

MAY 21 1975

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Docket No. 50-271

Yankee Atomic Electric Company  
 ATTN: Mr. G. Carl Andognini  
 Assistant to the Vice President  
 20 Turnpike Road  
 Westboro, Massachusetts 01581

Gentlemen:

The Commission has issued the enclosed Amendment No. 13 to Facility License No. DPR-28. This amendment includes Change No. 24 to the Technical Specifications and is in response to your request dated March 3, 1975.

This amendment authorizes operation at 100 percent of rated power level with three of the four relief valves operable.

Copies of our Safety Evaluation and the Federal Register Notice relating to this action also are enclosed.

Sincerely,

Original signed by  
 Dennis L. Ziemann  
 Dennis L. Ziemann, Chief  
 Operating Reactors Branch #2  
 Division of Reactor Licensing

Enclosures:

1. Amendment 13  
w/Change No. 24
2. Safety Evaluation
3. Federal Register Notice

cc w/enclosures:  
 See next page

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OFFICE ➤	RL:ORB #2 <i>END</i>	RL:ORB #2 <i>MC</i>	OELD <i>Kartalia</i>	RL:ORB #2		
SURNAME ➤	RMDiggs	FDAnderson:tc		DLZiemann		
DATE ➤	4/10/75	4/10/75 <sup>5/16/75</sup>	3/21/75	4/21/75		

MAY 21 1975

cc w/enclosures:

Mr. James E. Griffin, President  
Vermont Yankee Nuclear Power Corporation  
77 Grove Street  
Rutland, Vermont 05701

Mr. Donald E. Vandenburg, Vice President  
Vermont Yankee Nuclear Power Corporation  
Turnpike Road, Route 9  
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John A. Ritscher, Esquire  
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Department of the Attorney General  
State House, Room 370  
Boston, Massachusetts 02133

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Natural Resources Defense Council  
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Washington, D. C. 20036

Honorable Kimberly B. Cheney  
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Assistant Attorney General  
Office of the Attorney General  
State Capitol Building  
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John R. Stanton, Director  
Radiation Control Agency  
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Concord, New Hampshire 03301

Chairman, Vermont Public  
Service Board  
Seven School Street  
Montpelier, Vermont 05602

John W. Stevens, Director  
Conservation Society of Southern  
Vermont  
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Townshend, Vermont 05353

Mr. David M. Scott  
Radiation Health Engineer  
Agency of Human Services  
Division of Occupational Health  
P. O. Box 607  
Barre, Vermont 05641

New England Coalition on Nuclear  
Pollution  
Hill and Dale Farm  
West Hill - Faraway Road  
Putney, Vermont 05346

Additional cc: See next page

MAY 21 1975

cc w/enclosures:  
Mr. Raymond H. Puffer  
Chairman  
Board of Selectman  
Vernon, Vermont 05354

cc w/enclosures and cy  
of VY's filing dtd 3/3/75:  
Mr. Richard V. DeGrasse  
State of Vermont  
Public Service Board  
7 School Street  
Montpelier, Vermont 05602

Mr. Wallace Stickney  
Environmental Protection Agency  
JFK Federal Building  
Boston, Massachusetts 02203

VERMONT YANKEE NUCLEAR POWER CORPORATION

DOCKET NO. 50-271

VERMONT YANKEE NUCLEAR POWER STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 13  
License No. DPR-28

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Vermont Yankee Nuclear Power Corporation (the licensee) dated March 3, 1975, 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; and
  - 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.
2. Accordingly, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment and Paragraph 3.B of Facility License No. DPR-28 is hereby amended to read as follows:

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"B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications, as revised by issued changes thereto through Change No. 24."

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

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by  
Dennis L. Ziemann

Dennis L. Ziemann, Chief  
Operating Reactors Branch #2  
Division of Reactor Licensing

Attachment:  
Change No. 24 to the  
Technical Specifications

Date of Issuance: MAY 21 1975

OFFICE ➤						
SURNAME ➤						
DATE ➤						

ATTACHMENT TO LICENSE AMENDMENT NO. 13

CHANGE NO. 24 TO THE TECHNICAL SPECIFICATIONS

FACILITY OPERATING LICENSE NO. DPR-28

DOCKET NO. 50-271

Delete pages 108R and 122R from the Appendix A Technical Specifications and insert the attached replacement pages 108 and 122. The changed areas on the revised pages are shown by marginal lines.

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### 3.6 LIMITING CONDITIONS FOR OPERATION

### 4.6 SURVEILLANCE REQUIREMENTS

#### C. Coolant Leakage

1. Any time irradiated fuel is in the reactor vessel and reactor coolant temperature is above 212°F, reactor coolant leakage into the primary containment from unidentified sources shall not exceed 5 gpm. In addition, the total reactor coolant system leakage into the primary containment shall not exceed 25 gpm.
2. Both the sump and air sampling systems shall be operable during power operation. From and after the date that one of these systems is made or found inoperable for any reason, reactor operation is permissible only during succeeding seven days.
3. If these conditions cannot be met, initiate an orderly shutdown and the reactor shall be in the cold shutdown condition within 24 hours.

#### D. Safety and Relief Valves

1. During reactor power operating conditions and whenever the reactor coolant pressure is greater than 120 psig and temperature greater than 350°F, both safety valves shall be operable. Three of the four relief valves shall be operable. 24
2. If Specification 3.6.D.1 is not met, initiate an orderly shutdown and the reactor coolant pressure shall be below 120 psig and 350°F within 24 hours.

#### C. Coolant Leakage

Reactor coolant system leakage shall be checked and logged at least once per day.

#### D. Safety and Relief Valves

1. A minimum of 1/2 of all safety valves shall be bench checked or replaced with a bench checked valve each refueling outage. Both valves shall be checked or replaced every two refueling outages. The lift point of the safety valves shall be set as specified in Specification 2.2.B.
2. A minimum of 1/2 of all relief valves shall be bench checked or replaced with a bench-checked valve each refueling outage. All four valves shall be checked or replaced every two refueling outages. The set pressures shall be as specified in Specification 2.2.B.

### 3.6 & 4.6 (Cont'd)

greater than the limit specified for unidentified leakage, the probability is small that imperfections or cracks associated with such leakage would grow rapidly. Leakage less than the limit specified can be detected within a few hours utilizing the available leakage detection systems. If the limit is exceeded and the origin cannot be determined in a reasonably short time the plant should be shut down to allow further investigation and corrective action.

The removal capacity from the drywell floor drain sump and the equipment drain sump is 50 gpm each. Removal of 50 gpm from either of these sumps can be accomplished with considerable margin.

#### D. Safety and Relief Valves

Analysis has shown that only three of the four relief valves are required to provide a pressure margin 25 psi below the safety valve actuation settings for the limiting overpressure transient. Consequently, 100% power operation is permitted for three relief valve operation. For the purpose of this limiting condition a relief valve that is unable to actuate within tolerance of its set pressure is considered to be as inoperable as a mechanically malfunctioning valve. 24

Experience in safety valve operation shows that a testing of 50% of the safety valves per refueling outage is adequate to detect failures or deterioration. The tolerance value is specified in Section III of the ASME Boiler and Pressure Vessel Code as  $\pm 1\%$  of design pressure. An analysis has been performed which shows that with all safety valves set 1% higher the reactor coolant pressure safety limit of 1375 psig is not exceeded.

#### E. Structural Integrity

A pre-service inspection of the components listed in Table 4.2-4 of the FSAR will be conducted after site erection to assure freedom from defects greater than code allowance; in addition, this will serve as a reference base for further inspections. Prior to operation, the reactor primary system will be free of gross defects. In addition, the facility has been designed such that gross defects should not occur throughout plant life. The inspection program given in Table 4.2-4 was based on the proposed ASME code for in-service inspection which was followed except where accessibility for inspection was not provided. This inspection provides further assurance that gross defects are not occurring after the system is in service. This inspection will reveal problem areas should they occur before a leak develops.

Extensive visual inspection for leaks will be made periodically on critical systems. The inspection program specified encompasses the major areas of the vessel and piping systems within the drywell. The inspection period is based on the observed rate of growth of defects from fatigue studies sponsored by the NRC. These studies show that it requires thousands of stress cycles beyond any expected to occur in a reactor system to propagate a crack. The test frequency established is at intervals such that in comparison to study results only a small number of stress cycles at values below limits will occur. On this basis, it is considered that the test frequencies are adequate.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 13 TO LICENSE NO. DPR-28

(CHANGE NO. 24 TO THE TECHNICAL SPECIFICATIONS)

VERMONT YANKEE NUCLEAR POWER CORPORATION

VERMONT YANKEE NUCLEAR POWER STATION

DOCKET NO. 50-271

INTRODUCTION

By letter dated March 3, 1975, Vermont Yankee Nuclear Power Corporation (VYNPC) requested a change to the Technical Specifications appended to Facility Operating License No. DPR-28 for the Vermont Yankee Nuclear Power Station (VYNPS). The proposed change would increase the allowable power level from 90 percent to 100 percent of rated power level with three of the four relief valves operable.

DISCUSSION

As stated in the Safety Evaluation for Change No. 16 to the Technical Specifications dated March 28, 1974, the fourth relief valve was required to open to mitigate overpressure transients at high power levels for the load rejection with bypass valve failure accident at end-of-cycle for the reactor core operating prior to the November 1974 refueling outage. Until the scram reactivity concerns at end-of-cycle are resolved on a generic basis, a transient analysis to determine the acceptable power level for the adequacy of the relief valve capacity must be performed for each operating cycle based on scram reactivity curves appropriate for the conditions of that cycle. The March 3, 1975 submittal by VYNPC provides this analysis for the current operating reactor core in VYNPS. The results of the analysis show that operation at 100% of rated power with one inoperable relief valve can continue indefinitely without reducing the normal safety margin to the safety valve nominal setting for the most severe overpressure transient. The licensee's analysis considered the current VYNPS reactor core that will be operating until the Spring 1976 outage. The analysis also considered deletion of



the limiting safety system setting relative to the delay time for reactor scram upon actuation of the turbine control valve fast closure signal approved by Amendment No. 12 dated December 3, 1974. The deletion of the 300 milliseconds delay time would reduce the pressure transient resulting from generator trip or generator load rejection to less than that calculated for the turbine trip without bypass as stated in our Safety Evaluation for Amendment No. 12.

We have reviewed the results of the overpressure transient analysis for the current reactor cycle of VYNPS in which it was shown that no power reduction was necessary to maintain at least the 25 psi margin to the safety valve nominal settings for the most severe overpressure transient with one relief valve inoperable. The results of the licensee's analysis is acceptable to the staff. The licensee has used the same method for analysis that was acceptable to the staff for Change No. 16 dated March 28, 1974 in which a reduction of power to 90 percent full power was required if one relief valve became inoperable during the previous fuel cycle. The licensee has used the turbine trip without bypass transient with one relief valve inoperable as the most severe overpressure transient as the staff concluded in its Safety Evaluation for Amendment No. 12 dated December 3, 1974. The normal safety margin of 25 psi to the safety valve nominal settings has been maintained in the licensee's analysis.

Under the operating conditions for the current core, we have concluded that full power operation with three relief valves operable can be permitted without a reduction in the safety margin during this entire fuel cycle. Therefore, the previous power restriction to 90 percent of rated power level with three relief valves operable can be deleted.

#### CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) because the change does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the change does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: **MAY 21 1975**

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-271

VERMONT YANKEE NUCLEAR POWER CORPORATION

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY  
OPERATING LICENSE

Notice is hereby given that the U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 13 to Facility Operating License No. DPR-28 issued to Vermont Yankee Nuclear Power Corporation which revised Technical Specifications for operation of the Vermont Yankee Nuclear Power Station, located near Vernon, Vermont. The amendment is effective as of its date of issuance.

The amendment increases the allowable power level with three of the four relief valves operable from 90 percent to 100 percent of rated power level. The increased power level is due to core modifications previously approved and made and does not change the safety margin to the safety valve setting associated with the most severe overpressure transient.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment is not required since the amendment does not involve a significant hazards consideration.

For further details with respect to this action, see (1) the application for amendment dated March 3, 1975, (2) Amendment No. 13 to License No. DPR-28, with Change No. 24, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection

at the Commission's Public Document Room, 1717 H Street, N. W.,  
Washington, D. C. and at the Brooks Memorial Library at 224 Main Street,  
Brattleboro, Vermont 05301.

A copy of items (2) and (3) may be obtained upon request addressed  
to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555,  
Attention: Director, Division of Reactor Licensing.

Dated at Bethesda, Maryland, this **21st day of May 1975**

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by  
Dennis L. Ziemann

Dennis L. Ziemann, Chief  
Operating Reactors Branch #2  
Division of Reactor Licensing

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SURNAME ➤						
DATE ➤						

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 13 TO LICENSE NO. DPR-28

(CHANGE NO. 24 TO THE TECHNICAL SPECIFICATIONS)

VERMONT YANKEE NUCLEAR POWER CORPORATION

VERMONT YANKEE NUCLEAR POWER STATION

DOCKET NO. 50-271

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DISCUSSION

As stated in the Safety Evaluation for Change No. 16 to the Technical Specifications dated March 28, 1974, the fourth relief valve was required to open to mitigate overpressure transients at high power levels for the load rejection with bypass valve failure accident at end-of-cycle for the reactor core operating prior to the November 1974 refueling outage. Until the scram reactivity concerns at end-of-cycle are resolved on a generic basis, a transient analysis to determine the acceptable power level for the adequacy of the relief valve capacity must be performed for each operating cycle. *based on scram reactivity curves appropriate for the conditions of that cycle.* The March 3, 1975 submittal by VYNPC provides this analysis for the current operating reactor core in VYNPS. ~~The method of analysis used by the licensee is the same as that accepted by the staff for Change No. 16.~~ The results of the analysis show that operation at 100% of rated power with one inoperable relief valve can continue indefinitely without reducing the normal safety margin to the safety valve nominal setting for the most severe overpressure transient. The licensee's analysis considered the current VYNPS reactor core that will be operating until the Spring 1976 outage. The analysis also considered deletion of

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Under the operating conditions for the current core, we have concluded that full power operation with three relief valves operable can be permitted without a reduction in the safety margin during this entire fuel cycle. Therefore, the previous power restriction to 90 percent of rated power level with three relief valves operable can be deleted.

CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) because the change does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the change does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date:

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F. Anderson:tc  
DRAFT  
5/7/75

We have reviewed the results of the overpressure transient analysis for the current reactor cycle of VYNPS in which <sup>it was shown that</sup> no power reduction ~~is~~ <sup>was</sup> necessary to maintain at least the 25 psi margin to the safety valve nominal settings for the most severe overpressure transient with one relief valve inoperable. The results of the licensee's analysis is acceptable to the staff. The licensee has used the same method for analysis that was acceptable to the staff for Change No. 16 dated March 28, 1974 in which a reduction of power to 90 percent full power was required if one relief valve became inoperable during the previous fuel cycle. The licensee has used the turbine trip without bypass transient with one relief valve inoperable as the most severe overpressure transient as the staff concluded in its Safety Evaluation for Amendment No. 12 dated December 3, 1974. The normal safety margin of 25 psi to the safety valve nominal settings has been maintained in the licensee's analysis.

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-271

VERMONT YANKEE NUCLEAR POWER CORPORATION

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE

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The amendment *increase the allowable power level with three of the four relief valves* permits operation at ~~100% rated power level~~ with *operable from 90 percent to 100 percent of rated power level. The increased power level is due to core* ~~three of the four relief valves operable.~~ *modifications previously approved and made and does not change the safety margin to the safety*

The application for the amendment complies with the standards and *valve setting associated with the most severe overpressure transient.* requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment is not required since the amendment does not involve a significant hazards consideration.

For further details with respect to this action, see (1) the application for amendment dated March 3, 1975, (2) Amendment No. 13 to License No. DPR-28, with Change No. 24, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection

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