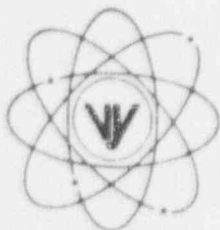


VERMONT YANKEE NUCLEAR POWER CORPORATION



Ferry Road, Brattleboro, VT 05301-7002

REPLY TO
ENGINEERING OFFICE
580 MAIN STREET
BOLTON, MA 01740
(508) 779-6711

August 9, 1996
BVY 96-98

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

- References:
- (a) License No. DPR-28 (Docket No. 50-271)
 - (b) Letter, GE to NRC, 10CFR21 Reportable Condition, Safety Limit MCPR Evaluations, dated 5/24/96
 - (c) NEDE-24011-P-A-11, GESTAR II, General Electric Standard Application for Reactor Fuel, dated 11/17/95
 - (d) Letter, GE to VYNPC, SLMCPR Calculation for Vermont Yankee Reload 18/Cycle 19, JLT96035, dated 8/5/96
 - (e) Letter, GE to VYNPC, SLMCPR Update, JLT96012, dated 5/23/96
 - (f) Improved Standard Technical Specifications, BWR/4 Plants, NUREG-1433 Rev.1

Subject: Proposed Change No. 186, Safety Limit - Minimum Critical Power Ratio

Pursuant to Section 50.90 of the Commission's Rules and regulations, Vermont Yankee Nuclear Power Corporation hereby proposes the following changes to the facility Operating License [Reference (a)].

Proposed Change

These changes propose to revise the Safety Limits for Minimum Critical Power Ratio (MCPR) based upon a Vermont Yankee plant and cycle specific analysis, performed by General Electric.

Specifically, the changes are as follows:

- (1) Page 6, Specification 1.1.A. Replace the specified Safety Limit MCPR values for Cycle 19 with new limits based upon a plant and cycle specific analysis.
- (2) Page 12, Bases for Specification 1.1.A. Revise Bases to provide additional information consistent with the incorporation of item 1 above.
- (3) Page 142, Bases for Specification 3.6.D and 4.6.D. Revise Bases to reference the Fuel Cladding Integrity Safety Limit in place of reference to MCPR >1.06.
- (4) Page 227, Bases for Specification 3.11.C. Revise Bases statement from a 0.01 to 0.02 increase in MCPR to account for single loop operation uncertainties.

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Reason/Basis for Change

Reference (b) identified that the General Electric generic analysis which determines the Safety Limit Minimum Critical Power Ratios (SLMCPRs) for each fuel design may not be conservative for some bundle and core designs. Therefore, General Electric performed Vermont Yankee cycle-specific SLMCPR analyses and determined that the SLMCPRs for Vermont Yankee's Cycle 19 should be 1.10 for two loop operation and 1.12 for single loop operation [Reference (d)]. General Electric also determined that the existing SLMCPRs of 1.07 and 1.08 are bounding for the current Cycle 18 [Reference (e)]. Even though both Cycles 18 and 19 contain the same fuel bundle types, GE-9B, the higher Cycle 19 SLMCPRs resulted from the cycle-specific core design and the local power distribution in the slightly higher enriched fresh GE-9B fuel bundles. Future fuel cycles will require a similar SLMCPR analysis to reconfirm that these values remain bounding.

The Bases for section 1.1.A are modified to reflect these changes and also to incorporate a more detailed discussion utilizing the guidance contained in the Improved Standard Technical Specifications [Reference (f)].

Bases for sections 3.6.D and 3.11.C are similarly modified to reflect these changes.

Safety Considerations

The purpose of the Safety Limit MCPR is to provide statistical probability that 99.9% of the fuel rods in the core would not experience transition boiling during the most limiting analyzed transient. While transition boiling in a BWR does not in and of itself signal the onset of fuel cladding failure, this criterion has been selected as a conservative and convenient parameter for the evaluation of fuel designs. Revision of this Safety Limit is based upon General Electric's NRC-approved GESTAR II methodology using plant and cycle specific Vermont Yankee inputs. The existing Vermont Yankee Safety Limit MCPR is based upon generic GE analysis, which has been verified to be appropriate for the remainder of the current cycle. No plant hardware or operational changes are required with this proposed change.

This Proposed Change has been reviewed by the Vermont Yankee Plant Operations Review Committee and the Vermont Yankee Nuclear Safety Audit and Review Committee.

Significant Hazards Consideration

The Standards used to arrive at a determination that a request for amendment involves no significant hazards are included in the Commission's regulations (10CFR50.92) which state that operation of the facility in accordance with the proposed amendment 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 accident previously evaluated, or (3) involve a significant reduction in a margin of safety. In addition, the Commission has provided guidance in the practical application of these criteria in 51FR7751, dated March 6, 1986.

The discussion below addresses each of these criteria and demonstrates that the proposed amendment involves no significant hazards consideration.

- (1) The Safety Limit Minimum Critical Power Ratio (MCPR) is defined to ensure that during normal operation and Anticipated Operational Transients (AOTs), at least 99.9% of the fuel rods in the core do not experience transition boiling. Core MCPR operating limits are developed to

ensure these Safety Limits are maintained in the event of the worst case transient. Since the Safety Limit MCPR will be maintained at all times, operation under the proposed changes will ensure at least 99.9% of the fuel rods in the core do not experience transition boiling and no significant radiological release will result. Therefore, this Safety Limit MCPR change does not affect the probability or consequences of a previously evaluated accident.

- (2) The proposed changes do not involve any new modes of operation or any plant modifications. Establishment and monitoring of the operating limits will continue as per established procedure. The proposed changes to these limits do not result in the creation of any new precursors to an accident. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously analyzed.
- (3) The Safety Limit MCPR values were evaluated by General Electric based upon a cycle specific Vermont Yankee analysis, using NRC approved methods. The resulting limits are more conservative than the previous generic limits and will continue to assure that at least 99.9% of the fuel rods in the core do not experience transition boiling during analyzed transients. This acceptance criteria ensures the safety design limit of "no damage to a nuclear system process barrier shall result from forces associated with AOTs". Therefore, the implementation of this proposed change does not involve a significant reduction in the margin of safety.

Schedule of Change

The proposed change will be incorporated into the Vermont Yankee Technical Specifications as soon as practicable following receipt of your approval.

We trust that the information provided adequately supports our request, however, should you have any questions in this matter, please contact this office.

Sincerely,

VERMONT YANKEE NUCLEAR POWER CORPORATION



Donald A. Reid
Vice President, Operations

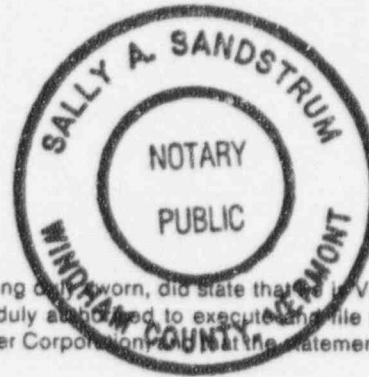
Attachments

cc: USNRC Region 1 Administrator
USNRC Resident Inspector - VYNPS
USNRC Project Manager - VYNPS

STATE OF VERMONT)

WINDHAM COUNTY)

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Then personally appeared before me, Donald A. Reid, who, being duly sworn, did state that he is Vice President, Operations, of Vermont Yankee Nuclear Power Corporation, that he is duly authorized to execute and file the foregoing document in the name and on the behalf of Vermont Yankee Nuclear Power Corporation and that the statements therein are true to the best of his knowledge and belief.

A handwritten signature of Sally A. Sandstrum in cursive script.

Sally A. Sandstrum, Notary Public
My Commission expires February 10, 1999