APR 4 2000

Modeling & Computing Services
ATTN: Ernest D. Eason, Principal
6560 Gunpark Drive, Suite B
Boulder, CO 80301

Dear Mr. Eason:

Subject: Request for Proposal for Additional Work under Contract No. NRC-04-97-060 Entitled, "Statistical Analysis of Fracture Toughness Behavior of Reactor Pressure Vessels"

A proposal is requested for the performance effort described in the enclosed Statement of Work (ENCLOSURE 1). Your proposal is due within five calendar days of this request and shall consist of two parts: a technical approach and a cost estimate. Please include in the cost proposal a breakdown of all estimated travel costs for the effort.

As a minimum, the technical approach shall substantiate your understanding of the requirements of the modification, note any anticipated problem areas or deviations from the Statement of Work, identify key personnel who will perform the work, include resumes of those personnel not already in the contract, and any potential conflict of interest issues. The following certification must be submitted with your proposal:

"I represent, to the best of my knowledge and belief that the award to Modeling & Computing Services under Contract No. NRC-04-97-060 does / / or does not / / involve situations or relationships of the type set forth in 41 CFR 20-1.5403 (b)(1)."

You are also required to identify any current/former NRC employees who have been or will be involved, directly or indirectly, in developing the proposal, or in negotiating on behalf of your firm, or in managing, administering or performing any contracts, consultant agreement or subcontract resulting from this proposal (list name, title, and date individual left NRC and provide a brief description of the individual's role under this proposal). If there are no current/former NRC employees involved, a negative statement is required.

The second part of your proposal shall be your cost estimate, prepared using the enclosed Standard Form 1411 (ENCLOSURE 2) or a similar format.

Template= ADM001

ADM02

It is brought to your attention that the Contracting Officer is the only individual who can legally commit the Government to the expenditure of public funds in connection with this proposed procurement. Accordingly, work on this proposed effort shall not commence without prior Contracting Officer authorization.

Your proposal should be sent to the U.S. Nuclear Regulatory Commission, ATTN: Paulette Smith, Division of Contracts and Property Management, Mail Stop: T-7-I-2, ADM/DCPM/CMB1, Washington, DC 20555. Proposals delivered by hand, including delivery by any express mail services or special delivery services which use a courier or other person to deliver the responses in person to the NRC, should be addressed in accordance with the foregoing and delivered to:

U.S. Nuclear Regulatory Commission
Division of Contracts and Property Management, T-7-I-2
ATTN: Paulette Smith
11545 Rockville Pike
Rockville, MD 20852-2738

The proposal shall be signed by an official authorized to bind your organization, and it shall contain a statement indicating the period of time the proposal is in effect (not less than 60 days).

Any questions you may have regarding this matter should be addressed to me on (301) 415-6594.

Sincerely,

Paulette Smith, Contract Specialist
Contract Management Branch 1
Division of Contracts and
Property Management
Office of Administration

Enclosures: As stated
DISTRIBUTION: PSMITH R/F CMB1 R/F MKIRK, PO
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4/ 4/00 Copy of 97-060rfpltr8 Smith

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_{To} 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.

LEVEL OF EFFORT: .67 FTE