

<b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>			1. CONTRACT ID CODE	PAGE 1 OF PAGES
2. AMENDMENT/MODIFICATION NO. 9	3. EFFECTIVE DATE <b>FEB 16 2001</b>	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)	
6. ISSUED BY U.S. Nuclear Regulatory Commission Division of Contracts and Property Mgt. Attn: T-7-I-2 Contract Management Branch Washington DC 20555	CODE	7. ADMINISTERED BY (If other than Item 6)	CODE	
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. <b>NRC-04-97-060</b>	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. 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)  
 31X0200.160 252A W6878  
 16015110105 Amount Obligated: \$99,970.00

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

**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 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) <b>Ernest D. Eason, Principal</b>	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) <b>Mary Mace, Contracting Officer</b>
15B. CONTRACTOR/OFFEROR <b>Modeling &amp; Computing Services</b>	16B. UNITED STATES OF AMERICA
15C. DATE SIGNED <b>2/16/01</b>	16C. DATE SIGNED <b>2/13/01</b>
(Signature of person authorized to sign) <i>Ernest D. Eason</i>	(Signature of Contracting Officer) <i>Mary Mace</i>

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 1/15/01 is incorporated herein, (2) increase the contract ceiling amount by \$99,970.00 from \$527,982.01 to \$627,952.01 (3) increase the obligated amount by \$99,970.00 from \$527,982.01 to \$627,952.01, and (4) revise Section D to include additional travel as referenced in the attached Statement of Work. 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 \$627,952.01, of which the sum of \$581,437.23 represents the estimated reimbursable costs, and of which \$46,514.78 represents the fixed fee."
  - "c. The amount currently obligated by the Government with respect to this contract is \$627,952.01.
  - d. It is estimated that the amount currently allotted will cover performance through 9/30/2001."

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 1997 Obligation Amount:	\$150,000.00
Total FY 1998 Obligation Amount:	\$125,000.00
Total FY 1999 Obligation Amount:	\$100,000.00
Total FY 2000 Obligation Amount:	\$152,982.01
Total FY 2001 Obligation Amount:	\$ 99,970.00

Cumulative Total of NRC Obligations: \$627,952.01

This modification obligates NRC FY 2001 funds in the amount of \$99,970.00.

## SCOPE OF WORK

### Scope of Work

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

1. Task 3 is deleted entirely.
2. The FY 2000 budget originally committed to Task 3 is redirected to Tasks 6 and 8, which are revised by items 3 and 4 of this modification.
3. The contractor shall expand the work being performed under Task 6 (Re-evaluation of Charpy Embrittlement Equation) as follows:
  - Finalize documentation on development of a new embrittlement trend curve and provide as a letter report.
  - Assist NRC Staff in the development of a NUREG describing the technical basis for Revision 3 to Regulatory Guide 1.99.
4. Work originally described in Modification No. 8 to this contract that was planned for completion in FY 2000 was not completed by M&CS for two reasons: (a) due to unanticipated complexities associated with the development of the new embrittlement trend curve, and (b) due to unanticipated delays in provision of NRC staff comments to M&CS. Consequently, the work described in Modification No. 8 for Task 8 is now planned for completion in FY 2001. For reference, this work is described below.

#### Task 8 Work Described Originally in Modification No. 8

- 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

Date of Modification No. 9 through 9/30/2001.