

August 30, 1999

Mr. Robert J. Wanczyk  
Acting Director of Operations  
Vermont Yankee Nuclear Power Corporation  
185 Old Ferry Road  
Brattleboro, VT 05301

SUBJECT: VERMONT YANKEE NUCLEAR POWER STATION - ISSUANCE OF  
AMENDMENT RE: SUPPRESSION POOL WATER TEMPERATURE  
SURVEILLANCE REQUIREMENTS (TAC NO. MA5616)

Dear Mr. Wanczyk:

The Commission has issued the enclosed Amendment No. 174 to Facility Operating License DPR-28 for the Vermont Yankee Nuclear Power Station, in response to your application dated May 26, 1999.

The amendment revises the suppression pool water temperature surveillance requirements to specify monitoring the temperature every 5 minutes when performing testing that adds heat to the suppression pool. In addition, the amendment revises the requirement to check the suppression chamber water level and temperature from "once per shift" to "daily" and specifies that it is the average temperature that is checked.

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

Sincerely,

ORIGINAL SIGNED BY:

Richard P. Croteau, Project Manager, Section 2  
Project Directorate I  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-271

- Enclosures: 1. Amendment No. 174 to License No. DPR-28
- 2. Safety Evaluation

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

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Sincerely,

A handwritten signature in black ink, appearing to read "R. Croteau".

Richard P. Croteau, Project Manager, Section 2  
Project Directorate I  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-271

Enclosures: 1. Amendment No. 174 to  
License No. DPR-28  
2. Safety Evaluation

cc w/ encls: See next page

Vermont Yankee Nuclear Power Station

cc:

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

VERMONT YANKEE NUCLEAR POWER CORPORATION

DOCKET NO. 50-271

VERMONT YANKEE NUCLEAR POWER STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 174  
License No. DPR-28

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment filed by the Vermont Yankee Nuclear Power Corporation (the licensee) dated May 26, 1999, 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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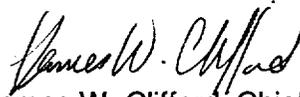
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR-28 is hereby amended to read as follows:

(B) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 174, 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 and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION



James W. Clifford, Chief, Section 2  
Project Directorate I  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical  
Specifications

Date of Issuance: August 30, 1999

ATTACHMENT TO LICENSE AMENDMENT NO. 174

FACILITY OPERATING LICENSE NO. DPR-28

DOCKET NO. 50-271

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

146

166

166a

Insert

146

166

166a

### 3.7 LIMITING CONDITIONS FOR OPERATION

#### 3.7 STATION CONTAINMENT SYSTEMS

##### Applicability:

Applies to the operating status of the primary and secondary containment systems.

##### Objective:

To assure the integrity of the primary and secondary containment systems.

##### Specification:

#### A. Primary Containment

1. Whenever primary containment is required, the volume and temperature of the water in the suppression chamber shall be maintained within the following limits:
  - a. Maximum Water Temperature during normal operation - 90°F.
  - b. Maximum Water Temperature during any test operation which adds heat to the suppression pool - 100°F; however, it shall not remain above 90°F for more than 24 hours.
  - c. If Torus Water Temperature exceeds 110°F, initiate an immediate scram of the reactor. Power operation shall not be resumed until the pool temperature is reduced below 90°F.
  - d. During reactor isolation conditions, the reactor pressure vessel shall be depressurized to less than 200 psig

### 4.7 SURVEILLANCE REQUIREMENTS

#### 4.7 STATION CONTAINMENT SYSTEMS

##### Applicability:

Applies to the primary and secondary containment system integrity.

##### Objective:

To verify the integrity of the primary and secondary containments.

##### Specification:

#### A. Primary Containment

1. Verify daily that the suppression chamber water level and average temperature are within applicable limits.

A visual inspection of the suppression chamber interior including water line regions and the interior painted surfaces above the water line shall be made at each refueling outage.

Verify suppression pool average temperature is within the applicable limits every 5 minutes when performing testing that adds heat to the suppression pool.

Whenever there is indication of relief valve operation with the temperature of the suppression pool reaching 160°F or more and the primary coolant system pressure greater than 200 psig, an external visual examination of the suppression chamber shall be conducted before resuming power operation.

BASES: 2 7 (Cont'd)

The Standby Gas Treatment System (SGTS) is designed to filter and exhaust the Reactor Building atmosphere to the stack during secondary containment isolation conditions, with a minimum release of radioactive materials from the Reactor Building to the environs. To insure that the standby gas treatment system will be effective in removing radioactive contaminants from the Reactor Building air, the system is tested periodically to meet the intent of ANSI N510-1975. Both standby gas treatment fans are designed to automatically start upon containment isolation and to maintain the Reactor Building pressure to approximately a negative 0.15 inch water gauge pressure; all leakage should be in-leakage. Should the fan fail to start, the redundant alternate fan and filter system is designed to start automatically. Each of the two fans has 100% capacity. This substantiates the availability of the operable circuit and results in no added risk; thus, reactor operation or refueling operation can continue. If neither circuit is operable, the plant is brought to a condition where the system is not required.

When the reactor is in cold shutdown or refueling the drywell may be open and the Reactor Building becomes the only containment system. During cold shutdown the probability and consequences of a DBA LOCA are substantially reduced due to the pressure and temperature limitations in this mode. However, for other situations under which significant radioactive release can be postulated, such as during operations with a potential for draining the reactor vessel, during core alterations, or during movement of irradiated fuel in the secondary containment, operability of standby gas treatment is required. An alternate electrical power source for the purposes of Specification 3.7.B.1.b shall consist of either an Emergency Diesel Generator (EDG) or the Vernon Hydro tie line. Maintaining availability of the Vernon Hydro tie line as an alternative to one of the EDGs in this condition provides assurance that standby gas treatment can, if required, be operated without placing undue constraints on EDG maintenance availability. Inoperability of both circuits of the SGTS or both EDGs during refueling operations requires suspension of activities that represent a potential for releasing radioactive material to the secondary containment, thus placing the plant in a condition that minimizes risk.

Use of the SGTS, without the fan and the 9 kW heater in operation, as a vent path during torus venting does not impact subsequent adsorber capability because of the very low flows and because humidity control is maintained by the standby 1 kW heaters, therefore operation in this manner does not accrue as operating time.

D. Primary Containment Isolation Valves

Double isolation valves are provided on lines that penetrate the primary containment and communicate directly with the reactor vessel and on lines that penetrate the primary containment and communicate with the primary containment free space. Closure of one of the valves in each line would be sufficient to maintain the integrity of the pressure suppression system. Automatic initiation is required to minimize the potential leakage paths from the containment in the event of a loss-of-coolant accident.

4.7 STATION CONTAINMENT SYSTEMSA. Primary Containment System

The interiors of the drywell and suppression chamber are painted to prevent rusting. The inspection of the paint during each major refueling outage assures the paint is intact. Experience with this type of paint at fossil fueled generating stations indicates that the inspection interval is adequate.

Because of the large volume and thermal capacity of the suppression pool, the level and temperature normally changes very slowly and monitoring these parameters daily is sufficient to establish any temperature trends.

The average temperature is determined by taking an arithmetic average of OPERABLE suppression pool water temperature channels. The daily frequency has been shown, based on operating experience, to be acceptable. The frequencies are further justified in view of other indications available in the Control Room, including alarms, to alert operators to an abnormal condition.

When heat is being added to the suppression pool by testing, however, it is necessary to monitor suppression pool temperature more frequently. The 5 minute frequency during testing is justified by the rate at which tests will heat up the suppression pool. This has been shown to be acceptable based on operating experience, and provides assurance that allowable pool temperatures are not exceeded.

The requirement for an external visual examination following any event where potentially high loadings could occur provides assurance that no significant damage was encountered. Particular attention should be focused on structural discontinuities in the vicinity of the relief valve discharge since these are expected to be the points of highest stress. Visual inspection of the suppression chamber including water line regions each refueling outage is adequate to detect any changes in the suppression chamber structures.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 174 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 May 26, 1999, the Vermont Yankee Nuclear Power Corporation (the licensee) submitted a request to amend the Vermont Yankee Nuclear Power Station Technical Specifications (TSs). The proposed amendment would revise the suppression pool water temperature surveillance TS requirements to specify monitoring the temperature every 5 minutes when performing testing that adds heat to the suppression pool. In addition, the amendment revises the TS requirement to check the suppression chamber water level and temperature from "once per shift" to "daily" and specifies that it is the average temperature that is checked.

2.0 EVALUATION

The suppression pool is part of the primary containment system. The safety objective of the primary containment system, in conjunction with the core standby cooling systems, is to provide the capacity to limit the release of fission products to the plant environs in the event of a postulated loss-of-coolant accident so that offsite doses would be well below the values specified in 10 CFR Part 100. TS limits exist on the suppression pool temperature to ensure that the safety objective for the system is met. The TS limits on the suppression pool temperature are not changed by this amendment.

The licensee proposed changing TS 4.7.A.1 as follows:

Replace the first sentence "The suppression chamber water level and temperature shall be checked once per shift" with the new sentence "Verify daily that the suppression chamber water level and average temperature are within applicable limits."

Replace the third sentence "Whenever there is indication of relief valve operation which adds heat to the suppression pool, the pool temperature shall be continually monitored and also observed and logged every 5 minutes until the heat addition is terminated" with the new sentence "Verify suppression pool average temperature is within the applicable limits every 5 minutes when performing testing that adds heat to the suppression pool."

Also add paragraph breaks to separate individual requirements within the larger paragraph.

The licensee also proposed TS Bases changes to make the Basis consistent with the proposed TS changes and more clearly specify the Basis for TS 4.7.A.1.

The suppression pool temperature is regularly monitored to ensure that the required limits are met. The staff considers that use of the average temperature provides an adequate measure of the overall temperature of the suppression pool which ensures that the safety objective of the system can be met with the average temperature within limits. The staff considers daily verification that the suppression chamber water level and average temperature are within applicable limits to be acceptable since operating experience indicates that changes in temperature and level are minimal during normal operation unless performing testing that adds heat to the suppression pool. When performing testing that adds heat to the suppression pool more frequent monitoring is required. The staff considers that the 5-minute frequency proposed by the licensee is adequate based on the rates at which testing adds heat to the suppression pool and this frequency has been shown to be acceptable based on operating history. This increased frequency provides assurance that the allowable pool temperatures will not be exceeded. The frequencies for monitoring the suppression pool parameters are further justified in view of the other indications available in the control room, including alarms, to alert the operators to an abnormal suppression pool condition. The staff considers that the proposed changes will ensure that the suppression pool parameters will be adequately monitored. The proposed changes are, therefore, acceptable. In addition, the staff notes that the proposed changes are consistent with NUREG-1433, Rev. 1, BWR Standard Technical Specifications.

The staff has no objection to the proposed Bases change associated with this amendment request.

### 3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Vermont State official was notified of the proposed issuance of the amendment. The State official had no comments.

### 4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in 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 issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (64 FR 40909). Accordingly, the 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 the amendment.

## 5.0 CONCLUSION

The Commission 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, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: R. Croteau

Date: August 30, 1999