

Docket No. 50-271

MAR 30 1979

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Mr. Robert H. Groce
Licensing Engineer
Yankee Atomic Electric Company
20 Turnpike Road
Westboro, Massachusetts 01581

Dear Mr. Groce:

The Commission has issued the enclosed Amendment No. **5^a** to Facility License No. DPR-28 for the Vermont Yankee Nuclear Power Station. This Amendment changes the Technical Specifications to incorporate the limiting conditions for operation associated with operation at the end of Cycle 6. These changes are in response to your submittal dated March 5, 1979.

Because the analysis on which your previous Technical Specifications are based did not address operation beyond EOC-2 GWD/T, we accordingly limited operation under your previous Technical Specifications. We have now reviewed analysis which you submitted March 5, 1979, and approve operation beyond EOC-2 GWD/T.

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 #3
Division of Operating Reactors

*Constr
cep.*

Enclosures:

- 1. Amendment No. **5^a** to DPR-28
- 2. Safety Evaluation
- 3. Notice

cc w/enclosures: See page 2

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Self/for
OELD not necessary

OFFICE →	ORB. #3	ORB. #3	AD: E&P	OELD	ORB #3
SURNAME →	SSheppard	VRooney:mjf	BGrimes	<i>[Signature]</i>	Ippolito
DATE →	3/28/79	3/28/79	3/29/79	3/30/79	3/28/79

ROUTING AND TRANSMITTAL SLIP

Date **3/27/79**

TO: (Name, office symbol, room number, building, Agency/Post)		Initials	Date
1. Shirley/Rooney - concu			
2. Appalita - concu			
3. James - concu			
4. OELD - concu (Amend & Notice)			
5. Shirley - review			

Action	File	Note and Return
Approval	For Clearance	Per Conversation
As Requested	For Correction	Prepare Reply
Circulate	For Your Information	See Me
Comment	Investigate	Signature
Coordination	Justify	

REMARKS

6. Appalita - sign
 7. M.S. - dispatch
 (52)
 Tech. Spec. changed needed by 3/30/79 (Friday) for plant startup Monday, 4/2/79
 Please call Vern Rooney (27872) when ready.
 Concur: Woodhead OELD (no space for concu provided or license amend & PK notice)

DO NOT

FROM:

6041-1

☆ U.S.

URGENT

GPO 906-936

NRC FORM 142 (8-76)

Disposals,

Bldg.

72
 v. 7-76)

Mr. Robert H. Groce

- 2 -

cc: Mr. J. M. Abbey
Vermont Yankee Nuclear Power
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77 Grove Street
Rutland, Vermont 05701

Mr. Donald E. Vandenburg
Vice President
Vermont Yankee Nuclear Power
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Assistant Attorney, General
Environmental Protection Division
Attorney General's Office
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New England Coalition on Nuclear
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West Hill - Faraway Road
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Mr. Raymond H. Puffer
Chairman
Board of Selectman
Vernon, Vermont 05354

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Radiation Health Engineer
Agency of Human Services
Division of Occupational Health
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Attorney General
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Assistant Attorney General
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Anthony Z. Roisman
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Mr. Robert H. Groce

- 3 -

cc: Public Service Board
State of Vermont
120 State Street
Montpelier, Vermont 05602

Director, Technical Assessment
Division
Office of Radiation Programs
(AW-459)
US EPA
Crystal Mall #2
Arlington, Virginia 20460

U. S. Environmental Protection Agency
Region I Office
ATTN: EIS COORDINATOR
JFK Federal Building
Boston, Massachusetts 02203



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. 52
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 March 5, 1979, 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.

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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 Appendices A and B, as revised through Amendment No. 52, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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 #3
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 30, 1979

ATTACHMENT TO LICENSE AMENDMENT NO. 52

FACILITY OPERATING LICENSE NO. DPR-28

DOCKET NO. 50-271

Revise Appendix A as follows:

Remove page 180-01 and replace with revised page 180-01.

Table 3.11-2

M CPR OPERATING LIMITS

Value of "N" in RBM Equation (1)	M CPR Operating Limits Over the Exposure Range Noted					
	<u>BOC to EOC - 1GWD/T</u>			<u>EOC- 1GWD/T to EOC</u>		
	<u>7x7</u>	<u>8x8</u>	<u>8x8R</u>	<u>7x7</u>	<u>8x8</u>	<u>8x8R</u>
40%	1.23	1.22	1.24	1.23	1.27	1.27
39%	1.23	1.22	1.22	1.23	1.27	1.27

Note:

- (1) The Rod Block Monitor trip setpoints are determined by the equation shown in Table 3.2.5 of the Technical Specifications.

180-01



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 52 TO FACILITY OPERATING LICENSE NO. DPR-28

VERMONT YANKEE NUCLEAR POWER CORPORATION

VERMONT YANKEE NUCLEAR POWER STATION

DOCKET NO. 50-271

Introduction

By letter dated March 5, 1979, Vermont Yankee Nuclear Power Corporation (the licensee) requested changes to the Technical Specifications (Appendix A) appended to Facility Operating License No. DPR-28 for the Vermont Yankee Nuclear Power Station (VY). The proposed changes provide minimum critical power ratio (MCPR) limits applicable to the exposure interval from 2 gigawatt day/ton before the end of the present fuel cycle (EOC-2 GWD/T) on to end of cycle (EOC).

The transient analyses performed in support of Cycle 6 operation of VY included analyses of control rod withdrawal, loss of 100°F of feedwater heating, and feedwater controller failure (References 1 and 2). The transient decreases in MCPR obtained in these analyses for 7x7, 8x8 and 8x8R fuel were accepted as limiting by the staff for the exposure range up to 2 GWD/T before the end of Cycle 6 (Reference 3), and the current VY Technical Specifications are based on these results.

The transient normally anticipated to be limiting near the end of cycle, turbine trip without operation of bypass valves (TT w/o BP) and load rejection without operation of bypass valves (LR w/o BP), were not analyzed for the previous submittal. The staff understood that the licensee intended to provide such analyses, based on measured rather than Technical Specification scram times, prior to reaching 2 GWD/T before end of Cycle 6. Because of the unavailability of the analyses using measured scram times the licensee has submitted in Reference 4 results of analyses of the TT w/o BP and LR w/o BP transients for the exposure range from EOC-2 GWD/T to EOC, based on Technical Specification scram times. These results have been incorporated into proposed MCPR limits for the remainder of Cycle 6.

The licensee has proposed the following MCPR limits:

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	7x7	8x8	8x8R
BOC to EOC - 1 GWD/T	1.23	1.22	1.24 (1.22)*
EOC - 1G WD/T EOC	1.23	1.27	1.27

*1.24 is to be used when the rod block set point is 1.06 and 1.22 when the set point is 1.05.

Our evaluation of these limits is given in the following section.

Evaluation

As stated in References 1 and 4 the transient analyses performed to determine the MCPR limits for all portions of VY Cycle 6 were based on methods described in the GE "Generic Reload Fuel Application" (Reference 5). These methods have been accepted by the staff as adequate for such analyses (Reference 6). On this basis we conclude that the licensee has used acceptable methods to determine the Cycle 6 MCPR limits.

The input data used for the analyses included plant specific data presented in Reference 5 and accepted by the staff in Reference 6. Additional cycle dependent input data presented in Reference 1 have been reviewed and found to meet the criteria for such data stated in the staff SER on the "Generic Reload Fuel Application" (Reference 6). We therefore conclude that the transient analysis input data used to arrive at the proposed VY Cycle MCPR limits are acceptable throughout Cycle 6.

Reference 4 includes results of the TT w/o BP and LR w/o BP analyses for the last 2 GWD/T of full power operation during Cycle 6. References 1 and 2 originally included analyses of rod withdrawal errors, loss of 100°F of feedwater heating, and feedwater controller failure events valid for all of Cycle 6. Based on discussions of the scope of the transients to be included in reload cycle analyses in References 5 and 6 we conclude that a sufficiently complete set of transient analyses has been performed to identify the limiting transient Δ CPR for each fuel type.

Based on transients initiated from rated power and flow conditions the 7x7 MCPR limits could be as low as 1.21. However, in accordance with the requirements of Section 6.4 of Reference 6, an operating limit MCPR below 1.23 is not allowed for 7x7 fuel until acceptable K_f factors for operation in the manual flow have been provided. Consequently the VY Cycle 6 7x7 MCPR will be 1.23 rather than 1.21.

In Reference 3 the staff concluded that it will not be necessary to adjust VY Cycle 6 MCPR limits based on consideration of postulated fuel loading errors unless off-gas activities indicative of fuel failures due to fuel misloadings are observed. The MCPR adjustments required in the event off-gas activities exceed 0.236 Ci/sec at the steam jet air ejector are discussed in Reference 3, and have been incorporated into the VY Technical Specifications.

Although fuel failures have been observed at VY during Cycle 6 they have not resulted in off-gas activities above the Technical Specification limit. Preliminary assessment of the failures indicates that specific fuel rod lots dispersed over a number of fuel bundles are failing. This is in contrast to the expected failure pattern for postulated bundle misloadings, i.e., failures localized in the misplaced or mis-oriented bundle. The VY fuel is being thoroughly inspected to confirm the preliminary findings and to assure that all leakers will be removed. Tests are also being conducted by GE to determine the cause of the failures. The staff is following the investigation closely.

We believe that the current VY Technical Specifications with the fuel loading error related off-gas activity limits provide adequate assurance that fuel failures due to misplaced or mis-oriented fuel bundles will not result in unacceptable fuel damage. We, therefore, conclude that the VY MCPR operating limits may be determined on the basis of anticipated transients alone.

In summary, based on our evaluation we conclude that the licensee has used acceptable input data and methods to perform the VY Cycle 6 transient analyses, and that the transients involving the most severe CPR reductions have been considered. Furthermore, the proposed MCPR limits are in compliance with the staff safety evaluation report (Reference 6) on the GE "Generic Reload Fuel Application" (Reference 5) with regard to operation in the manual flow control mode. For these reasons we conclude that the proposed MCPR limits provide adequate assurance that anticipated transients will not result in violation of fuel thermal limits.

Because we have also concluded that MCPR adjustments based on high off-gas activities associated with postulated fuel misloadings are already adequately included in the VY Technical Specifications, we believe that operating limit MCPRs may be based on consideration of anticipated transients only.

Therefore, we find the proposed VY MCPR limits for the remainder of Cycle 6 to be acceptable.

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 §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 the amendment.

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: March 30, 1979

References

1. Letter from D. E. Vandeburgh of Vermont Yankee Nuclear Power Corporation (VYNPC) to NRC, dated June 21, 1978.
2. Letter from D. E. Vandeburgh of VYNPC to NRC, dated September 20, 1978.
3. Amendment No. 47 to License No. DPR-28, Docket No. 50-271, October 10, 1978.
4. Letter from D. E. Vandeburgh of VYNPC to NRC, dated March 5, 1979.
5. General Electric Boiling Water Reactor Generic Reload Fuel Application, NEDE-24011-P, May 1977.
6. NRC Safety Evaluation of the GE Generic Reload Fuel Application (NEDE-24011-P), April 1978.

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. 52 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 associated with operation at the end of Cycle 6.

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 had 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 §51.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of the amendment.

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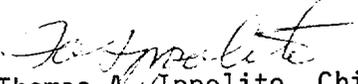
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For further details with respect to this action, see (1) the application for amendment dated March 5, 1979, (2) Amendment No. 52 to License No. DPR-28, and (3) the Commission's related Safety Evaluation. All of these items are available for public 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 Operating Reactors.

Dated at Bethesda, Maryland this 30th day of March 1979.

FOR THE NUCLEAR REGULATORY COMMISSION


Thomas A. Ippolito, Chief
Operating Reactors Branch #3
Division of Operating Reactors