

# YANKEE ATOMIC ELECTRIC COMPANY



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PC-210

March 23, 1988

FYR-88-37

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

Reference: (a) License No. DPR-3 (Docket No. 50-29)

Subject: Request for Change to Technical Specification Requirements in  
Mode 3 Shutdown Margin

Dear Sir:

Pursuant to Section 50.59 of the Commission's Rules and Regulations, the Yankee Atomic Electric Company hereby requests the authorization to make the following changes:

## Proposed Change

### Item 1

We propose to modify Technical Specification 3.1.1.1.2 to change the shutdown margin switching temperature from 490°F to 470°F. This change is also reflected in Note 2 of Technical Specification 3.3.2, Table 3.3-2, and Bases 3/4.1.1.1. Revised pages containing the proposed change are attached.

### Item 2

- A. Change Surveillance Requirement 4.1.1.2.1 to 4.1.1.1.2.1.
- B. Relabel Subpart (a) to the above surveillance requirement as Subpart (b), and insert new Subpart (a) concerning the determination of shutdown margin following the detection of an inoperable control rod while in Mode 3. A revised page containing the proposed change is attached.

## Reason for Change

### Item 1

The change will increase operational flexibility during Mode 3 operation. During Mode 3 operation with the nonreturn valves open, following

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an unplanned shutdown, the average main coolant temperature often decreases to below 490°F. In addition, during coastdown it is possible to operate with average main coolant temperature less than 490°F in Mode 1, thereby, making a transition to Mode 3 with average main coolant temperature less than 490°F impossible to avoid. Both of these conditions have made large borations necessary in the past.

Item 2

- A. This change merely corrects a typographical error.
- B. This change corrects an omission in the Mode 3 shutdown margin surveillance requirement which dates back to the initial conversion to standard Technical Specifications at the Yankee plant.

Bases for Change

Item 1

The current Technical Specification specifies two different shutdown margin requirements in Mode 3 depending on average main coolant temperature. These requirements change at the transition temperature of 490°F. For temperatures greater than or equal to 490°F, the required shutdown margin is 6%  $\Delta p$  or greater as based on the conditions existing at 516°F. For temperatures greater than or equal to 330°F, but less than 490°F, the required shutdown margin is 5%  $\Delta p$  or greater as based on the conditions existing at 330°F.

These temperature effects on shutdown margin are graphically shown in Figure 1. The transition temperature on the shutdown margin requirement is still needed because nonautomatic operations of SI actuation and NRV closure are allowed below the transition temperature. The availabilities of these functions influence the shutdown margin requirement due to the response of the plant to MSLB. However, our evaluations of MSLB analyses show that the transition temperature can be changed from 490°F to 470°F as shown in Figure 1. There is a sufficient amount of shutdown margin to preclude recriticality during either the postulated MSLB accident with the automatic trip functions or without. Since the current transition temperature (490°F), to block the automatic trip functions, was basically chosen as a lower end of practical operating limit during full-power condition, changing it to 470°F is acceptable.

Item 2

There exists within standard Technical Specifications, a Mode 1 through 5 surveillance requirement concerning the determination of shutdown margin within one hour and once per 12 hours thereafter following the discovery of an inoperable control rod. During the conversion of Yankee Technical Specifications to standard Technical Specifications, this requirement was inadvertently left out of the Mode 3 specification.

Safety Consideration

Item 1

This change is requested in order to provide flexibility in plant operation by lowering the transition temperature of shutdown margin requirement in Mode 3. As such, this proposed change would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated. This change merely lowers the transition temperature for the automatic trip functions to actuate SI and NRV closure as well as for shutdown margin requirements. Therefore, the change cannot increase the probability or consequences of an accident, as the shutdown margin will remain sufficient in Mode 3.
2. Create the possibility of a new or different kind of accident from any previously analyzed. This modification will not result in a new failure mechanism which could initiate an accident. Therefore, the proposed change will not create the possibility of a new or different kind of accident.
3. Involve a significant reduction in a margin of safety. Our evaluations show that shutdown margin provided by the proposed change is sufficient to preclude recriticality in the event of a postulated MSLB accident. Thus, this change does not involve a significant reduction in a margin of safety.

Item 2

This change is requested to correct two administrative oversights, a typographical error, and the previous omission of a Mode 3 shutdown margin surveillance requirement. As such, this proposed change would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated.
2. Create the possibility of a new or different kind of accident from any previously analyzed.
3. Involve a significant reduction in a margin of safety.

Based on the consideration contained herein, it is concluded that there is reasonable assurance that operation of the Yankee plant, consistent with the proposed Technical Specifications, will not endanger the health and safety of the public. This proposed change has been reviewed by the Nuclear Safety Audit and Review Committee.

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An application fee of \$150.00 is enclosed in accordance with 10CFR170.21.

These changes to the Yankee Technical Specifications will be implemented upon Commission approval. A timely review and approval of this submittal would be appreciated.

Very truly yours,

Wm. L. Burdette

BLD/16.46

COMMONWEALTH OF MASSACHUSETTS )  
 ) ss  
MIDDLESEX COUNTY )

Robert H. Green

Robert H. Groce	Notary Public
My Commission Expires	August 29, 1991