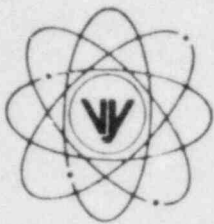


VERMONT YANKEE NUCLEAR POWER CORPORATION



RD 5, Box 169, Ferry Road, Brattleboro, VT 05301

2.C.2.1
FVY 83-9

REPLY TO:

ENGINEERING OFFICE

1671 WORCESTER ROAD
FRAMINGHAM, MASSACHUSETTS 01701
TELEPHONE 617-872-8100

February 22, 1983

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

Attention: Office of Nuclear Reactor Regulation
Mr. Domenic B. Vassallo, Chief
Operating Reactors Branch No. 2
Division of Licensing

References: (a) License No. DPR-28 (Docket No. 50-271)
(b) Letter, USNRC to VYNPC, SER, dated November 27, 1981
(c) Letter, USNRC to VYNPC, SER, dated September 15, 1982

Subject: Cycle 10 Core Performance Analysis

Dear Sir:

The purpose of this letter is to transmit the enclosed report, "Vermont Yankee Cycle 10 Core Performance Analysis Report." YAEC-1342, for your information. This report presents the Cycle 10 performance analysis results using methods developed by Vermont Yankee. The methods are described in detail in methods description reports previously submitted to you and referenced in YAEC-1342. Together, these documents form the technical basis for the reload analysis.

The results of the Cycle 10 core performance analysis indicate that the margins of safety provided by limiting conditions of operation specified in the present facility Technical Specifications are not reduced. Further, since the fuel being inserted is of the same design and fabrication as that used in the past cycle, it does not create the possibility for accidents or malfunctions of a different type than previously evaluated. Therefore, we have determined, pursuant to 10CFR50.59, that there is no need to submit a proposed change to Technical Specifications and have concluded that the Cycle 10 reload does not constitute an unreviewed safety question. Additional information and analyses which support our determination are provided in the "Cycle 10 Core Performance Analysis Report."

As a result of recent discussions with members of your staff, we understand that you have concerns regarding the use of reload analysis methods which are still under review by the NRC. The majority of our methods have been reviewed and approved, as described in References (b) and (c). For those methods still under review, particularly the calculation of the fuel steady-state thermal performance, the NRC found the end results of the calculational methods to be acceptable for Cycle 9 [See Reference (b)]. Since the fuel design for Cycle 10 is identical to that for Cycle 9, the only cycle

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dependent results from these calculations are the core average and hot channel gap conductance values. These are provided as input to the core-wide and hot channel transient performance analyses.

The core average gap conductance at End of Cycle (EOC) 10 is calculated to be approximately ten percent higher than at EOC 9. These results are consistent with predicted changes in the batch power and burnup histories and the transition to a full core of pressurized fuel design. For the hot channel gap conductance calculation, steps were taken to include conservative, bounding assumptions in the analysis of Cycle 10. These are described in detail in the "Cycle 10 Core Performance Analysis Report."

This conservative approach resulted in Cycle 10 gap conductance values more conservative than those which were found to be acceptable for use in Cycle 9. As described in the "Cycle 10 Core Performance Analysis Report," this approach has been adopted to simplify the analysis procedure for future cycles of operation. The reported MCPR values for Cycle 10 are more limiting than those values which would have been calculated using either the calculational assumptions or the gap conductance values employed in Cycle 9.

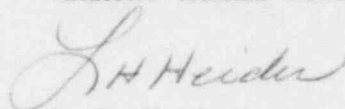
The Vermont Yankee reload analysis methods have received extensive review and application, both at Yankee Atomic Electric Company and, in many cases, national laboratories, EPRI, and other utilities. The methods have been qualified with industry-standard data sets and standard problems. The results of the analyses have not shown unexpected trends or deviations from previous analysis.

For these reasons, we believe the concerns raised by your staff do not constitute an unreviewed safety question, as defined in 10CFR50.59. This determination has been reviewed by the Vermont Yankee Nuclear Safety Audit and Review Committee.

We trust that this information is satisfactory; however, should you have any questions, please contact us.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION



L. H. Heider
Vice President

JBS/dd

Enclosure

YANKEE ATOMIC ELECTRIC COMPANY

