Docket No. 50-271

June 4, 1990

Mr. L. A. Tremblay
Licensing Engineer
Vermont Yankee Nuclear Power Corporation
580 Main Street
Bolton, Massachusetts 01740-1398

Dear Mr. Tremblay:

SUBJECT: ISSUANCE OF AMENDMENT NO. 122 TO FACILITY OPERATING LICENSE NO. DPR-28 - VERMONT YANKEE NUCLEAR POWER STATION (TAC NO. 76484)

The Commission has issued the enclosed Amendment No. 122 to Facility Operating License No. DPR-28 for the Vermont Yankee Nuclear Power Station. This amendment is in response to your application dated March 9, 1990.

This amendment revises the requirements primary for containment isolation valve leakage testing to add feedwater check valves to the Type C leakage test program. The revision also removes the requirement for leakage testing of two valves which are now outside the containment boundary.

A copy of our Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register Notice.

This completes action under TAC 76484.

Sincerely,

Original signed:

Morton B. Fairtile, Project Manager
Project Directorate I-3
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 122 to
2. License No. DPR-28
3. Safety Evaluation

cc w/enclosures:
See next page

LA:PDI-3	PM:PDI-3	SSPLB	OGC	D:PDI-3
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

June 4, 1990

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Morton B. Fairtile

Morton B. Fairtile, Project Manager
Project Directorate I-3
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 122 to License No. DPR-28
2. Safety Evaluation

cc w/enclosures:
See next page

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Mr. L. A. Tremblay

cc:
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Adjudicatory File (2)
Atomic Safety and Licensing Board
Panel Docket
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AMENDMENT NO. 122 TO DPR-28 VERMONT YANKEE NUCLEAR POWER STATION DATED 06/04/90

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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. 122
License No. DPR-28

1. The Nuclear Regulatory Commission (the Commission or NRC) has found that:

   A. The application for amendment filed by the Vermont Yankee Nuclear Power Corporation (the licensee) dated March 9, 1990 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 set forth in 10 CFR Chapter I;

   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:

   Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 122 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective at the time of shutdown for the 1990 scheduled refueling outage.

FOR THE NUCLEAR REGULATORY COMMISSION

RHWessman

Richard H. Wessman, Director
Project Directorate I-3
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: June 4, 1990

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

ATTACHMENT TO LICENSE AMENDMENT NO. 122

FACILITY OPERATING LICENSE NO. DPR-28

DOCKET NO. 50-271

Replace the following pages of the Appendix A Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change.

Remove	Insert
135	135
136	136

TABLE 4.7.2.a

PRIMARY CONTAINMENT ISOLATION VALVES
VALVES SUBJECT TO TYPE C LEAKAGE TESTS

Isolation Group (1)	Valve Identification	Number of Power Operated Valves Inboard	Number of Power Operated Valves Outboard	Maximum Operating Time (sec)	Normal Position	Action on Initiating Signal
1	Main Steam Line Isolation (2-80A, D & 2-86A, D)	4	4	5(Note 2)	Open	GC
1	Main Steam Line Drain (2-74, 2-77)	1	2	35	Closed	SC
1	Recirculation Loop Sample Line (2-39, 2-40)	1	1	5	Closed	SC
2	RHR Discharge To Radwaste (10-57, 10-66)		2	25	Closed	SG
2	Drywell Floor Drain (20-82, 20-83)		2	20	Open	GC
2	Drywell Equipment Drain (20-94, 20-95)		2	20	Open	GC
3	Drywell Air Purge Inlet (16-19-9)		1	10	Closed	SC
3	Drywell Air Purge Inlet (16-19-8)		1	10	Open	GC
3	Drywell Purge & Vent Outlet (16-19-7A)		1	10	Closed*	SC
3	Drywell Purge & Vent Outlet Bypass (16-19-6A)		1	10	Closed	SC
3	Drywell & Suppression Chamber Main Exhaust (16-19-7)		1	10	Closed*	SC
3	Suppression Chamber Purge Supply (16-19-10)		1	10	Closed	SC
3	Suppression Chamber Purge & Vent Outlet (16-19-7B)		1	10	Closed	SC
3	Suppression Chamber Purge & Vent Outlet Bypass (16-19-6B)		1	10	Open	GC
3	Exhaust to Standby Gas Treatment System (16-19-6)		1	10	Open	GC
3	Containment Purge Supply (16-19-23)		1	10	Open	GC
3	Containment Purge Makeup (16-20-20, 16-20-22A, 16-20-22B)		3	NA	Closed	SC
5	Reactor Cleanup System (12-15, 12-18)	1	1	25	Open	GC
6	HPCI (23-15, 23-16)	1	1	55	Open	GC
6	RCIC (13-15, 13-16)	1	1	20	Open	GC
	Primary/Secondary Vacuum Relief (16-19-11A, 16-19-11B)		2	NA	Closed	SC
	Primary/Secondary Vacuum Relief (16-19-12A, 16-19-12B)		2	NA	Closed	Process
3	Containment Air Sampling (VG 23, VG 26, 109-76A&B)		4	5	Open	GC
	Feedwater Check Valves (V2-27A, -96A, -28A, - 28B)			NA	Open	Process

*Valves 16-19-7 and 16-19-7A shall have stops installed to limit valve opening to 50° or less.

TABLE 4.7.2.b

PRIMARY CONTAINMENT ISOLATION VALVES
VALVES NOT SUBJECT TO TYPE C LEAKAGE TESTS

Isolation Group (Note 1)	Valve Identification	Number of Power Operated Valves Inboard	Number of Power Operated Valves Outboard	Maximum Operating Time (sec)	Normal Position	Action on Initiating Signal
2	RHR Return to Suppression Pool (10-39A,B)		2	70	Closed	SC
2	RHR Return to Suppression Pool (10-34A,B)		2	120	Closed	SC
2	RHR Drywell Spray (10-26A, B & 10-31A,B)		4	70	Closed	SC
2	RHR Suppression Chamber Spray (10-38A,B)		2	45	Closed	SC
3	Containment Air Compressor Suction (72-38A,B)		2	20	Open	GC
4	RHR Shutdown Cooling Supply (10-18, 10-17)	1	1	28	Closed	SC
	Standby Liquid Control Check Valves (11-16, 11-17)	1	1	NA	Closed	Proc.
*	Hydrogen Monitoring (109-75 A, 1-4; 109-75 B-D, 1-2) Sampling Valves - Inlet		10	NA	NA	NA
*	Hydrogen Monitoring (VG-24, 25, 33, 34)		4	NA	NA	NA

* These valves are remote manual sampling valves which do not receive an isolation signal. Only one valve in each line is required to be operable.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 122 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 9, 1990, the Vermont Yankee Nuclear Power Corporation (the licensee) requested an amendment to Facility Operating License No. DPR-28 for the Vermont Yankee Nuclear Power Station. The proposed amendment would revise the Technical Specification Table of primary containment isolation valves subject to Type C leakage tests, Table 4.7.2.a. The change is to accommodate the installation of two new outboard feedwater check valves, V2-27A and 96A, which are leak-testable and are now included in the Type C leakage test program. During the upcoming 1990 scheduled refueling outage, Vermont Yankee plans to implement a design change which will replace the existing inboard feedwater check valves V2-28A and 28B with new check valves similar to the outboard check valves. Leak testing the feedwater check valves also redefines the primary containment boundary, so that two valves that previously required Type C testing, reactor water cleanup system valve V12-68 and control rod drive system valve V3-181, no longer require Type C testing and are removed from Table 4.7.2.a.

BACKGROUND

Section II.H of 10 CFR 50, Appendix J requires Type C testing of containment isolation valves in the feedwater system of a BWR. The feedwater system check valves (two inboard of containment and two outboard of containment) were installed to provide the containment isolation function on the two feedwater lines. The feedwater check valves as originally installed at Vermont Yankee were not testable; Appendix J, which was issued after Vermont Yankee was licensed, would call for leak testing these valves. The licensee recognized the importance of testing the feedwater check valves for compliance with Appendix J and in 1981, replaced the originally installed outboard valves with valves capable of meeting Appendix J requirements. On August 19, 1983, the staff issued an exemption from Section II.H of the Appendix J requirement pertaining to the Type C testing of inboard feedwater check valves. In granting the exemption the staff considered that:

"1. The closing of a check valve is very reliable. The outboard valves will fail to close only if they are physically blocked by some foreign material or as a result of serious mechanical binding.

2. Even if the outboard valve fails to close, the inboard valve will remain water covered until all remaining feedwater has leaked through, providing a period of time to shut the motor-operated valves before there is any escape of containment atmosphere.

3. Even if the outboard valve fails to close, and the motor-operated valves are left open, system operating pressure greater than Pa can be maintained which will prevent leakage through the inboard valve out into the system."

In view of the above factors and the predicted man-rem exposure of 484 to 715 man-rem for replacing the inboard check valves, the staff concluded that "anticipated radiation exposures associated with replacing inboard check valves far exceed the benefits of replacing these valves," and "we do not require testing the feedwater system motor operated valves as a basis for exempting the inboard feedwater system check valves from Appendix J testing." The Vermont Yankee Technical Specifications presently do not require testing either the outboard check valves (V2-27A and 96A) or the inboard check valves (V2-28A and 28B), and include the inboard check valves in Table 4.7.2.b which lists "Valves Not Subject To Type C Leakage Tests."

EVALUATION

The radiation field in the region of the inboard feedwater check valves has been reduced substantially since 1983, due in a large part to the recirculation pipe replacement outage during 1985-6. The projected exposure for replacing the inboard feedwater check valves is 26 Man-rem.

Replacement of feedwater check valves V2-28A&B with valves that are leak-testable and inclusion of leak testing of the feedwater check valves in Vermont Yankee's Type C testing program and Technical Specifications will result in the addition of new testing requirements. The licensee stated that:

"The newly installed valves will not alter the manner in which the feedwater system operates. The feedwater check valves function to allow flow in one direction only, toward the reactor vessel. When flow either reverses or stops, the valve will seat itself and prevent reverse flow. The primary difference between the new spring check valves and the older "Y" lift check valves is the inclusion of a resilient seat. The new valves will be able to seat under feedwater system design pressures as well as under the containment design basis accident pressures. Because of the dual seat design of the new feedwater check valves, the integrity of the feedwater line primary containment penetrations is improved."

The staff agrees that the new valve and new testing requirements should improve the integrity of the feedwater line primary containment penetration. Given that the valves are now testable, the Appendix J requirement for Type C leakage testing should be observed.

After the new inboard feedwater check valves are installed, the feedwater system will be equipped with check valves both inside and outside of the primary containment that are required to be tested in accordance with Appendix J. Previously, the reactor water cleanup system valve, V12-68, and control rod drive system valve, V3-181, which are outboard of the feedwater check valves, were also required to be tested. The addition of the inboard and outboard feedwater check valves to Table 4.7.2.a, Valves Subject to Type C Leakage Tests, allows valves V12-68 and V3-181 to be removed from Table 4.7.2.a. The feedwater check valves are closer to the reactor and seal all flow in the feedwater flow path, as compared to valves V12-68 and V3-181 which seal only two side streams. Leak testing of the inboard and outboard feedwater check valves rather than valves V12-68 and V3-181, therefore, provides improved assurance of the leak tightness of the primary containment penetration.

ENVIRONMENTAL CONSIDERATION

This amendment involves a change in a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously published a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assesment need be prepared in connection with the issuance of this amendment.

CONCLUSION

The Commission made a proposed determination that the amendment involves no significant hazards consideration which was published in the Federal Register (55 FR 18415) on May 2, 1990, and consulted with the State of Vermont. No public comments were received and the State of Vermont did not have any comments. The staff concludes that the proposed changes to the Technical Specifications are acceptable.

Principal Contributor: Vernon L. Rooney

Dated: June 4, 1990