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

October 6, 2010

Site Vice President
Entergy Nuclear Operations, Inc.
Vermont Yankee Nuclear Power Station
P.O. Box 250
Governor Hunt Road
Vernon, VT 05354

SUBJECT: VERMONT YANKEE NUCLEAR POWER STATION - ISSUANCE OF AMENDMENT RE: SCRAM DISCHARGE VOLUME VENT AND DRAIN VALVES (TAC NO. ME2855)

Dear Sir or Madam:

The Commission has issued the enclosed Amendment No. 244 to Facility Operating License DPR-28 for the Vermont Yankee Nuclear Power Station, in response to your application dated December 3, 2009.

The proposed amendment would revise Technical Specifications to incorporate Standard Technical Specification 3.1.8 "Scram Discharge Volume (SDV) Vent and Drain Valves" and associated Bases of NUREG-1433, Revision 3, "Standard Technical Specifications General Electric Plants, BWR/4," modified to account for plant specific design details.

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,

James Kim

James Kim, Project Manager
Plant Licensing Branch 1-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-271

Enclosures:
1. Amendment No. 244 to License No. DPR-28
2. Safety Evaluation

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UNITED STATES
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ENTERGY NUCLEAR VERMONT YANKEE, LLC

AND ENTERGY NUCLEAR OPERATIONS, INC.

DOCKET NO. 50-271

VERMONT YANKEE NUCLEAR POWER STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 244
License No. DPR-28

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

   A. The application for amendment filed by Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. (the licensee) dated December 3, 2009, 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 Appendix A, as revised through Amendment No. 244, are hereby incorporated in the license. Entergy Nuclear Operations, Inc. 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 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Nancy L. Salgado, Chief
Plant Licensing Branch 1-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the License and
Technical Specifications

Date of Issuance: October 6, 2010

ATTACHMENT TO LICENSE AMENDMENT NO. 244

FACILITY OPERATING LICENSE NO. DPR-28

DOCKET NO. 50-271

Replace the following page of the Facility Operating License with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove	Insert
3	3

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

Remove	Insert
- i -	- i -
84	84
88	88
-	88a

E. Entergy Nuclear Operations, Inc., pursuant to the Act and 10 CFR Parts .30 and 70, to possess, but not to separate, such byproduct and special nuclear material as may be produced by operation of the facility.

3. This license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations: 10 CFR Part 20. Section 30.34 of 10 CFR Part 30, Section 40.41 of 10 CFR Part 40, Section 50.54 and 50.59 of 10 CFR Part 50, and Section 70.32 of 10 CFR Part 70; and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified below:

A. Maximum Power Level

Entergy Nuclear Operations, Inc. is authorized to operate the facility at reactor core power levels not to exceed 1912 megawatts thermal in accordance with the Technical Specifications (Appendix A) appended hereto.

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 244 are hereby incorporated in the license. Entergy Nuclear Operations, Inc. shall operate the facility in accordance with the Technical Specifications.

C. Reports

Entergy Nuclear Operations, Inc. shall make reports in accordance with the requirements of the Technical Specifications.

D. This paragraph deleted by Amendment No. 226.

E. Environmental Conditions

Pursuant to the Initial Decision of the presiding Atomic Safety and Licensing Board issued February 27, 1973, the following conditions for the protection of the environment are incorporated herein:

TABLE OF CONTENTS

3.3 LIMITING CONDITIONS FOR OPERATION	4.3 SURVEILLANCE REQUIREMENTS
	(c) Out-of-sequence control rods in each distinct RWM group shall be selected and the annunciator of the selection errors verified.
	(d) An out-of-sequence control rod shall be withdrawn no more than three notches and the rod block function verified.
4. Control rod patterns and the sequence of withdrawal or insertion shall be established such that the rod drop accident limit of 280 cal/g is not exceeded.	4. The control rod pattern and sequence of withdrawal or insertion shall be verified to comply with Specification 3.3.B.4.
5. Control rods shall not be withdrawn for startup or refueling unless at least two source range channels have an observed count rate greater than or equal to three counts per second.	5. Prior to control rod withdrawal for startup or during refueling, verification shall be made that at least two source range channels have an observed count rate of at least three counts per second.
6. If the above specifications are not satisfied, an orderly shutdown shall be initiated and the reactor shall be in the HOT SHUTDOWN condition within 12 hours.	6. Deleted
	7. Deleted

3.3 LIMITING CONDITIONS FOR OPERATION	4.3 SURVEILLANCE REQUIREMENTS
E. Reactivity Anomalies The reactivity equivalent of the difference between the actual critical rod configuration and the expected configuration during power operation shall not exceed 1% Δk/k. If this limit is exceeded, the reactor will be shut down until the cause has been determined and corrective actions have been taken if such actions are appropriate.	E. Reactivity Anomalies During the startup test program and startups following refueling outages, the critical rod configurations will be compared to the expected configurations at selected operating conditions. These comparisons will be used as base data for reactivity monitoring during subsequent power operation throughout the fuel cycle. At specific power operating conditions, the critical rod configuration will be compared to the configuration expected based upon appropriately corrected past data. This comparison will be made at least every equivalent full power month.
F. Scram Discharge Volume Vent and Drain Valves 1. Each scram discharge volume (SDV) vent and drain valve shall be OPERABLE when the reactor is in the STARTUP or RUN MODES. ----------NOTES---------- • Separate Condition entry is allowed for each SDV vent and drain line. • An isolated SDV line may be unisolated under administrative control to allow draining and venting of the SDV. ---------- a. If there is one or more SDV vent or drain line with one valve inoperable, then isolate the associated SDV line within 7 days.	F. Scram Discharge Volume Vent and Drain Valves 1. ----------NOTE---------- Not required to be met on vent and drain valves closed during performance of SR 4.3.F.2. ---------- Verify each pneumatically-operated SDV vent and drain valve is open at least once per month. 2. Cycle each SDV vent and drain valve to the fully closed and fully open position in accordance with Specification 4.6.E.2. 3. At least once per operating cycle, verify each pneumatically-operated SDV vent and drain valve: a. Closes in ≤ 30 seconds after receipt of an actual or simulated scram signal and

3.3 LIMITING CONDITIONS FOR OPERATION	4.3 SURVEILLANCE REQUIREMENTS
b. If there is one or more SDV vent or drain line with both valves inoperable, then isolate the associated SDV line within 8 hours.	b. Opens when the actual or simulated scram signal is reset.
c. If Specifications 3.3.F.1.a or 3.3.F.1.b are not met then the reactor shall be in HOT SHUTDOWN within 12 hours.	

UNITED STATES
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 244 TO FACILITY OPERATING LICENSE NO. DPR-28

ENTERGY NUCLEAR VERMONT YANKEE, LLC

AND ENTERGY NUCLEAR OPERATIONS, INC.

VERMONT YANKEE NUCLEAR POWER STATION

DOCKET NO. 50-271

1.0 INTRODUCTION

By letter dated December 3, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML093430286), Entergy Nuclear Operations, Inc. (the licensee) submitted a request to amend the Vermont Yankee Nuclear Power Station (VY) Technical Specifications (TSs). The proposed amendment would revise TSs to incorporate Standard Technical Specification (STS) 3.1.8 "Scram Discharge Volume (SDV) Vent and Drain Valves" and associated Bases of NUREG-1433, Revision 3, "Standard Technical Specifications General Electric Plants, BWR/4," modified to account for plant specific design details.

2.0 REGULATORY EVALUATION

The Nuclear Regulatory Commission (NRC) regulations and review standards such as Appendix A, "General Design Criteria for Nuclear Power Plants," to Title 10 of the *Code of Federal Regulation* (CFR) Part 50, include specific requirements for reactor protection and reactivity control systems. The reactor protection systems for boiling-water reactors (BWRs) use a hydraulic system to insert control rods into the reactor core. During an actuation of the reactor protection system (a scram), water is exhausted from the control rod drive mechanisms to the SDVs. Proper maintenance and operation of the SDVs in terms of instrumentation and limiting water volumes are essential for assuring the reliability of the reactor protection system (see NRC Bulletin 80-17, "Failure of Control Rods to Insert During A Scram at a BWR," related Orders to specific facilities, and information provided in plant final safety analysis reports and TS Bases). The SDV vent and drain valves ensure that accumulated water does not hamper or slow the insertion of control rods. The vent and drain valves isolate during a scram to limit the amount of coolant discharged so that adequate core cooling is maintained and offsite doses remain within regulatory limits.

Specific license requirements for SDV vent and drain valves are currently defined in Surveillance Requirement (SR) 4.3.B.7 and in the VY Inservice Testing Program. The existing SR 4.3.B.7, requires that each SDV vent and drain valve be verified open at least once per month and allows the valves to be closed intermittently for testing under administrative control.

The operability of all SDV vent and drain valves ensures that the SDV vent and drain valves will close during a scram to contain reactor water discharged to the SDV piping. Since the vent and drain lines are provided with a pneumatically-operated vent valve and a back-up check valve, the single failure of one valve in the open position will not impair the isolation function of the system. Additionally, the pneumatically-operated valves are required to open on scram reset and during plant operation to control the amount of water accumulating in the SDV. The NRC staff considers that the information submitted by the licensee in support of the proposed license amendment is consistent with the regulatory requirements.

The VY TS do not currently contain a Limiting Condition for Operation (LCO) related to the SDV vent and drain valves.

The proposed change would revise the TS to include an LCO related to the SDV vent and drain valves, to be more consistent with the safety significance of inoperable valves in SDV lines, and to be more consistent with NUREG-1433, Revision 3.

3.0 TECHNICAL EVALUATION

3.1 Proposed TS Change

The proposed amendment would revise TS 3/4.3.F to incorporate STS 3.1.8 " SDV Vent and Drain Valves" and associated Bases of NUREG-1433, Revision 3, "Standard Technical Specifications General Electric Plants, BWR/4," modified to account for plant specific design details.

The plant specific deviations from the STS are:

1) To specify that each vent line contains only one pneumatically operated vent valve and that only those valves are checked open monthly and subject to closure times. For clarity, SDV was added to the LCO.

2) To use consistent conventions STARTUP, RUN, AND HOT SHUTDOWN in lieu of MODES 1, 2, and 3. In addition, "once per month" and "once per operating cycle" will be used in lieu of "31 days" and "18 months."

3) The closure time of the pneumatically operated valves will be ≤ 30 seconds based on the maximum time allowed in the VY IST Program.

4) Each pneumatically operated vent and drain valve will be cycled to the fully open and fully closed position once a quarter. This test is performed on the check valves during each refueling outage. Both tests are performed in accordance with the VY IST Program.

5) Delete SR 4.3.B.7 and add TS3/4.3.F to the Table of Contents. SR 4.3.B.7 will be captured in new SR 4.3.F.1.

3.2 NRC Staff Evaluation

The single pneumatically-operated vent valve configuration at VY differs from the two automatic vent valve configuration assumed in STS 3.1.8 "SDV Vent and Drain Valves" and associated Bases of NUREG-1433, Revision 3, "Standard Technical Specifications General Electric Plants,

BWR/4." The difference in the vent line configuration is reflected in the TSs by specifying in the SRs that the monthly verification of each SDV vent and drain valve is open and the closure time measurement after receipt of a scram signal and subsequent reopening on, scram reset each operating cycle are only applicable to the pneumatically-operated SDV vent and drain valves. SR 4.3.F.2 will require that the check valves in the vent lines are operability tested by leak testing and draining the SDV during each refueling outage. The check valves provide back up to the pneumatically-operated valve and eliminate the spraying of contaminated water into the heating, ventilating, and air conditioning exhaust plenum upon scram reset which opens the pneumatically-operated vent and drain valves simultaneously.

With one SDV vent or drain valve inoperable in one or more lines, the isolation function would be maintained since the redundant valve in the affected line would perform its safety function of isolating the SDV. There is no current LCO associated with an inoperable valve; the proposed change would create an LCO for "SDV Vent and Drain Valves." The LCO will allow for the isolation of the affected line and continue operation. If the affected line is not isolated within the 7-day time period (or the inoperable valve is not restored), the licensee would then be required to proceed to Hot Shutdown in the next 12 hours. The 7-day Completion Time is acceptable because of the low probability of the concurrent events of a scram within the 7 days of the Completion Time and a failure of the redundant valve(s). Alternately, if the inoperable valve was initially closed, there would be ample time and a warning available to drain the SDV before an automatic scram would occur due to SDV high level.

The proposed change contains a Note allowing the licensee to administratively open a line that is isolated to comply with the actions (to permit draining and venting the SDV). This would allow any accumulated water in the line to be drained, to preclude a reactor scram on SDV high level. A reactor scram is initiated if the SDV water level in the instrument volume exceeds a specified setpoint. The setpoint is chosen so that all control rods are inserted before the SDV has insufficient volume to accept a full scram. Regarding the isolation of the SDV, the remaining operable SDV vent and drain valve(s) would close automatically on a scram signal to isolate the lines. Resetting the scram automatically closes the scram outlet valves, isolating the control rod drive discharge path to the SDV.

3.3 Technical Evaluation Conclusion

The proposed amendment would revise TS 3/4.3.F to incorporate STS 3.1.8 "SDV Vent and Drain Valves" and associated Bases of NUREG-1433, Revision 3, "Standard Technical Specifications General Electric Plants, BWR/4," modified to account for plant specific design details. Based on the low probability of an event occurring during the defined Completion Time associated with inoperable SDV vent and drain valves, the subsequent isolation of the affected lines, and the ability to open and drain the lines before an automatic scram due to SDV high water level, the proposed change maintains the necessary safety features and establishes the necessary surveillances and is, therefore, acceptable to the NRC staff.

The addition of TS 3/4.3.F requires that the licensee revise the discussion in the associated Bases section. Although the licensee's application included possible wording for the revised Bases discussion for TS 3/4.3.F, the licensee will formally address the change to the Bases in accordance with the Bases Control Program.

4.0 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.

5.0 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 SRs. 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 (75 FR 17444). 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.

6.0 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: J. Gall

Date: October 6, 2010

October 6, 2010

Site Vice President
Entergy Nuclear Operations, Inc.
Vermont Yankee Nuclear Power Station
P.O. Box 250
Governor Hunt Road
Vernon, VT 05354

SUBJECT: VERMONT YANKEE NUCLEAR POWER STATION - ISSUANCE OF AMENDMENT RE: SCRAM DISCHARGE VOLUME VENT AND DRAIN VALVES (TAC NO. ME2855)

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Sincerely,

/RA/

James Kim, Project Manager
Plant Licensing Branch 1-1
Division of Operating Reactor Licensing
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