VERMONT YANKEE
NUCLEAR POWER CORPORATION

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FVY 84-50
REPLY TO:
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TELEPHONE 617-872-8100

May 17, 1984

U.S. 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) Appendix A to Operating License No. DPR-28 (Docket No. 50/271)
c) Letter, USNRC to VYNPC, SER, dated 11/27/81
d) Letter, USNRC to VYNPC, SER, dated 9/15/82
e) Letter, VYNPC to USNRC, FVY 83-9, YAEC-1342, dated 2/22/83
f) Telecon, J.B. Sinclair to V. Rooney, dated 4/19/84

Dear Sir:

Subject: Cycle 11 Core Performance Analysis

The purpose of this letter is to transmit the enclosed report, "Vermont Yankee Cycle 11 Core Performance Analysis Report", YAEC-1403, for your information. This report presents the Cycle 11 core 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-1403. Together, these documents form the technical basis for the reload analysis.

The results of the Cycle 11 core performance analysis indicate that the margins of safety provided by limiting conditions of operation specified in the present facility Technical Specifications (Reference b) are not reduced. Therefore, we have determined, pursuant to 10CFR50.59, that there is no need to submit a change to Technical Specifications.

The fuel inserted in Cycle 11 is essentially the same design and fabrication as that used in past cycles. Minor mechanical changes have been made (primarily to the end plugs and tie plates) to accommodate higher discharge exposures. The nuclear, hydraulic, thermal, and mechanical design parameters used in the physics, transient and accident evaluations are not affected. Therefore, we have determined, pursuant to 10CFR50.59, that there are no changes in the probability of occurrence or the consequences of an accident or malfunction previously evaluated.

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ADD: Reb Files

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The methods described in References c) and d) have been reviewed and approved by the NRC. With regard to the methods of calculating the fuel steady-state thermal performance, which is still under review, the NRC found the end results acceptable for Cycle 9 (Reference c). Relative to Cycle 9, steps were taken to include conservative bounding assumptions in calculating the hot channel gap conductance. This approach results in Cycle 11 gap conductance values more conservative than those which were found to be acceptable for use in Cycle 9. The resulting MCPR values report in the Cycle 11 Core Performance Analysis 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.

This conservative approach was also used in the Vermont Yankee Cycle 10 Core Performance Analaysis (Reference e). Recent discussions with members of your staff (Reference f) have confirmed that the same approach is acceptable for Cycle 11. A complete description is included in YAEC 1403, attached.

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 results of the analyses have not shown unexpected trends or deviations from previous analysis. For these reasons and all the above reasons, we have determined, pursuant to 10CFR50.59, that there are no unreviewed safety questions relative to the operation of the Cycle 11 core. This determination has been reviewed by the Plant Operations Review Committee and 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

Richard W. Burke for

Warren P. Murphy
Vice President and
Manager of Operations

WPM/dm

YANKEE ATOMIC ELECTRIC COMPANY