

VERMONT YANKEE NUCLEAR POWER CORPORATION

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PC-83-1

B.3.2.1

REPLY TO:

ENGINEERING OFFICE

TURNPIKE ROAD

August 21, 1979

WESTBORO, MASSACHUSETTS 01581

TELEPHONE 617-366-9011

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

Attention: Office of Nuclear Reactor Regulation

Reference: (1) License No. DPR-28 (Docket No. 50-271)
(2) "Generic Reload Fuel Application," General
Electric Licensing Topical Report, NEDE-24011-P-A
(3) Letter, Thomas A. Ippolito, DOR, to Richard
Gridley, GE, MFN-117-79, April 16, 1979.

Subject: Technical Specification Changes to Prepressurized 8x8R Fuel

Dear Sir:

Pursuant to Section 50.59 of the Commission's Rules and Regulations Vermont Yankee Nuclear Power Corporation hereby proposes the following changes to Appendix A, the Technical Specifications.

PROPOSED CHANGE:

Table 3.11-1G, page 180-n5, "MAPLHGR Limits," is amended to include prepressurized 8x8 retrofit fuel type, P8DPB289. Also, Table 3.11-2, "MCPR Operating Limits," page 180-o1, is amended to include MCPR operating limits for prepressurized 8x8 retrofit fuel, and to increase the MCPR operating limits at certain cycle exposures for other 8x8 fuel types. A revised Table 3.11-1G and Table 3.11-2 are attached.

REASON FOR CHANGE:

Prepressurized 8x8 retrofit fuel will be used by Vermont Yankee beginning with Cycle 7 operations. The introduction of this fuel type will require the changes to the Technical Specifications outlined above.

BASIS FOR CHANGE:

A standard "Supplemental Reload Licensing Submittal" has been provided to Vermont Yankee by General Electric Company for Cycle 7 operations. A review of the results of the analysis presented in that report, when compared to the current (Cycle 6) results, revealed the need to make the changes to the Technical Specifications identified above.

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The transient results which form the basis for the proposed change to the MCPR operating limits are summarized in Table 1. The MCPR operating limits shown on the revised Table 3.11-2 were determined by choosing the most limiting transient change in critical power ratio (Δ CPR) from Table 1 for the fuel type, exposure range, and Rod Block Monitor setpoint of interest. The addition of the limiting Δ CPR to the fuel cladding integrity limit MC.R of

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1.07 results in the MCPR operating limit.

The inclusion of the prepressurized 8x8 retrofit in Table 3.11-1G, "MAPLHGR Limits," is based on evaluations by General Electric that show that the effect of prepressurization of a given fuel type is to reduce the calculated peak cladding temperature because of the improvement in the fuel-to-cladding gap thermal conductivity. Conversely, the MAPLHGR limits calculated for unpressurized 8x8 retrofit fuel will be conservatively bounding for the equivalent prepressurized 8x8 retrofit fuel.

SAFETY CONSIDERATIONS:

The analyses supporting these proposed changes were based on the standard reload analysis methods as presented in General Electric's Generic Reload Fuel Application (Reference 2). The use of prepressurized 8x8 retrofit fuel in Vermont Yankee's core is not considered to involve an unreviewed safety question, and is supported by the NRC staff safety evaluation of proposed amendments to the above Generic Reload Fuel Application (Reference 3).

This submittal has been reviewed by the Vermont Yankee Nuclear Safety Audit and Review Committee.

FEE DETERMINATION:

This letter provides information that involves approval of a single safety issue and is deemed not to involve a significant hazards consideration. For these reasons, Vermont Yankee Nuclear Power Corporation proposes this evaluation to be Class III. A payment of \$4000.00 is enclosed.

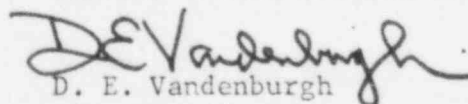
Vermont Yankee Nuclear Power Corporation believes that the NRC revised fee schedule is illegal. Vermont Yankee Nuclear Power Corporation is aware that this fee schedule is being contested before the U. S. Court of Appeals for the Fifth Circuit and, therefore, submits the enclosed fee under protest without waiving its right to contest the validity of this fee or the entire NRC fee schedule, and without waiving any right to recover, in whole or in part, all fees paid or to be paid under the invalid fee schedule.

SCHEDULE OF CHANGE:

The proposed changes are requested for incorporation into the Technical Specifications no later than November 3, 1979, which is the currently planned startup date for Cycle 7.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION


D. E. Vandenburg
Vice President

August 21, 1979
Page Three

Then personally appeared before me, D. E. Vandenburg, who, being duly sworn, did state that he is Vice President of Vermont Yankee Nuclear Power Corporation, that he is duly authorized to execute and file the foregoing request in the name and on the behalf of Vermont Yankee Nuclear Power Corporation, and that the statements therein are true to the best of his knowledge and belief.

Robert H. Green

Robert H. Groce Notary Public
My Commission Expires September 14, 1984



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Table 3.11-1G

MAPLHGR, PCT, Oxidation Fraction Versus Exposure,
Fuel Type 8DPB289 and P8DPB289

<u>Average Planar Exposure (MWDd/t)</u>	<u>MAPLHGR (kw/ft)</u>	<u>P.C.T. (Deg-F)</u>	<u>Oxidation Fraction</u>
200.0	11.2	2126	0.027
1000.0	11.2	2119	0.026
5000.0	11.8	2178	0.030
10000.0	12.0	2185	0.030
15000.0	12.1	2200	0.032
20000.0	11.8	2187	0.031
25000.0	11.3	2120	0.025
30000.0	11.1	2095	0.023

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Table 3.11-2

MCPR OPERATING LIMITS

<u>Exposure Range</u>	Value of "N" in <u>RBM Equation (1)</u>	<u>Fuel Type</u>			
		<u>7x7</u>	<u>8x8</u>	<u>8x8R</u>	<u>P8x8R</u>
BOC to EOC-2 GWd/t	42%	1.23	1.27	1.22	1.27
	41%	1.23	1.24	1.22	1.24
	<u>≤40%</u>	1.23	1.23	1.22	1.22
EOC-2 GWd/t to EOC-1 GWd/t	42%	1.23	1.27	1.23	1.27
	41%	1.23	1.24	1.23	1.24
	<u>≤40%</u>	1.23	1.23	1.23	1.24
EOC-1 GWd/t to EOC	42%	1.23	1.28	1.28	1.30
	41%	1.23	1.28	1.28	1.30
	<u>≤40%</u>	1.23	1.28	1.28	1.30

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

Table 1
 Transient Analysis Summary
 ALL TRANSIENTS ANALYZED AT 104.5% POWER, 100% FLOW

Core Wide Transient	Exposure	$\hat{\phi}$	$\hat{Q/A}$	\hat{P}_{s1}	\hat{P}_v	ΔCPR		
		(%NBR)	(%NBR)	(PSIG)	(PSIG)	8x8	8x8R	P8x8R
Load rejection without bypass	EOC7	290.1	117.5	1202	1238	0.21	0.21	0.23
	EOC7 - 1 Gwd/t	239.3	113.9	1193	1228	0.16	0.16	0.17
	EOC7 - 2 Gwd/t	182.5	107.2	1175	1211	0.06	0.06	0.06
Turbine trip without bypass	EOC7	288.9	117.4	1205	1240	0.21	0.21	0.23
	EOC7 - 1 Gwd/t	236.8	113.7	1196	1231	0.16	0.16	0.17
	EOC7 - 2 Gwd/t	172.2	107.3	1178	1213	0.06	0.06	0.06
Loss of 100°F FW Heater	BOC7 to EOC7	124.0	123.5	1020	1066	0.15	0.15	0.15
Feedwater Controller Failure	BOC7 to EOC7	116.4	110.2	1021	1065	0.05	0.05	0.06

Local Rod Withdrawal Error (With Limiting Instrument Failure)
 Transient Summary

Rod Block Reading**	ΔCPR^*		
	8x8	8x8R	P8x8R
104	0.12	0.09	0.11
105	0.14	0.10	0.13
106	0.16	0.11	0.15
107	0.17	0.12	0.17
108	0.20	0.14	0.20
109	0.24	0.16	0.25
110	0.27	0.17	0.27

* Based on estimated initial MCPR of 1.28 (8x8, 8x8R) and 1.37 (P8x8R).

** Indicates setpoint selected.