DISTRIBUTION:
See previous yellow

JUNE 20 1978

Docket No. 50-271

Yankee Atomic Electric Company
ATTN: Mr. Robert H. Groce
Licensing Engineer
20 Turnpike Road
Westboro, Massachusetts 01581

Gentlemen:

The Commission has issued the enclosed Amendment No. 45 to Facility Operating License No. DPR-28 for the Vermont Yankee Nuclear Power Station. The amendment consists of changes to the Technical Specifications in partial response to your application dated December 29, 1977.

We have responded to item III from your December 29, 1977 application at this time so that you may proceed with preparations for the Summer 1978 refueling outage based on our approval. Items I and II from your December 29, 1977 application will be acted upon later. We have also taken this opportunity to correct the Basis of Technical Specification 6.3 consistent with License Amendment No. 42.

The amendment revises the Technical Specification Surveillance Requirements for the reactor coolant system by incorporating a later edition and Addenda of the ASME Section XI Code.

Copies of our Safety Evaluation and Notice of Issuance are also enclosed.

Sincerely,

Original signed by

Thomas A. Ippolito, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Enclosures:
1. Amendment No. 45
2. Safety Evaluation
3. Notice

CONST/T

cc w/enclosures:
See next page

FOR CONCURRENCES - SEE PREVIOUS YELLOW

OFFICE➤						
SURNAME➤						
DATE➤						

NRC FORM 318 (9-76) NRCM 0240

☆ U.S. GOVERNMENT PRINTING OFFICE: 1976 — 626-624

DISTRIBUTION:
Docket
NRC PDR
Local PDR
ORB#3 Rdg
VStello
BGrimes
SSheppard
VRooney
OELD
OI&E (5)
BJones (4)
BScharf (15)
JMcGough
DEisenhut
ACRS (16)
CMiles
PDR
DRoss
TBAbernathy
JRBuchanan
RDiggs
File
Xtra Copies

Docket No. 50-271

Yankee Atomic Electric Company
ATTN: Mr. Robert H. Groce
Licensing Engineer
20 Turnpike Road
Westboro, Massachusetts 01581

Gentlemen:

The Commission has issued the enclosed Amendment No. to Facility Operating License No. DPR-28 for the Vermont Yankee Nuclear Power Station. The amendment consists of changes to the Technical Specifications in partial response to your application dated December 29, 1977.

We have responded to item III from your December 29, 1977 application at this time so that you may proceed with preparations for the Summer 1978 refueling outage based on our approval. Items I and II from your December 29, 1977 application will be acted upon later. We have also taken this opportunity to correct the Basis of Technical Specification 6.3 consistent with License Amendment No. 42.

The amendment revises the Technical Specification Surveillance Requirements for the reactor coolant system by incorporating a later edition and Addenda of the ASME Section XI Code.

Copies of our Safety Evaluation and Notice of Issuance are also enclosed.

Sincerely,

George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Enclosures:
1. Amendment No.
2. Safety Evaluation
3. Notice

cc w/enclosures:
See next page

OFFICE	ORB#3	ORB#3	OELD	ORB#3		
SURNAME	SSheppard	VRooney:acr		GLear		
DATE	6/9/78	6/9/78	6/16/78	6/20/78		

NRC FORM 318 (9-76) NRCM 0240

☆ U.S. GOVERNMENT PRINTING OFFICE: 1976 — 626-624

cc: Mr. S. D. Karpyak
Vermont Yankee Nuclear Power
Corporation
77 Grove Street
Rutland, Vermont 05701

Mr. Donlad E. Vandenburgh
Vice President
Vermont Yankee Nuclear Power
Corporation
Turnpike Road, Route 9
Westboro, Massachusetts 01581

John A. Ritsher, Esquire
Rope & Gray
225 Franklin Street
Boston, Massachusetts 02110

Laurie Burt
Assistant Attorney, General
Environmental Protection Division
Attorney General's Office
One Ashburton Place, 19th Floor
Boston, Massachusetts 02108

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

Mr. Raymond H. Puffer
Chairman
Board of Selectman
Vermon, Vermont 05354

W. F. Conway, Plant Superintendent
Vermont Yankee Nuclear Power
Corporation
P. O. Box 157
Vernon, Vermont 05354

Brooks Memorial Library
224 Main Street
Brattleboro, Vermont 05301

John R. Stanton, Director
Radiation Control Agency
Hazen Drive
Concord, New Hampshire 03301

John W. Stevens
Conservation Socity of Southern
Vermont
P. O. Box 256
Townshend, Vermont 05353

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

Richard E. Ayres, Esquire
Natural Resources Defense Council
917 15th Street, N. W.
Washington, D. C. 20005

Honorable M. Jerome Diamond
Attorney General
John A. Calhoun
Assistant Attorney General
State of Vermont
109 State Street
Pavilion Office Building
Montpelier, Vermont 05602

Anthony Z. Roisman
Natural Resources Defense Council
917 15th Street, N. W.
Washington, D. C. 20005

cc: Public Service Board
State of Vermont
120 State Street
Montpelier, Vermont 05602

Chief, Energy Systems Analyses
Branch (AW-459)
Office of Radiation Programs
U. S. Environmental Protection
Agency
Room 645, East Tower
401 M Street, S. W.
Washington, D. C. 20460

U. S. Environmental Protection Agency
Region I Office
ATTN: EIS COORDINATOR
JFK Federal Building
Boston, Massachusetts 02203

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. 45
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 December 29, 1977, 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.

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 Appendices A and B, as revised through Amendment No. 45, 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 the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Thomas A. Ippolito, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: June 20, 1978

ATTACHMENT TO LICENSE AMENDMENT NO. 45

FACILITY OPERATING LICENSE NO. DPR-28

DOCKET NO. 50-271

Revise Appendix A Technical Specifications as follows:

Remove Pages	Insert Pages
109	109
116	116
123	123
199	199

Changes on the revised pages are shown by marginal lines.

3.6 LIMITING CONDITION FOR OPERATION

E. Structural Integirty

The structural integrity of the primary systems boundary shall be maintained at the level required by the original acceptance standards throughout the life of the plant.

F. Jet Pumps

1. Whenever the reactor is in the startup/hot standby or run modes, all jet pumps shall be intact and all operating jet pumps shall be operable. If it is determined that a jet pump is inoperable, an orderly shutdown shall be initiated and the reactor shall be in a cold shutdown condition within 24 hours.

2. Flow indication from each of the twenty jet pumps shall be verified prior to initiation of reactor startup from a cold shutdown condition.

3. The indicated core flow is the sum of the flow indication from each of the twenty jet pumps. If flow indication failure occurs for two or more jet pumps, immediate corrective action shall be taken. If flow indication for all but one jet pump cannot be obtained within 12 hours an orderly shutdown shall be initiated and the reactor shall be in a cold shutdown condition within 24 hours.

4.6 SURVEILLANCE REQUIREMENT

E. Structural Integrity

The nondestructive inspections listed in Table 4.6.1 shall be performed per the requirements of the 1974 edition of ASME, Section XI, up to and including the 1975 Summer Addenda except piping examinations (Cat. F & J) shall be per the requirements of ASME Section XI, 1974 edition, 1976 Summer Addenda, Appendix III.

Recording levels shall be at 50% of the reference level.

F. Jet Pumps

1. Whenever there is recirculation flow with the reactor in the startup/hot standby or run modes, jet pump integrity and operability shall be checked daily by verifying that the following two conditions do not occur simultaneously:

   a. The recirculation pump flow differs by more than 10% from the established speed-flow characteristics.

   b. The indicated total core flow is more than 10% greater than the core flow value derived from established power-core flow relationships.

2. Additionally, when operating with one recirculation pump with the equalizer valves closed, the diffuser to lower plenum differential pressure shall be checked daily, and the differential pressure of any jet pump in the idle loop shall not vary by more than 10% from established patterns.

THIS PAGE HAS BEEN DELETED

3.6 & 4 (CONT'D)

The type of inspection planned for each component depends on location, accessiblity, and type of expected defect. Direct visual examination is proposed wherever possible since it is sensitive, fast and reliable. Magnetic particle and liquid penetrant inspections are planned where practical, and where added sensitivity is required. Ultrasonic testing and radiography shall be used where defects can occur on concealed surfaces.

The in-service inspection program presented at this time is based on a thorough evaluation of present technology and state-of-the-art inspection techniques.

F. Jet Pumps

Failure of a jet pump nozzle assembly hold down mechanism, nozzle assembly and/or riser, would increase the cross-sectional flow area for blowdown following the design basis double-ended line break. Therefore, if a failure occurred, repairs must be made.

The detection technique is as follows. With the two recirculation pumps balanced in speed to within ±5%, the flow rates in both recirculation loops will be verified [illegible] monitoring instruments. If they do differ by 10% or more the two flow rate values do not differ by more than 10%, riser and nozzle assembly integrity has been verified. If they do differ by 10% or more the core flow rate measured by the jet pump diffuser differential pressure system must be checked against the core flow rate derived from the measured values of loop flow to core flow correlation. If the difference between measured and derived core flow rate is 10% or more (with the measured value higher) diffuser measurements will be taken to define the location within the vessel of failed jet pump nozzle (or riser) and the plant shut down for repairs. If the potential blowdown flow area is increased, the system resistance to the recirculation pump is also reduced; hence, the affected drive pump will "run out" to a substantially higher flow rate (approximately 115% to 120% for a single nozzle failure). If the two loops are balanced in flow at the same pump speed, the resistance characteristics cannot have changed. Any imbalance between drive loop flow rates would be indicated by the plant process instrumentation. In addition, the affected jet pump would provide a leakage path past the core thus reducing the core flow rate. The reverse flow through the inactive jet pump would still be indicated by a positive differential pressure but the net effect would be a slight decrease (3% to 6%) in the total core flow measure. This decrease, together with the loop flow increase, would result in a leak of correlation between measured and derived core flow rate.

6.3 ACTION TO BE TAKEN IN THE EVENT OF A REPORTABLE OCCURRENCE IN PLANT OPERATION

Applies to administrative action to be followed in the event of a reportable occurrence in Plant operation.

Any reportable occurrence shall be reported to the Manager of Operations and shall be reviewed by the Plant Operations Review Committee. This Committee shall prepare a separate, sequentially numbered, report for each reportable occurrence. Each report shall describe the circumstances leading up to and resulting from the occurrence, the corrective action taken by the shift, an attempt to define the cause of the occurrence, and shall recommend appropriate action to prevent or reduce the probability of a repetition of the occurrence.

Copies of all such reports shall be submitted to the Chairman of the Nuclear Safety Audit and Review Committee for review and to the Manager of Operations for review and approval of any recommendations.

6.4 ACTION TO BE TAKEN IF A SAFETY LIMIT IS EXCEEDED

Applies to administrative action to be followed in the event a safety limit is exceeded.

If a safety limit is exceeded, the reactor shall be shutdown immediately. An immediate report shall be made to the Manager of Operations. A complete analysis of the circumstances leading up to and resulting from the situation together with recommendations by the Plant Operations Review Committee shall also be prepared. This report shall be submitted to the Manager of Operations and the Chairman of the Nuclear Safety Audit and Review Committee.

Reactor operation shall not be resumed until authorized by the U. S. Nuclear REgulatory Commission.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 45 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 December 29, 1977, Vermont Yankee Nuclear Power Corporation (the licensee) proposed an amendment to the Vermont Yankee Nuclear Power Station (the facility) operating license. In this safety evaluation we are considering only Item III of that proposed amendment. Item III proposed that the surveillance requirements for the reactor coolant system be revised to adopt the nondestructive inspection requirements of the 1974 Edition through Summer 1975 Addenda of Section XI of the ASME Boiler and Pressure Vessel Code, except that piping examinations be performed to the requirements of Appendix III of the 1976 Summer Addenda to the 1974 Edition of Section XI with an additional requirement to record indications at 50% of the reference level.

Evaluation

We have reviewed the proposed changes to Vermont Yankee's ultrasonic examination procedure, as well as the present requirements, and find the following:

1. The examination procedures presently being used are in accordance with the requirements of the 1970 ASME Section XI. These requirements were developed for examination of newly fabricated welds and would be more effective in identifying defects such as porosity, slag and lack of fusion, defects related to welding technology rather than service induced flaws. The facility's present need is primarily for identification of service induced flaws.

2. The 1976 Summer Addenda permits the use of 100% of the reference level as the evaluation criterion instead of the 20% evaluation criterion required by 1974 Edition through Summer 1975 Addenda of the ASME Code. Imposing the 20% evaluation criterion on the

licensee for examination of piping welds is judged impractical since numerous reflectors of a spot-type nature would have to be recorded and evaluated. This would necessitate examination personnel to remain in radiation areas for longer periods of time than is commensurate with the increased assurance of the piping integrity.

3. The 100% of reference level evaluation criteria is judged sufficiently reliable for detection of defects warranting evaluation in accordance with the rules of Section XI to justify its use for this inspection period. The evaluation criteria based on 100% of reference level assures that service induced defects equal to the area/amplitude response of a 10% T notch will be evaluated. The licensee has committed to record indications above 50% of the reference level. This establishes a permanent history of these indications which can be examined during the next inspection period to determine if growth has occurred.

4. The NRC is currently reassessing the effectiveness of the Code UT procedures and is intending to issue a regulatory guide to further improve the reliability of the UT technique. By regulation, the licensee is committed to update the Inservice Inspection Program to the latest edition and addenda of the Code as specified in paragraph (b) of 10 CFR 50.55a. This updated program will be submitted by April 30, 1979 at which time the changes will be reevaluated in light of the forthcoming improvements in UT procedures.

Based on the above, we find that the proposed changes are acceptable, and represent an improvement in the Vermont Yankee Inservice Inspection Program.

Environmental Consideration

We have determined that this amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact, and pursuant to 10 CFR §51.5(d)(4) that an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendment 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 amendment 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.

Dated: June 20, 1978

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-271

VERMONT YANKEE NUCLEAR POWER CORPORATION

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE

The Nuclear Regulatory Commission (the Commission) has issued Amendment No. 45 to Facility Operating License No. DPR-28 issued to Vermont Yankee Nuclear Power Corporation (the licensee) which revised Technical Specifications for operation of the Vermont Yankee Nuclear Power Station (the facility), located near Vernon, Vermont. The amendment is effective as of the date of issuance.

The amendment revises the Technical Specification Surveillance Requirements for the reactor coolant system by incorporating a later edition and Addenda of the ASME Section XI Code.

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 was not required since the amendment does not involve a significant hazards consideration.

The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental impact statement, or

negative declaration and environmental impact appraisal need not be prepared in connection with issuance of this amendment.

For further details with respect to this action, see (1) the application dated December 29, 1977, (2) Amendment No. 45 to License No. DPR-28, 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, 224 Main Street, Brattleboro, Vermont. 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 Operating Reactors.

Dated at Bethesda, Maryland, this 20 day of June 1978.

FOR THE NUCLEAR REGULATORY COMMISSION

Thomas A. Ippolito, Chief
Operating Reactors Branch #3
Division of Operating Reactors