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B.1.5.2

YANKEE ATOMIC ELECTRIC COMPANY



20 Turnpike Road Westborough, Massachusetts 01581 WYR 78-106 December 4, 1978

United States Nuclear Regulatory Commission Washington, D. C. 20555

Attention: Office of Nuclear Reactor Regulation

References: (a) License No. DPR-3 (Docket No. 50-29) (b) YAEC Letter to USNRC WYR 78-84, dated October 3, 1978

Dear Sir:

Subject: Mechanical/Structural Work Program for SEP/Asymmetric LOCA Loads

This letter transmits the current schedule for completing the work efforts discussed in Reference (b).

The activities committed to in Reference (b) are:

- Evaluate the magnitude of loads on the reactor vessel supports resulting from pipe breaks in the reactor coolant system, based on scaling from other plants;
- Develop necessary analytical models for determination of asymmetric LOCA loads;
- 3. Prepare a seismic assessment of major structures;
- Develop analytical models and piping analyses of Safety Class 1 and 2 piping inside containment; and
- 5. Upon completion of Item 4, postulate break locations and evaluate pipe breaks inside containment.

Our progress is as follows:

- Item 1 was intended to be a "quick look" effort at the magnitude of loads expected from the asymmetric LOCA loading phenomenon. The uniqueness of the Yankee Nuclear Power Station plant design has precluded any real effort in this area, so we have terminated the effort.
- 2. Item 2 has been expanded to address the effects of pipe breaks inside containment on all internal structures, i.e. subcompartment analysis of the loop areas, pressurizer cubicle and reactor cavity. It has been broken down into two sub-tasks - inside the reactor cavity and outside the reactor cavity. Proposals have been received for the ex-cavity portion and are being evaluated. Our intent is to meet with your staff to discuss

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the program prior to starting any work; we intend to complete this effort, which addresses the subcompartment portion of your Topic III-5.A by November, 1979.

We are currently evaluating proposals for the in-cavity portion of the programs and will inform you of our program when a decision is made.

- 3. Item 3 is being conducted in phases. The first step is to assess the approximate capability of the vapor container and concrete reactor support to withstand a seismic event. This is not a detailed analysis but rather an overview of the potential "weak" areas. This effort is currently underway and will be completed by January 1979. The scope of this effort will be expanded to other structures later.
- 4. Item 4 involves the development of an analytical model of the main coolant system and major attached piping. This effort is underway and will be completed by January 1979. Once this effort is completed and after a site seismic design basis is established, actual analyses of piping systems will commence.
- 5. The evaluation of pipe breaks inside containment for whip jet impingement and environmental effects will begin after the stress analyses in Item 4 are completed. Pipe break locations will be postulated using NRC guidelines and the effect of the breaks evaluated.

We trust this information will be satisfactory. If you have any questions, please call Mr. J. R. Hoffman of our Engineering Office at telephone No. 617-366-9011.

Very truly yours,

YANKEE ATOMIC ELECTRIC COMPANY

D. E. Vandenburgh Senior Vice President

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