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AUGUST 22 1980

Docket No. 50-271

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Mr. Robert L. Smith
 Licensing Engineer
 Vermont Yankee Nuclear Power
 Corporation
 25 Research Drive
 Westboro, Massachusetts 01581

Dear Mr. Smith:

The Commission has issued the enclosed Amendment No. ⁵⁷ to Facility License No. DPR-28 for the Vermont Yankee Nuclear Power Station. The amendment is in response to your letter of August 1, 1980.

The amendment changes the Technical Specifications to incorporate the limiting conditions for operation expressing MAPLHGR limits for fuel associated with the latter part of cycle 7 operation.

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

Sincerely,

Original Signed by
 T. A. Ippolito

Thomas A. Ippolito, Chief
 Operating Reactors Branch #2
 Division of Licensing

Enclosures:

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

cc w/enclosures:
 See next page

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DATE	8/18/80	8/18/80	8/18/80	8/20/80	8/22/80	8/18/80

Mr. Robert L. Smith

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August 22, 1980

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. 57
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 1, 1980, 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:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 57, 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 its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION


Thomas A. Ippolito, Chief
Operating Reactors Branch #2
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 22, 1980

ATTACHMENT TO LICENSE AMENDMENT NO. 57

FACILITY OPERATING LICENSE NO. DPR-28

DOCKET NO. 50-271

Review Appendix A as follows:

Remove the pages listed and replace with revised pages.

180-n1

180-n2

Table 3.11-1C

MAPLHGR VERSUS AVERAGE PLANAR EXPOSURE

PLANT: Vermont Yankee

Fuel Type: 8D274L

<u>Average Planar Exposure</u> <u>(MWD/T)</u>	<u>MAPLHGR</u> <u>(KW/ft)</u>	<u>PCT</u> <u>(°F)</u>	<u>Oxidation</u> <u>Fraction</u>
200.0	11.2	2060.	0.019
1,000.0	11.3	2064.	0.019
5,000.0	11.9	2133.	0.024
10,000.0	12.1	2129.	0.023
15,000.0	12.2	2159.	0.025
20,000.0	12.1	2167.	0.026
25,000.0	11.6	2118.	0.023
30,000.0	10.9	2028.	0.017
35,000.0	9.9	1896.	0.010
40,000.0	9.3	1812	0.007

Source: NEDO-21697, August 1977 (revised)

Table 3.11-1D

MAPLHGR VERSUS AVERAGE PLANAR EXPOSURE

PLANT: Vermont Yankee

Fuel Type: 8D274H

<u>Average Planar Exposure (MWD/T)</u>	<u>MAPLHGR (KW/ft)</u>	<u>PCT (°F)</u>	<u>Oxidation Fraction</u>
200.0	11.1	2052.	0.019
1,000.0	11.2	2050.	0.018
5,000.0	11.8	2113.	0.022
10,000.0	12.1	2131.	0.023
15,000.0	12.2	2161.	0.026
20,000.0	12.0	2164.	0.026
25,000.0	11.5	2112.	0.022
30,000.0	10.9	2029.	0.017
35,000.0	10.0	1900.	0.011
40,000.0	9.3	1815.	0.008

Source: NEDO-21697, August 1977 (revised)



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 57 TO FACILITY OPERATING LICENSE NO. DPR-28

VERMONT YANKEE NUCLEAR POWER CORPORATION

VERMONT YANKEE NUCLEAR POWER STATION

DOCKET NO. 50-271

1.0 Introduction

By letter⁽¹⁾ dated August 1, 1980, the Vermont Yankee Nuclear Power Corporation (the licensee) requested amendment to the Technical Specifications appended to Operating License No. DPR-28 for the Vermont Yankee Nuclear Power Station. The proposed change would extend the exposure range of the Maximum Average Planar Linear Heat Generation Rate (MAPLHGR) versus average planar exposure values for the type 8D274H and 8D274L fuel bundles loaded in the core. The proposed extension would provide MAPLHGR limits for the 8D274H and 8D274L bundles to an average planar exposure of 40,000 MWd/T, which is 10,000 MWd/T beyond the current exposure range of 30,000 MWd/T.

2.0 Evaluation

The licensee determined that the average planar exposure for 8D274L and 8D274H fuel types would probably exceed 30,000 MWd/T before the end of the current operating cycle (cycle 7). The Technical Specifications now provide MAPLHGR limits for these fuel types up to a maximum planar exposure of 30,000 MWd/T. Therefore, continued exposure of these fuel types beyond 30,000 MWd/t requires an extension of the MAPLHGR limits.

It is required by 10 CFR 50.46, "Acceptance Criteria for Emergency Core Cooling Systems for Light Water Nuclear Power Reactors," that a power reactor "be provided with an emergency core cooling system (ECCS) which shall be designed such that its calculated cooling performance following postulated loss-of-coolant accidents conforms to the criteria set forth" in 10 CFR 50.46. Technical Specifications restrict plant operations to linear heat generation rates for which the required calculations are valid.

License Amendment No. 41 for Vermont Yankee, which was issued November 30, 1977,⁽²⁾ provided MAPLHGR limits for types 8D274H and 8D274L fuel out to an average planar exposure of 30,000 MWd/T. The staff reviewed the analysis, including the models used in calculating ECCS performance for the above fuel types and concluded that when the facility was operated in accordance with the MAPLHGR limits of Amendment 41, and other existing restrictions, the facility would be in conformance with all requirements of 10 CFR 50.46 and Appendix K to 10 CFR 50.46.

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In order to extend the MAPLHGR versus average planar exposure values for the 8D274H and 8D274L fuel, the licensee re-evaluated the adequacy of ECCS performance for the subject 8X8 fuel at exposures out to 40,000 MWd/T. The supplemental analysis was performed using analytical procedures previously approved by the staff in reference 2. Additionally, these methods are considered applicable for an average planar exposure of 40,000 MWd/T. The analysis results show that with MAPLHGR limited to the values in table 3.11-1C and table 3.11-1D of the proposed Technical Specifications, the cladding temperature and local cladding oxidation are well below the 2200°F (peak cladding temperature) and 17% (local cladding oxidation) limits allowed by 10 CFR 50.46. Accordingly, we find the proposed MAPLHGR versus average planar exposure values acceptable.

Thermal-Mechanical Design Considerations

Previously reviewed fuel thermal-mechanical design and safety analyses are dependent on local exposure. Additionally, the maximum local (pellet) exposure in a fuel assembly is not independent of the maximum average planar exposure since the former is always greater than the latter. Accordingly, we have reviewed the adequacy of the previously approved⁽³⁾ use of 8D274H and 8D274L fuel in the Vermont Yankee reactor in light of the proposed Technical Specification change. For Vermont Yankee, the licensee stated⁽⁶⁾ that the maximum local exposure of the 8D274H and 8D274L fuel will not exceed 40,000 MWd/T during cycle 7; Since the staff previously reviewed and accepted⁽⁵⁾ generic fuel thermal and mechanical performance analyses⁽⁴⁾ for 8X8 fuel peak pellet exposures up to 40,000 MWd/T, we find our generic conclusions and basis for acceptance of the 8X8 fuel thermal and mechanical design valid for peak pellet exposures up to 40,000 MWd/T. The plant-specific aspects of the fuel thermal and mechanical design were also previously addressed in Reference 7 and remain applicable for peak pellet exposures up to 40,000 MWd/T. Thus, the conclusions stated in our plant and cycle-specific evaluation of thermal-mechanical performance also remain unaffected.

For cycle 7, we find that the proposed extension of the MAPLHGR versus average planar exposure values do not invalidate the basis of conclusions of any of our previous approvals of the thermal-mechanical design of the 8D274H and 8D274L fuel for peak pellet exposures up to 40,000 MWd/T.

Summary

We find the corrective actions taken by the licensee to be appropriate. We find the proposed Technical Specification change acceptable.

3.0 Environmental Consideration

We have determined that the license 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 Section 51.5(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 accidents previously considered and does not involve a significant decrease in a safety margin, 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: August 22, 1980

References

1. Letter, J. E. Tribble (VYNPC) to Office of Nuclear Reactor Regulation, dated August 1, 1980.
2. License Amendment No. 41 to License DPR-28, dated November 30, 1977.
3. License Amendment No. 25 to License No. DPR-28 dated August 2, 1976.
4. "Generic Reload Fuel Application" NEDE-24011-P-A, dated August 1978.
5. USNRC letter (D. Eisenhut) to General Electric (R. Gridley) dated May 12, 1978 transmitting "Safety Evaluation for the General Electric Topical Report Generic Reload Fuel Application (NEDE-24011-P)" dated April 1978.
6. Telephone conversation between Vermont Yankee Nuclear Power Corporation (R. Smith) and USNRC (V. Rooney) on August 11, 1980.
7. Letter, D. E. Vanderburgh (VYNPC) to Office of Nuclear Reactor Regulation (USNRC) dated August 21, 1979,

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

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 57 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 revises the Technical Specifications to incorporate the limiting conditions for operation expressing MAPLHGR limits for fuel associated with the latter part of cycle 7 operation.

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 the amendment will not result in any significant environmental impact and that pursuant to 10 CFR Section 51.5(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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Fur further details with respect to this action, see (1) the application for amendment dated August 1, 1980, (2) Amendment No. 57 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.

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 22nd day of August, 1980.

FOR THE NUCLEAR REGULATORY COMMISSION


Thomas A. Ippolito, Chief
Operating Reactors Branch #2
Division of Licensing