

New Hampshire Yankee

Ted C. Feigenbaum
President and
Chief Executive Officer

NYN-91061

April 16, 1991

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

Attention: Document Control Desk

References: (a) Facility Operating License No. NPF-86, Docket No. 50-443
(b) NHY Letter SBN-891, dated November 13, 1985 "Plant Performance During a Steam Generator Tube Rupture; Outstanding Issue No. 17, Licensing Condition No. 18" J. DeVincentis to USNRC
(c) USNRC Safety Evaluation Report Related to the Operation of Seabrook Station Units 1 and 2 NUREG-0896, March 1983
(d) USNRC Safety Evaluation Report Related to the Operation of Seabrook Station Units 1 and 2, NUREG-0896 Supplement No. 4, May 1986

Subject: Analysis of a Postulated Design Basis Steam Generator Tube Rupture for Seabrook Station

Gentlemen:

New Hampshire Yankee committed in Reference (b) to perform a plant-specific Steam Generator Tube Rupture (SGTR) analysis and to submit such analysis prior to startup following the first refueling outage. The NRC found this schedule to be acceptable as stated in Reference (d) and determined that SGTR should be recategorized as a Confirmatory Issue (#45).

In fulfillment of NHY's commitment, a plant-specific design basis SGTR analysis report has been prepared and is enclosed herein for NRC review. The enclosed report entitled "Analysis Of A Postulated Design Basis Steam Generator Tube Rupture For The Seabrook Nuclear Power Station" was prepared by Yankee Atomic Electric Company for NHY. Yankee Atomic Electric Company personnel have been active participants in the Westinghouse Owners Group (WOG) SGTR subgroup of utilities which was formed in 1983 to address NRC questions regarding the adequacy of SGTR analyses. The WOG subgroup developed and submitted for NRC review a new SGTR analysis methodology and results for a reference plant.

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The WOG SGTR subgroup methodology was subsequently approved by the NRC with the requirement that each subgroup member submit a plant-specific analysis that includes the following elements:

- Simulator demonstration runs to support the operator action times used in the plant-specific analysis since the new analysis methodology credits operator action to mitigate the consequences of a design basis SGTR.
- An evaluation of the structural adequacy of the main steam lines and associated supports under water filled conditions is required even though the reference plant analysis demonstrated margin to steam generator overfill and acceptable radiation releases in the unlikely event that steam generator overfill did occur.
- A listing and safety classification of the systems, components, and instrumentation credited for SGTR mitigation in the plant-specific Emergency Operating Procedures (EOPs).
- Demonstration of the plant-specific applicability of all assumptions used in the analysis.

Each of the above elements is addressed in the enclosed report. The computer codes and some of the assumptions employed in this report differ from those in the NRC approved methodology, however the methodologies are fundamentally equivalent and all differences are described and justified.

The enclosed plant-specific SGTR analysis provides the following conclusions:

- Analysis results demonstrate that overfill of the faulted steam generator is not expected to occur. Nevertheless, a static load analysis of flooded main steam lines has been performed, as required by the NRC, demonstrating that the lines will remain intact in this highly unlikely consequence of a SGTR;
- The off-site radiological doses received at the exclusion area boundary and the low population zone boundary would be within the limits of 10CFR100 and the Standard Review Plan (SRP) guideline values;
- No plant design changes are required to support the analysis. Systems, components and instrumentation credited in the analysis for mitigation of the design basis SGTR are nuclear safety related, or are specifically noted and justified, and meet the single failure criteria for the required function.

The existing FSAR description of the SGTR analysis will be revised to reflect the enclosed plant-specific SGTR analysis subsequent to completion of NRC review.

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Please direct any questions regarding this letter to Mr. James M. Peschel, Regulatory Compliance Manager at (603) 474-9521, extension 3772.

Very truly yours,


Ted C. Feigenbaum

Enclosure; "Analysis Of A Postulated Design Basis Steam Generator Tube Rupture For The Seabrook Nuclear Power Station" YAEC-1698, A.E. Ladieu et al.

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