June 2, 1989

Docket No. 50-271

Mr. R. W. Capstick
Licensing Engineering
Vermont Yankee Nuclear Power
Corporation
580 Main Street
Bolton, Massachusetts 01740-1398

Dear Mr. Capstick:

SUBJECT: ISSUANCE OF AMENDMENT NO. 112 TO DPR-28 - VERMONT YANKEE NUCLEAR POWER STATION (TAC NO. 65410)

The Commission has issued the enclosed Amendment No. 112 to Facility Operating License No. DPR-28 for the Vermont Yankee Nuclear Power Station. This amendment consists of changes to the Technical Specifications (TS) in response to your application dated August 5, 1983 and supplemented on March 4, 1985. Clarifying information was provided May 18, 1989.

This amendment modifies the Technical Specifications to add limiting conditions of operation and surveillance requirements for RPS power protection equipment.

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 65410.

Sincerely,

/s/

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

Enclosures:
1. Amendment No. 112 to License No. DPR-28
2. Safety Evaluation

cc w/enclosures:
See next page

[VY AMEND TAC 65410]

*See previous page for concurrences

DFO1
1/1

OFC	:PDI-3/LA*	:PDI-3/PM*	:OGC	:DIR/PDI-3*	:	:	:
NAME	:MRushbrook	:MFairtile:cb:		:RWessman	:	:	:
DATE	:5/31/89	: / /89	:6/1/89	: / /89	:	:	:

OFFICIAL RECORD COPY

CP-1 cc

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. 112, 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 its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Daniel G. McDonald

FOR 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 2, 1989

[VY AMEND TAC 65410]

OFC	:PDI-3/LA	:PDI-3/PM	:OGC	:D/PDI-3	:	:	:
NAME	:MRushbrook	:MFairtile:cb	:	:RWessman	:	:	: :
DATE	:5/3/89	:5/3/89	:6/1/89	:5/31/89	:	:	:

OFFICIAL RECORD COPY

DATE: June 2, 1989

AMENDMENT NO. 112 TO DPR-28 VERMONT YANKEE NUCLEAR POWER STATION

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Docket File 50-271←
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

June 2, 1989

Docket No. 50-271

Mr. R. W. Capstick
Licensing Engineering
Vermont Yankee Nuclear Power
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580 Main Street
Bolton, Massachusetts 01740-1398

Dear Mr. Capstick:

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The Commission has issued the enclosed Amendment No.112 to Facility Operating License No. DPR-28 for the Vermont Yankee Nuclear Power Station. This amendment consists of changes to the Technical Specifications (TS) in response to your application dated August 5, 1983 and supplemented on March 4, 1985. Clarifying information was provided May 18, 1989.

This amendment modifies the Technical Specifications to add limiting conditions of operation and surveillance requirements for RPS power protection equipment.

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 65410.

Sincerely,

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

Enclosures:
1. Amendment No.112 to License No. DPR-28
2. Safety Evaluation

cc w/enclosures:
See next page

Mr. R. W. Capstick
Vermont Yankee Nuclear Power Corporation

Vermont Yankee Nuclear Power Station

cc:

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Adjudicatory File (2)
Atomic Safety and Licensing Board
Panel Docket
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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. 112
License No. DPR-28

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

   A. The application for amendment filed by the Vermont Yankee Nuclear Power Corporation (the licensee) dated August 5, 1983 as supplemented on March 4, 1985 and clarified on May 18, 1989 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:

   (2) Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 112, 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 its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

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 2, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 112

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
175	175
---	175a*
177	177
---	177a*
---	177b*
178	178
---	178a*

*Denotes new page

3.10 LIMITING CONDITIONS FOR OPERATION	4.10 SURVEILLANCE REQUIREMENTS
3. Emergency Buses The emergency 4160 volt Buses 3 and 4, and 480 volt Buses 8 and 9 shall be energized and operable.	3. Emergency Buses The emergency 4160 volt buses and 480 volt buses shall be checked daily.
4. Off-Site Power a. At least one off-site transmission line and at least one start-up transformer in service. b. One of the following additional sources of delayed access power: The main stepup transformer and unit auxiliary transformer available and capable of supplying power to the emergency 4160 volt buses or, The 4160 volt tie line to Vernon Hydro-Electric Station capable of supplying power to either of the two emergency 4160 volt buses.	4. Off-Site Power The status of the off-site power sources shall be checked daily.
5. 480 V Uninterruptible Power Systems Both 480 V Uninterruptible Power Systems (UPS-1A, UPS-1B) and their respective Motor Control Centers (89A, 89B) shall be energized and operable.	5. 480 V Uninterruptible Power Systems a. The requirements of Specifications 4.10.A.2(a) and (b) shall be satisfied for each 480 V Uninterruptible Power System battery bank. b. Each Uninterruptible Power System battery bank shall be subjected to a performance discharge test every 5 years.

3.10 LIMITING CONDITIONS FOR OPERATION	4.10 SURVEILLANCE REQUIREMENTS
	c. Each 480 V Uninterruptible Power System shall be checked daily.
	d. 480 V Motor Control Centers 89A and 89B shall be checked daily.
	e. Once per operating cycle, the actual conditions under which the 480 V Uninterruptible Power Systems are required will be simulated and a test conducted to demonstrate equipment performance.
6. Reactor Protection System Power Protection	6. Reactor Protection System Power Protection
Two RPS power protection panels for each inservice RPS MG set or alternate power source shall be operable.	Once per operating cycle, the operability of each overvoltage, undervoltage, and underfrequency protective device shall be demonstrated by the performance of an instrument channel calibration test. Settings shall be verified to be in accordance with Table 4.10.1.

3.10 LIMITING CONDITON FOR OPERATION	4.10 SURVEILLANCE REQUIREMENTS
3. Off-Site Power	3. Off-Site Power
a. From and after the date that both startup transformers and one diesel generator or associated buses are made or found to be inoperable for any reason, reactor operation may continue provided the requirements of Specification 3.5.H.1 are satisfied.	a. When it is determined that one of the diesel generators or associated buses is inoperable, the requirements of Specification 4.5.H.1 shall be satisfied.
b. From and after the date that both delayed-access off-site power sources become unavailable, reactor operation may continue for seven days provided both emergency diesel generators, associated buses, and all low pressure core and containment cooling systems are operable.	b. When it is determined that both delayed-access off-site power sources are unavailable, both diesel generators, associated buses and all low pressure core and containment cooling systems shall be demonstrated to be operable immediately and daily thereafter.
4. 480 V Uninterruptible Power Systems	4. 480 V Uninterruptible Power System
From and after the date that one Uninterruptible Power System or its associated Motor Control Center are made or found to be inoperable for any reason, the requirements of Specification 3.5.A.4 shall be satisfied.	When it is determined that one Uninterruptible Power System or its associated Motor Control Center is inoperable, the requirements of Specification 4.5.A.4 shall be satisfied.
5. RPS Power Protection	
From and after the date that one of the two redundant RPS power protection panels on an in-service RPS MG set or alternate power supply is made or found to be inoperable, the associated RPS MG set or alternate supply will be taken out of service until the panel is restored to operable status.	

3.10 LIMITING CONDITIONS FOR OPERATION

C. Diesel Fuel

There shall be a minimum of 25,000 usable gallons of diesel fuel in the diesel fuel oil storage tank.

4.10 SURVEILLANCE REQUIREMENTS

C. Diesel Fuel

1. The quantity of diesel generator fuel shall be logged weekly and after each operation of the unit.

2. Once a month a sample of diesel fuel shall be taken and checked for quality. The quality shall be within the applicable limits specified on Table I of ASTM D975-68 and logged.

Table 4.10.1

Reactor Protection System Power Protection

Parameter	Setpoints for: Panels A1, A2, B1, B2, C1, C2
Overvoltage	≤ 125.5 volts
Overvoltage Time Delay	≤ 0.35 seconds
Undervoltage	≥ 111 volts
Undervoltage Time Delay	≤ 0.35 seconds
Underfrequency	≥ 56.5 Hz
Underfrequency Time Delay	≤ 0.35 seconds

AUXILIARY ELECTRIC POWER SYSTEMS

A. The objective of this Specification is to assure that adequate power will be available to operate the emergency safeguards equipment. Adequate power can be provided by any one of the following sources: either of the startup transformers, backfeed through the main transformer, the 4160 volt line from the Vernon Hydroelectric Station or either of the two diesel generators. The backfeed through the main transformer and 4160 volt Vernon line are both delayed access off-site power sources. Backfeeding through the main transformer can be accomplished by disconnecting the main generator from the main transformer and energizing the auxiliary transformer from the 345 kV switchyard through the main transformer. The time required to perform this disconnection is approximately six hours. The 4160 volt line from the Vernon Hydroelectric Station can be connected to either of the two emergency buses within seconds by simple manual switching operation in the Main Control Room.

Two 480 V Uninterruptible Power Systems, each consisting of a battery bank, battery charger, and a sold state inverter, supply power to the LPCIS valves via designated Motor Control Centers. The 480 V Uninterruptible Power Systems are redundant and independent of any on-site power sources.

This Specification assures that at least two off-site and two on-site power sources, and both 480 V Uninterruptible Power Systems will be available before the reactor is taken beyond "just critical" testing. In addition to assuring power source availability, all of the associated switchgear must be operable as specified to assure that the emergency cooling equipment can be operated, if required, from the power sources.

Station service power is supplied to the station through either the unit auxiliary transformer or the startup transformers. In order to start up the station, at least one startup transformer is required to supply the station auxiliary load. After the unit is synchronized to the system, the unit auxiliary transformer carries the station auxiliary load, except for the station cooling tower loads which are always supplied by one of the startup transformers. The station cooling tower loads are not required to perform an engineered safety feature function in the event of an accident; therefore, an alternate source of power is not essential. Normally one startup transformer supplies 4160 volt Buses 1 and 3, and the other supplies Buses 2 and 4; however, the two startup transformers are designed with adequate capacity such that, should one become or be made inoperable, temporary connections can be made to supply the total station load (less the cooling towers) from the other startup transformer.

A battery charger is supplied for each battery. In addition, the two 125 volt station batteries and the two 24 volt ECCS instrumentation batteries each have a spare charger available. Since one spare 24 volt and one 125 volt charger are available, one battery charger can be allowed out of service for maintenance and repairs.

Power for the Reactor Protection System is supplied by 120 V ac motor generators with an alternate supply from MCC-8B. Two redundant, Class 1E, seismically qualified power protection panels are connected in series with each ac power source. These panels provide overvoltage, undervoltage, and underfrequency protection for the system. Setpoints are chosen to be consistent with the input power requirements of the equipment connected to the bus.

B. Adequate power is available to operate the emergency safeguards equipment from either startup transformer or for minimum engineered safety features from either of the emergency diesel generators. Therefore, reactor operation is permitted for up to seven days with both delayed-access off-site power sources lost.

Each of the diesel generator units is capable of supplying 100 percent of the minimum emergency loads required under postulated design basis accident conditions. Each unit is physically and electrically independent of the other and of any off-site power source. Therefore, one diesel generator can be allowed out of service for a period of seven days without jeopardizing the safety of the station.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 112 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 August 5, 1983 and supplemented on March 4, 1985, the Vermont Yankee Nuclear Power Corporation (Vermont Yankee, the licensee) requested changes to Facility Operating License No. DPR-28. Clarifying information was provided on May 18, 1989 which did not substantially change the March 4, 1985 letter, therefore a determination was made not to renotice the application.

The changes modify the Technical Specifications to add limiting conditions of operation and surveillance requirements for the reactor protection system (RPS) power protection panels.

2.0 Background

By NRC generic letter dated September 24, 1980, the staff expressed concern regarding the design of RPS monitoring equipment in BWRs, and requested appropriate modifications. By letter dated June 27, 1984 the staff found that the Vermont Yankee plant proposed design modifications addressing these concerns were acceptable, and proposed administratively-controlled interim set points and surveillance requirements were acceptable until finalization and approval of Technical Specifications.

3.0 Evaluation

The RPS protection panels were installed to protect the RPS equipment from a postulated seismic failure of the RPS normal power supply (RPS MG sets). Identical panels were also installed on the alternate supply for the RPS. Undervoltage, overvoltage, and underfrequency setpoints were chosen for the Technical Specifications based on the requirements of the RPS equipment connected to the RPS busses. Equipment ratings and line voltage drops were taken into account. The time delays were included in the Technical Specifications for the protection panels to eliminate spurious trips due to transients and noise. The time delays were chosen to allow protection panels to trip before the equipment operating limits are reached, therefore, maximum delay settings were limited by RPS equipment ratings.

The changes included in this proposal add requirements to the Technical Specifications to enhance the reliability of the RPS protection panels. The addition of these changes to the Technical Specifications improves the reliability of the RPS power supplies and enhances the overall safety of the plant, therefore; the staff finds the proposed changes to be acceptable.

4.0 Environmental Consideration

This amendment involves a change in 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 assessment need be prepared in connection with the issuance of this amendment.

5.0 Conclusion

We have concluded, based on the consideration discussed above, that (1) there is reasonable assurance that the health safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations, and issuance of this amendment will not be inimical to to the common defense and security or to the health and safety of the public.

Principal Contributor: V. Rooney

Dated: June 2, 1989