRACT/ORDER NO
Con# NRC-04-97-060

10B DATED (SEE ITEM 13)

CODE

FACILITY CODE

X

09-05-1997

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 of 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.

12 ACCOUNTING AND APPROPRIATION DATA (If required)

31X0200.060 252A W6878
06015110105 Amount Obligated: \$80,214.01

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

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:

D OTHER (Specify type of modification and authority) Changes - Cost Reimbursement - Alternate I (Apr. 1984) FAR 52.243-2

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

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

(see page 2)

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)

Ernest D. Eason, Principal Engineer

16A NAME AND TITLE OF CONTRACTING OFFICER (Type or print)

Mary Mace, Contracting Officer

15B CONTRACTOR/OFFEROR

15C DATE SIGNED

16B UNITED STATES OF AMERICA

16C DATE SIGNED

Ernest D. Eason
(Signature of person authorized to sign)

4/26/00

Mary Mace
(Signature of Contracting Officer)

4/21/00

STANDARD FORM 30 (REV 10-83)

Template = ADM001

ADM02

The purpose of this modification is to (1) revise Section C.1 under the subject contract to incorporate the within-scope work to the subject contract as referenced in the attached Statement of Work and the contractor's proposal dated 4/12/00 is incorporated herein, (2) increase the contract ceiling amount by \$80,214.01 from \$447,768 to \$527,982.01 (3) increase the obligated amount by \$80,214.01 from \$447,768 to \$527,982.01, (4) revise Section D to include additional travel as referenced in the attached Statement of Work, (5) revise Section F.6 to extend the period of performance of the contract through 9/30/2001, and (6) revise Section G.1 to change the project officer under the contract. Accordingly, the contract is hereby modified as follows:

1. Section B.3, CONSIDERATION AND OBLIGATION--COST PLUS FIXED FEE (JUNE 1988) ALTERNATE I (JUNE 1991), paragraphs a, c, and d are deleted in their entirety and the following paragraphs are substituted in lieu thereof:
 - "a. The total estimated cost to the Government for full performance of this contract is \$527,982.01, of which the sum of \$488,872.24 represents the estimated reimbursable costs, and of which \$39,109.78 represents the fixed fee."
 - "c. The amount currently obligated by the Government with respect to this contract is \$527,982.01.
 - d. It is estimated that the amount currently allotted will cover performance through 9/30/2001."
2. Section F.6, DURATION OF CONTRACT PERIOD, is deleted in its entirety and the following paragraph is substituted in lieu thereof:

"This contract shall commence on 9/5/97 and will expire on 9/30/2001."

3. Section G.1, NRCAR 2052.215-71 PROJECT OFFICER AUTHORITY, is revised to change the project officer as follows:

"Name: Mark Kirk

Address: U.S. Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Division of Engineering Technology
11545 Rockville Pike, M/S T-10E10
Rockville, Maryland 20852

Telephone Number: (301) 415-6015"

All other terms and conditions under this contract remain unchanged.

A summary of obligations for this contract, from award date through the date of this action, is given below:

Total FY 97 Obligation Amount:	\$150,000
Total FY 98 Obligation Amount:	\$125,000
Total FY 99 Obligation Amount:	\$100,000
Total FY 2000 Obligation Amount:	\$152,982.01

Cumulative Total of NRC Obligations: \$527,982.01

This modification obligates NRC FY 2000 funds in the amount of \$80,214.01.

SCOPE OF WORK

NRC-04-97-060

SCOPE OF WORK

Section C.1, paragraph C, Scope of Work and Requirements, is modified to include the following:

1. Tasks 2 and 5 are deleted entirely.
2. The FY2000 budget originally committed to Tasks 2, 3, and 5 is redirected to Tasks 6 and 8, which are revised by items 4 and 5 of this modification.
3. Task 3 is revised as follows: Perform independent statistical analysis related to the implementation of RT_{T_0} determined from Master Curve techniques as an alternative to RT_{NDT} . Work on Task 3 is deferred to fiscal year 2001.
4. The contractor shall expand the work being performed under Task 6 (Re-evaluation of Charpy Embrittlement Equation) as follows:
 - Finalize data entry into the database by obtaining available missing data, if possible. Database is to be finalized and not further modified (other than error correction) within 2 weeks of acceptance of the contract modification.
 - Resolve remaining questions regarding the possibly related effects of a manufacturer / material bias, and/or a time/temperature term.
 - Re-calibrate the Charpy Embrittlement Equation using all data available within 30 days of acceptance of the modification.
 - Establish technical collaboration with Professor G. Robert Odette (retained under a separate NRC contract) to establish and document a physical basis for the effects described by the Charpy Embrittlement Equation.
 - Document the statistical basis and rationale for all terms in the Charpy Embrittlement Equation.
 - Provide statistical analysis to NRC staff as part of the on-going effort to draft Revision 3 of USNRC Regulatory Guide 1.99.
5. The contractor shall expand the work being performed under Task 8 (Statistical Analysis of Chemistry Variations and Their Effect on Application of the Embrittlement Correlation) as follows:
 - Analyze the validity of using small numbers of Charpy transition temperature shifts from the surveillance program to back-calculate a heat and plant-specific chemistry for regulatory purposes. Provide the technical justification for a

statistically-based surveillance program screening criterion to identify and treat large deviations from embrittlement model predictions at specific plants.

- Provide technical justification based on the revised Charpy Embrittlement Equation for the continued use or abandonment of the "Ratio" procedure as outlined currently in Regulatory Guide 1.99 (Rev 2).
- Provide technical expertise to NRC PRA staff to ensure that the uncertainty analysis performed in this task is conducted in a manner consistent with that needed for input to the on-going probabilistic risk assessment of pressurized thermal shock.

PERIOD OF PERFORMANCE

Extend the period of performance to 9/30/01.