January 26, 1990

Docket No. 50-271

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.118 TO FACILITY OPERATING LICENSE NO. DPR-28 - VERMONT YANKEE NUCLEAR POWER STATION (TAC NO. 75247)

The Commission has issued the enclosed Amendment No. 118 to Facility Operating License No. DPR-28 for the Vermont Yankee Nuclear Power Station. This amendment is in response to your application dated November 9, 1989.

This amendment changes the Technical Specifications (TS) by extending the out-of-service time for the Uninterruptible Power Supply from 7 to 30-days in the Limiting Conditions for Operation (LCO).

By letter dated December 1, 1989 the State of Vermont submitted comments on this proposed TS change request. The State was concerned about a potential reduction in the margin of safety by an extension of the LCO allowed outage time to 30-days. This concern is addressed in our Safety Evaluation. In addition, the State expressed concerns about the reliability of the Vernon Hydroelectric Station and the ability of the Vermont Yankee operators to perform power transfers from the Vernon Station to the Vermont Yankee emergency busses. These concerns are also addressed in our Safety Evaluation.

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

Sincerely,

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

Enclosures:
1. Amendment No.118 to License No. DPR-28
2. Safety Evaluation

cc w/enclosures:
See next page

OFC:	PDI-3	:PDI-3	:PDI-3	:	:	:	:
NAME:	Rushbrook	:Fairtile	:Wessman	:	:	:	:
DATE:	1/5/90	: 1/9/90	: 1/26/90	:	:	:	:

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P PDC

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/s/

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: January 26, 1990

OFC	:PDI-3/PM	:PDI-3/LA	:OGC	:PDI-3/D	:	:	:
NAME	:MBFairtile	:MRushbrook	:	:RHWessman	:	:	:
DATE	:1/9/90	:1/5/90	:1/11/90	:1/26/90	:	:	:

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

January 26, 1990

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Sincerely,

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.118 to License No. DPR-28
2. Safety Evaluation

cc w/enclosures:
See next page

Mr. L. A. Tremblay

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Washington, D.C. 20555

Mr. L. A. Tremblay

cc:
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Administrative Judge
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Washington, D.C. 20555

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

Robert M. Lazo, Chairman
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Washington, D.C. 20555

Jerry Harbour
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Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

AMENDMENT NO. 118 TO DPR-28 - VERMONT YANKEE NUCLEAR POWER STATION - Dated: January 26, 199

DISTRIBUTION:
Docket No. 50-271
NRC PDR
LOCAL PDR
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VERMONT YANKEE NUCLEAR POWER CORPORATION

DOCKET NO. 50-271

VERMONT YANKEE NUCLEAR POWER STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 118
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 November 9, 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:

   Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 118 , 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 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: January 26, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 118

FACILITY OPERATING LICENSE NO. DPR-28

DOCKET NO. 50-271

Replace the following page of the Appendix A Technical Specifications with the attached page. The revised page is identified by Amendment number and contains vertical lines indicating the area of change.

Remove	Insert
87	87

3.5 LIMITING CONDITION FOR OPERATION	4.5 SURVEILLANCE REQUIREMENTS
active components of the LPCI Containment Cooling Subsystem and all active components of both Core Spray Subsystems and the diesel generators required for operation of such components if no external source of power were available, shall be operable.	
4. a. From and after the date that a LPCI Subsystem is made or found to be inoperable due to failure of the associated UPS, reactor operation is permissible only during the succeeding thirty days, for the 1989/90 operating cycle, unless it is sooner made operable, provided that during that time the associated motor control center (89A or 89B) is powered from its respective maintenance tie, all active components of the other LPCI and the Containment Cooling Subsystem, the Core Spray Subsystems, and the emergency diesel generators shall be operable, the requirements of Specification 3.10.A.4 are met, and the 4160 volt tie line to the Vernon Hydro is the operable delayed access power source.	4. When a LPCI Subsystem is made or found to be inoperable, the active components of the redundant LPCI Subsystem shall have been or shall be demonstrated to be operable within 24 hours (except the Recirculation System discharge valves).
b. From and after the date that a LPCI Subsystem is made or found to be inoperable for any reason, other than failure of the UPS during the 1989/90 operating cycle, or Specification 3.5.A.4.a is not met, reactor operation is permissible only during the succeeding seven days unless it is sooner made operable, provided that during that time all active components of the other LPCI and the Containment Cooling Subsystem, the Core Spray Subsystems, and the diesel generators required for operation of such components if no external source of power were available, shall be operable.	
5. All recirculation pump discharge valves and bypass valves shall be operable or closed prior to reactor startup.	5. a. All recirculation pump discharge and bypass valves shall be tested for operability during any period of reactor cold shutdown exceeding 48 hours, if operability tests have not been performed during the preceding 31 days.
	b. Recirculation Pump discharge valves shall be tested to verify full open to full closed in $27 \leq t \leq 33$ seconds each refueling outage.
6. If the requirements of Specification 3.5.A cannot be met, an orderly shutdown of the reactor shall be initiated and the reactor shall be in a cold shutdown condition within 24 hours.	
B. Containment Spray Cooling Capability	B. Containment Spray Cooling Capability
1. Both containment cooling spray loops are required to be operable when the reactor water temperature is greater than 212°F except that a Containment	1. Surveillance of the drywell spray loops shall be performed as follows. During each five-year period, an air test shall be performed on the drywell spray headers and nozzles.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO.118 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 dated November 9, 1989, 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 extend the out-of-service time for the Uninterruptible Power Supply (UPS) from 7 to 30 days in the Limiting Conditions for Operation (LCO) in Technical Specification (TS) 3.5.A.4.

2.0 BACKGROUND

The proposed change extends the present LCO for an inoperable UPS from 7 days to 30 days until the forthcoming refueling outage (Fall, 1990). Those low pressure coolant injection (LPCI) valves which are normally powered by the UPS would be connected to an alternate power supply from the onsite 480-Vac emergency power distribution system whenever either UPS-1A or -1B is inoperable. The licensee committed in their November 9, 1989 letter to replace the existing UPS System prior to startup from the 1990 refueling outage. These TS will be reviewed, at that time, for suitability with the new UPS System. On November 5, 1989, UPS-1A was declared inoperable, the licensee found that obtaining parts and making necessary repairs during the required 7-day LCO became increasingly difficult over time, as Class 1E equipment has generally become more difficult to procure. Therefore, on November 9, 1989, the NRC granted a Temporary Waiver of Compliance from TS section 3.5.A.4 in response to the licensee's November 9, 1989 letter. This allowed that the subject LCO be extended from 7 days to 30 days. The waiver expired on December 11, 1989. Although an effort to restore the UPS was successful and the waiver was not needed, the licensee determined that the subject TS relief may still be advisable until a new UPS system is installed.

3.0 EVALUATION

The UPS is the normal power supply used to provide 480-Vac Class 1E power to LPCI valves. It is used to reposition certain LPCI valves during the initiation of a LOCA. An alternate power supply from the onsite emergency power distribution system is also available when a UPS is found to be inoperable.

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The UPS system was added when the loop selection logic, which required a swing bus and a bus transfer scheme, was removed at VY in 1976. Since the swing bus transfer scheme was susceptible to a single failure which could prevent the swing bus from seeking its alternate AC power, a total loss of LPCI function could occur. Thus, the UPS design was incorporated to provide independent power sources to the LPCI valves assigned to each split-bus to enhance the reliability of the LPCI system.

Upon an ESF actuation, both UPSs automatically isolate from the emergency buses (8 & 9), but continue to supply power to the LPCI valves (MCC 89A & 89B) from the UPS, completely independent of the onsite power distribution system. Thus, it eliminates any single failure vulnerability resulting from the onsite emergency power source failures (AC & DC).

The licensee's November 9, 1989 request identified the worst case accident scenario during the extended LCO period with an inoperable UPS as follows:

1) Loss of all offsite power

2) a double-ended recirculation discharge break in one loop (LOCA)

3) a single failure of emergency diesel generator (EDG) which supplies power to the LPCI valves and pumps in the other unbroken) loop

Under this scenario, the licensee finds that both LPCI loops and one core spray pump would not be available, thus leaving only one core spray pump to perform ECCS functions.

The licensee stated that the above scenario (i.e., single failure associated with EDG) is a very low probability event since the EDG buses can be powered from offsite AC power sources as well as from the nearby Vernon Hydro Station.

The staff has reviewed the onsite power distribution system with respect to the worst case accident scenario postulated by the licensee. We concur with the licensee that the LPCI valves assigned to the inoperable UPS could be connected to the already existing alternate onsite 480-Vac power distribution system by closing a maintenance tie when the UPS is lost. The LPCI valves are also capable of being powered from either onsite EDGs or offsite power through the startup transformers. In addition, we find that the above LPCI valves can also be fed from the Vernon Hydro Station. For a loss of either normal power (offsite) or onsite EDG, the licensee demonstrated that the power transfer to the hydro station can be done manually in a matter of seconds from the control room and this switching operation is covered by the current plant procedures and operator training. The licensee also stated that the hydro station has been energized continuously, thus there is no need to startup any equipment and it has shown excellent reliability with a history of only two unplanned outages (total of less than 3 hours) since 1965.

In addition, the licensee committed, as shown in the amended TS 3.5.A.4, that a 7-day out-of-service interval would not be exceeded unless the maintenance tie is available, the emergency diesel generators are operable and the 4160 volt tie line from Vernon Hydro is available.

4.0 DISCUSSION OF STATE OF VERMONT'S COMMENTS

By letter dated December 1, 1989 the State of Vermont submitted comments on this proposed TS change request. The State was concerned about a potential reduction in the margin of safety by extending the outage time in the LCO from 7 to 30-days. In Section 3.0 of this Safety Evaluation, we stated that the 7-day LCO would not be exceeded unless emergency power is available from both the Vernon Hydro and both diesel generators and the maintenance tie is available. Therefore, operation, when permitted under the 30-day LCO, would present the identical margin of safety as in the 7-day LCO.

The State also expressed concern about the reliability of the Vernon Hydro Station and the ability of the plant operators to perform any needed power transfers from Vernon to the VY emergency busses. These concerns are also addressed in Section 3.0 of this Safety Evaluation.

5.0 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 while there was public comment on our finding, the comments did not result in a change to our 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.

6.0 CONCLUSION

Based on our evaluation of the above worst case accident scenario and the licensee's commitments, it is our judgement that a loss of all offsite power including the Vernon Hydro Station, a LOCA concurrent with an additional single failure which leaves one core spray to perform ECCS functions are a very unlikely coincidence of events during the extended 30-day LCO period with an inoperable UPS. Therefore, we conclude that this relief from the required 7-day requirements of the present TS until the next refueling outage is acceptable. In addition, TS 3.5.A.4 would not permit a greater than 7-day out-of-service interval unless the maintenance tie, emergency diesels and Vernon Hydro is an operable delayed access power source.

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and 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 (3) the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: P. Kang

Dated: January 26, 1990