

YANKEE ATOMIC ELECTRIC COMPANY



20 Turnpike Road Westborough, Massachusetts 01581

June 21, 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) NRC letter to YAEC dated June 7, 1978.
 - (c) YAEC letter to NRC dated February 21, 1978.
 - (d) NRC letter to YAEC dated January 25, 1978.

Dear Sir:

Subject: LOCA Loading on Primary System Components and Structures

This letter will serve to respond to Reference (b) and provide further technical support for Yankee's position regarding asymmetric LOCA loads and the appropriateness of evaluating that issue within the scope of the SEP program.

The design criteria established for the Yankee Nuclear Power Station did not require that direct consideration be given to the effects of main coolant system ruptures on components and structures. As described in Section 400 of the Final Hazards Summary Report, the effects of certain postulated accidents were assessed for their consequences to the health and safety of the public. These were bounding analyses and not considered credible accidents.

The defense in depth concept was utilized, i.e., a conservatively designed system that is highly resistant to failure backed up by an analysis that showed even if the unexpected were to occur no undue risk would result.

Since the design of Yankee Nuclear Power Station was completed technical evolutions have occurred which serve to reinforce the approach utilized in the original design.

The ANSI B31.1 Power Piping Code has been revised and allowable stresses for the materials utilized in the design of Yankee have been increased, in effect increasing the conservatism of the Yankee design.

For later generation plants, ANSI B31.7 or ASME Section III are utilized for the design of the reactor coolant system. Yankee has reviewed several designs where both ANSI B31.1 and ASME Section III were utilized

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for piping design and in all instances the ASME Section III design approach resulted in thinner required pipe wall thicknesses.

The NDE utilized during the construction of Yankee is comparable to that currently required by ASME Section III.

Since 1978 Yankee has been involved in an inservice inspection program on portions of the reactor coolant system intended to detect service related defects, thus further ensuring that potentially serious defects can be detected and repaired.

Also, as is the case in most designs, the actual operating and transient conditions are less severe than the design conditions. The plant has reached approximately half of its design life and experienced far fewer transients than the design assumed. Since the transients are the cause for crack development and propagation further conservatism is gained.

In summary, it is Yankee's position that the original design bases were appropriate, did not require specific analysis of LOCA related effects on structures and components and that events occurring since plant startup support even further conservatism in the plant design.

For these reasons, Yankee restates its position that the SEP is the appropriate forum for considering the need for the analyses requested by Reference (c).

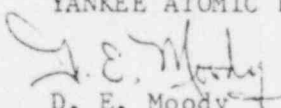
In order to assist the NRC in its review of this matter, Yankee has initiated a program to reanalyze the reactor coolant system utilizing ASME Section III Class 1 criteria.

We will inform you of the schedule for this effort as soon as it is available.

We shall be glad to discuss this issue further with your staff should you desire.

Very truly yours,

YANKEE ATOMIC ELECTRIC COMPANY


D. E. Moody
Manager of Operations

JRH/wpc

cc: Mr. Victor Stello - USNRC

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SUBJECT: RESPONSE TO NRC LTR OF 06/07/78... PROVIDING FURTHER TECHNICAL SUPPORT FOR APPLICANT'S POSITION RE ASYMMETRIC LOCA LOADS AND THE APPROPRIATENESS OF EVALUATING THAT ISSUE WITHIN SCOPE OF THE SEP PROGRAM.

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