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Mr. Charles E. Williams
Idaho Operations Office
U. S. Department of Energy
550 Second Street
Idaho Falls, ID 83401

Dear Mr. Williams:

Subject: Modification to INEL Technical Assistance to the Division of
Systems Safety, NRR - "Water Hammer Review and Evaluation"
(AG251)

Recent developments on Task Action Plan (TAP) A-1 has necessitated the
need for additional work under the subject program. Accordingly, the
tasks required have been developed and are described in the enclosed
statement of work. Please have INEL develop a proposal for this work
and submit it in four copies to:

Director, Division of Systems Safety
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555
ATTN: B. L. Grenier

This request for proposal is not an authorization to start work.
Authorization to commence work will become effective after acceptance
of an appropriately executed Standard Order for DOE Work, NRC Form 173.

If you have any questions about this request, please contact
Mr. B. L. Grenier on FTS 492-7932. Thank you for your assistance.

Original signed by
F. Schroeder

Frank Schroeder, Acting Director
Division of Systems Safety
Office of Nuclear Reactor Regulation

Enclosure: as stated

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cc: R. Darber, HQ-DOE
C. Oberchain, INEL

DSS
FSchroeder
10/26/79

OFFICE	RES	D/USITF	RSB	AD/RS	DSS	PSS/NRR
SURNAME	CBurger :ts	SHanauer	TSpeis	RDenise	BLGrenier	HBerkman
DATE	10/25/79	10/26/79	10/26/79	10/26/79	10/26/79	10/26/79

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MODIFICATION TO WATER HAMMER REVIEW AND EVALUATION PROGRAM

FIN: A6251

B&R Number: 20-19-06-09

Technical Monitor: Charles Burger

Cognizant Branch Chief: Themis Speis

Background

As a result of previous and current work on the "Water Hammer" issue, an improved safety significance of the problem in certain areas is required. This can be obtained by performance of certain technical analyses as described in the following additional tasks to the subject program:

Work Requirements

Task C

Using methods developed under Task Action Plan A-1, analyze the following two postulated water hammer cases:

Estimated Level of Effort: 1 man-month

Target Completion Date: December 31, 1979

1. A BWR primary feedwater line, containing a swing type check valve subjected to a postulated pipe rupture with the rupture occurring within one pipe diameter of the check valve.
2. A BWR core spray system with rapid startup of a centrifugal pump and a quick opening valve to produce flow into a voided line using NRC supplied parameters to the extent possible.

Task D

Identify additional water hammer scenarios, during normal and accident conditions that may not yet have occurred but have the potential to render redundant safety systems inoperable.

Estimated Level of Effort: 2 man-months

Target Completion Date: January 31, 1980

Task E

Develop the approximate magnitude of the hydraulic forces resulting from NRC selected scenarios from those identified in Task D above with the exception of any events caused by steam bubble collapse.

Estimated Level of Effort: 5 man-months

Target Completion Date: April 20, 1980

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Task F

Estimated Level of Effort: 1 man month

1. Draft Report of above tasks by May 23, 1980
2. Final Report incorporating NRC comments by June 30, 1980.

Level of Effort and Period of Performance

The level of effort is estimated at 9 man months over an 8 month period: November 1, 1979 to June 30, 1980

Reporting Requirements

1. At completion of each task, C, D and E, submit a letter report describing the input data and results to the technical monitor.
2. A monthly business letter shall be submitted to the cognizant branch chief with copies to the Director, Division of Systems Safety, the Director, Unresolved Safety Issues Program and the technical monitor. These business reports will be in accordance with agreed format and substance.
3. a. Three weeks after completion of Tasks C, D and E, a draft report describing the technical inputs and results will be submitted to the Technical Monitor.
b. After review and comment by NRC, a final reproduceable copy, prepared in accordance with NRC Manual Chapter 3202, will be submitted to the Cognizant Branch Chief.

Meetings and Travel

Two one-day meetings in Bethesda, Maryland should be planned.

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