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Docket No. 50-271

Mr. J. B. Sinclair
 Licensing Engineer
 Vermont Yankee Nuclear Power
 Corporation
 1671 Worcester Road
 Framingham, Massachusetts 01701

September 16, 1982

Dear Mr. Sinclair:

The Commission has issued the enclosed Amendment No. 72 to Facility License No. DPR-28 for the Vermont Yankee Nuclear Power Station. The Amendment is in response to your application of August 18, 1982 as supplemented September 10, 1982.

The amendment changes the Technical Specifications to incorporate revised core thermal-hydraulic Limiting Conditions of Operation during the present fuel cycle (Cycle 9).

Copies of the Safety Evaluation and Notice of Issuance are also enclosed.

Sincerely,

Vernon L. Rooney, Project Manager
 Operating Reactors Branch #2
 Division of Licensing

Enclosures:

1. Amendment No. 72 to DPR-28
2. Safety Evaluation
3. Notice

cc w/enclosures
 See next page

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SURNAME	9/15/82	9/15/82	9/15/82	9/15/82	9/16/82		
DATE							

Mr. J. B. Sinclair

cc:

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

VERMONT YANKEE NUCLEAR POWER CORPORATION

DOCKET NO. 50-271

VERMONT YANKEE NUCLEAR POWER STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 72
License No. DPR-28

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Vermont Yankee Nuclear Power Corporation (the licensee) dated August 19, 1982 as supplemented September 10, 1982 complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR-28 is hereby amended to read as follows:

2. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 72 are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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3. This license amendment is effective as of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Domenic B. Vassallo, Chief
Operating Reactors Branch #2
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 16, 1982

ATTACHMENT TO LICENSE AMENDMENT NO. 72

FACILITY OPERATING LICENSE NO. DPR-28

DOCKET NO. 50-271

Revise the Appendix A Technical Specifications by removing page 180-01 and replacing with revised page 180-01.

ATTACHMENT 1

VYNPS
Table 3.11-2
MCPR Operating Limits

Value of "N" in RBM Equation(1)	Average Control Rod Scram Time	Cycle Exposure Range	MCPR Operating Limit for Fuel Type (2)		
			8X8	8X8R	P8X8R
42%	Equal or better than L.C.O. 3.3 C.1.1	BOC to EOC-2 GWD/T	1.29	1.29	1.29
		EOC-2 GWD/T to EOC-1 GWD/T	1.29	1.29	1.29
		EOC-1 GWD/T to EOC	1.30	1.30	1.30
	Equal or better than L.C.O. 3.3 C.1.2	BOC to EOC-2 GWD/T	1.29	1.29	1.29
		EOC-2 GWD/T to EOC-1 GWD/T	1.33	1.31	1.31
		EOC-1 GWD/T to EOC	1.36	1.35	1.35
41%	Equal or better than L.C.O. 3.3 C.1.1	BOC to EOC-2 GWD/T	1.25	1.25	1.25
		EOC-2 GWD/T to EOC-1 GWD/T	1.26	1.25	1.25
		EOC-1 GWD/T to EOC	1.30	1.30	1.30
	Equal or better than L.C.O. 3.3 C.1.2	BOC to EOC-2 GWD/T	1.25	1.25	1.25
		EOC-2 GWD/T to EOC-1 GWD/T	1.33	1.31	1.31
		EOC-1 GWD/T to EOC	1.36	1.35	1.35
< 40%	Equal or better than L.C.O. 3.3 C.1.1	BOC to EOC-2 GWD/T	1.25	1.25	1.25
		EOC-2 GWD/T to EOC-1 GWD/T	1.26	1.25	1.25
		EOC-1 GWD/T to EOC	1.30	1.30	1.30
	Equal or better than L.C.O. 3.3 C.1.2	BOC to EOC-2 GWD/T	1.25	1.25	1.25
		EOC-2 GWD/T to EOC-1 GWD/T	1.33	1.31	1.31
		EOC-1 GWD/T to EOC	1.36	1.35	1.35
75%	Special Testing at Natural Circulation (Note 3, 4)		1.30	1.31	1.31

- (1) The Rod Block Monitor (RBM) trip setpoints are determined by the equation shown in Table 3.2.5 of the Technical Specifications.
- (2) The current analyses for MCPR Operating Limits do not include 7X7 fuel. On this basis further evaluation of MCPR operating limits is required before 7X7 fuel can be used in Reactor Power Operation.
- (3) For the duration of pump trip and stability testing.
- (4) K_f factors are not applied during the pump trip and stability testing.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 72 TO FACILITY OPERATING LICENSE NO. DPR-28

VERMONT YANKEE NUCLEAR POWER CORPORATION

VERMONT YANKEE NUCLEAR POWER STATION

DOCKET NO. 50-271

Author: Y. Hsii

1.0 Introduction

By letter dated August 19, 1982 (Reference 1) Vermont Yankee Nuclear Power Corporation (VYNPC or licensee) has proposed changes to the Technical Specifications of the Vermont Yankee Nuclear Power Station (VY), as supported by Reference 2. The proposed changes modify the Limiting Conditions of Operation pertaining to the reactor core during the present fuel cycle (Cycle 9). These changes are:

1. New values for operating limits related to Minimum Critical Power Ratio (MCPR) or operating Limit MCPR (OLMCPR).
2. Removal of certain operational constraints on core exposure and the equation for determining the rod block monitoring (RBM) setpoints. These operational constraints had been imposed by License Amendment No. 70 to limit plant operation in accordance with the previous OLMCPRs that were found acceptable by the staff.

2.0 Evaluation

2.1 New OLMCPRs

The new values for OLMCPRs were calculated by the licensee using the RETRAN-TCPYA01 transient hot channel CPR methodology. The RETRAN-TCPYA01 transient hot channel Critical Power Ratio methodology has been reviewed and approved by the staff (Reference 3) as an acceptable method for CPR calculation provided that conservative values are used for input parameters to account for their uncertainties.

In the course of our review of the application of the approved methodology to establish fuel cycle specific Limiting Conditions of Operation, questions arose as to the conservatism of the constant value of fuel pellet - cladding gap conductance used by the licensee. Further discussions with the licensee and additional information provided by the licensee (Reference 2) satisfied the staff as to the conservatism of the value of gap conductance (1000 BTU/hr. ft²-°F) used by the licensee. The following considerations led us to conclude that the value used was conservative:

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1. The value of conductance used is higher than either the power-weighted or volume-weighted hot channel average gap conductance.
2. Even though the departure from nucleate boiling (DNB) occurs locally at the location or downstream of the peak power node, the integrated thermal hydraulic effect strongly influences DNB in a BWR core. The use of the GEXL critical quality-boiling length correlation accounts for the integrated upstream thermal-hydraulic conditions. Therefore, the use of an average value of gap conductance, even though non-conservative for the peak power nodes, leads to a conservative accounting of the integrated upstream effects, since most of the upstream gap conductances are lower than the average.
3. The licensee has performed a sensitivity study (Reference 2) using axially-varying nodal gap conductance for the limiting transient (generator load rejection without bypass), the result shows a slightly lower Δ CPR than does the analysis with a constant gap conductance of 1000 BTU/hr-ft²-°F. We therefore, conclude that the value of gap conductance used by the licensee is acceptable.

The MCPR operating limits in the proposed Technical Specifications, Table 3.11-2, were obtained from the maximum Δ CPRs, corresponding to various fuel types for all anticipated transients. We have reviewed the proposed OLMCPRs. Because acceptable methodology, conservative input assumptions, and appropriate transients have been used in calculating the OLMCPRs we have found them acceptable for use during Cycle 9 operation.

2.2 Removal of Operational Constraints

The operational constraints pertaining to core exposure and the equation used for determining the RBM setpoints had been imposed to limit plant operation to the previous OLMCPRs that had been found acceptable to the staff. The new OLMCPRs were calculated without using the plant operational constraints with respect to core exposure or the RBM setpoint equation limitation. Because the OLMCPRs, so calculated, were found to be acceptable (as discussed above) the operational constraints can be removed from the Technical Specifications.

2.3 Summary

Based on our review of the licensee's submittals, we conclude that the proposed Technical Specifications for Cycle 9 operation are acceptable.

3.0 Environmental Considerations

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §1.5(d)(4), that an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

4.0 Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated, does not create the possibility of an accident of a type different from any evaluated previously, and does not involve a significant reduction in a margin of safety, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: September 16, 1982

References:

1. Letter, L. H. Heider (VYNPC) to USNRC, FVY 82-93, "Supplement 2 to Reload 8 Licensing Submittal", August 19, 1982
2. Letter, J. Sinclair (VYNPC) to D. Vassallo (USNRC), FVY 82-02, September 10, 1982.
3. Letter, D. Vassallo (USNRC) to J. Sinclair (VYNPC), dated September 15, 1982

UNITED STATES NUCLEAR REGULATORY COMMISSIONDOCKET NO. 50-271VERMONT YANKEE NUCLEAR POWER CORPORATIONNOTICE OF ISSUANCE OF AMENDMENT TO FACILITYOPERATING LICENSE

The U.S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 72 to Facility Operating License No. DPR-28, issued to Vermont Yankee Nuclear Power Corporation which revised Technical Specifications for operation of the Vermont Yankee Nuclear Power Station (the facility) located near Vernon, Vermont. The amendment is effective as of its date of issuance.

The amendment changes the Technical Specifications to incorporate revised core thermal-hydraulic Limiting Conditions of Operation during the present fuel cycle (Cycle 9).

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment was not required since the amendment does not involve a significant hazards consideration.

The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that pursuant to 10 CFR 51.d(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of this amendment.

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For further details with respect to this action, see (1) the application for amendment dated August 19, 1982 as supplemented September 10, 1982 (2) Amendment No. 72 to License No. DPR-28, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C., and at the Brooks Memorial Library, 224 Main Street, Brattleboro, Vermont 05301. A copy of items (2) and (3) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Licensing.

Dated at Bethesda, Maryland, this 16th day of September 1982.

FOR THE NUCLEAR REGULATORY COMMISSION



Domenic B. Vassallo, Chief
Operating Reactors Branch #2
Division of Licensing