# YANKEE ATOMIC ELECTRIC COMPANY

Telephone (508) 779-6711 TWX 710-380-7619



580 Main Street, Bolton, Massachusetts 01740-1398

January 31, 1991 BYR 91-012

United States Nuclear Regulatory Commission Document Control Desk Washington, DC 20555

- References: (a) License No. DPR-3 (Docket No. 50-29)
  - (b) USNFC Generic Letter 89-19, "Request for Action Related to Resolution of Unresolved Safety Issue A-47 'Safety Implications of Control Systems in LWR Nuclear Power Plants' Pursuant to 10CFR50.54 (f)," dated September 20, 1989
  - (c) YAEC Letter to NRC, "Response to Generic Letter 89-19, Safety Issue A-47, 'Safety Implication of Control Systems in LWR Nuclear Power Plants'," dated March 19, 1990
  - (d) YAEC Letter to NRC, "Response to Commitment to Provide Scope and Schedule for Confirmatory Analysis by January 31, 1991," dated July 2, 1990

Subject: Yankee Nuclear Power Station (YNPS) Response to GL 89-19, Steam Generator Overfill Protection

Dear Sir:

The NRC staff concluded in Reference (b) that all PWR plants should provide automatic steam generator overfill protection to mitigate main feedwater overfeed events during reactor power operation. Reference (b) also indicated that if a plant did not plan to implement these recommendations, appropriate justification should be provided.

Yankee provided a preliminary assessment in Reference (c) based upon the design of the YNPS Feedwater System, steam generator overfill scenarios (including human factors), impact on risk, and other unique factors. The preliminary assessment indicated that additional hardware and procedural modifications to further achieve steam generator overfill protection were not warranted.

Yankee committed in Reference (d) to performance of additional analyses by January 31, 1991 to confirm the conclusions of the preliminary assessment.

Yankee's additional investigations continue to indicate that on a plant-specific basis the potential for safety risk reduction benefit of additional steam generator overfill protection is less than the generic assessment and that the generic cost-benefit assessment is inappropriate for YNPS.

9102070021 91013 PDR ADOCK 05000

United States Nuclear Regulatory Commission Document Control Desk January 31, 1991 Page 2 BYR 91-012

However, other considerations, not previously addressed in References (b), (c), and (d), have resulted in a Yankee decision to install additional steam generator overfill protection. Specifically, consideration of investment protection has resulted in a decision to provide additional protection for the turbine by installation of the system described in the attachment. The system design will be consistent with the guidance for acceptable designs provided for Westinghouse-designed PWR plants, Group III (i.e., which includes YNPS), provided in Enclosure 2 to GL 89-19 (Reference (b)) and will be installed during the refueling outage currently scheduled for February 1994.

If you have any questions or require further information, please contact us.

Very truly yours,

YANKEE ATOMIC ELECTRIC COMPANY

/K. Thayer

Vice President and Manager of Operations

JKT/mma/WPP44/186

COMMONWEALTH OF MASSACHUSETTS) )ss WORCESTER COUNTY )

Then personally appeared before me, J. K. Thayer, who, being duly sworn, did state that he is a Vice President and Manager of Operations, that he is duly authorized to execute and file the foregoing document in the name and on the behalf of Yankee Atomic Electric Company and that the statements therein are true to the best of his knowledge and belief.

Helen 10 Samanar	
Helen D. Sammarco	Notary Public
My Commission Expires	November 7, 1991

Enclosure

cc: USNRC - Resident Inspector USNRC - Region 1

## ATTACHMENT A

## STEAM GENERATOR OVERFILL PROTECTION SYSTEM

## SYSTEM DESCRIPTION

## Ceneral

The new Steam Generator Overfill Protection System will provide the following if a high level condition occurs concurrently on the narrow range level trip channel <u>AND</u> the wide range level indication/alarm channel on any steam generator. (A Hi-Hi Level Trip System):

- A trip of the main boiler feed pumps,
- · Opening of the condensate recirculation valve (to maintain vacuum), and
- If power level is greater than 15 MWe, a reactor trip.

## Description

The Steam Generator Overfill Protection System consists of a two-out-of-two high level trip system. Two existing instrument channels on each steam generator that are independent of the instrument channels for level and feed control will be used. These channels consists of the narrow range steam generator level reactor trip channel and the wide range steam generator level indication and alarm channel. These channels are safety related and require the application of the full Quality Assurance Program; therefore, the additional hardware, bistable, will meet the same requirements.

The system will operate a trip matrix which is powered from the same source as the other reactor protective equipment. On a Hi-Hi level on any steam generator this will operate an auxiliary relay to initiate the trip functions described above. Additionally, a main control board annunciator will be actuated, and a signal will be sent to the sequence of events recorder. A power monitoring relay will annunciate on the main control board in the event of loss of power to the trip matrix as is done with the other trip matrices.

The Hi-Hi level trip devices will be powered from the same sources as their respective level channels in which they are installed, i.e., Vital Buses No. 1 and No. 2.

The system will be provided with a TEST BYPASS switch which annunciates on the main control board if in "BYPASS". Procedures will provide for testing the instrumentation on a refueling basis.