



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

February 23, 2011

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: CONTROL ROD BLOCK ACTUATION LOGIC SYSTEM  
FUNCTIONAL TEST (TAC NO. ME3781)

Dear Sir or Madam:

The Commission has issued the enclosed Amendment No. 246 to Facility Operating License DPR-28 for the Vermont Yankee Nuclear Power Station, in response to your application dated April 13, 2010.

The amendment would modify Technical Specification Section 4.2.E.2 to institute a requirement to perform a Logic System Functional Test of the Control Rod Block actuation instrumentation trip functions once every Operating Cycle.

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,

A handwritten signature in black ink, appearing to read "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. 246 to License No. DPR-28
2. Safety Evaluation

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

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. 246  
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 April 13, 2010, 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. 246, 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: February 23, 2011

ATTACHMENT TO LICENSE AMENDMENT NO. 246

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  
3

Insert  
3

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

Remove  
54

Insert  
54

- 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. 246 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:

### 3.2 LIMITING CONDITIONS FOR OPERATION

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D. Deleted.

#### E. Control Rod Block Actuation

The control rod block instrumentation for each Trip Function in Table 3.2.5 shall be operable in accordance with Table 3.2.5.

### 4.2 SURVEILLANCE REQUIREMENTS

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D. Deleted.

#### E. Control Rod Block Actuation

1. The control rod block instrumentation shall be functionally tested and calibrated as indicated in Table 4.2.5.

When a Rod Block Monitor channel is placed in an inoperable status solely for performance of required surveillances, entry into associated Limiting Conditions for Operation and required Actions may be delayed for up to 6 hours provided the associated Trip Function maintains control rod block initiation capability.

2. Perform a Logic System Functional Test of Control Rod Block Actuation instrumentation Trip Functions once every Operating Cycle.



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WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 246 TO FACILITY OPERATING LICENSE NO. DPR-28

ENERGY NUCLEAR VERMONT YANKEE, LLC  
AND ENERGY NUCLEAR OPERATIONS, INC.  
VERMONT YANKEE NUCLEAR POWER STATION

DOCKET NO. 50-271

1.0 INTRODUCTION

By letter dated April 13, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML101100465), Entergy Nuclear Operations, Inc. (the licensee) submitted a request to amend the Vermont Yankee Nuclear Power Station (VY) Technical Specification (TS). The amendment would institute a requirement to perform a Logic System Functional Test of the Control Rod Block actuation instrumentation trip functions once every Operating Cycle.

It is proposed in the license amendment that the current TS Section 4.2.E be modified as follows:

Perform a Logic System Functional Test of Control Rod Block Actuation instrumentation Trip Functions once every Operating Cycle.

2.0 REGULATORY EVALUATION

Section 182a of the Atomic Energy Act (the "Act") requires applicants for nuclear power plant operating licenses to include TSs as part of the license. The Commission's regulatory requirements related to the content of TSs are set forth in Title 10 of the *Code of Federal Regulations* (10 CFR) 50.36. In particular, 10 CFR 50.36 (c) (3), "Surveillance requirements," states:

Surveillance requirements [SRs] are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met.

The purpose of the proposed addition to the TS to perform a Logic System Functional Test of Control Rod Block Actuation instrumentation Trip Functions (once every Operating Cycle) is to ensure operability of the subject instrumentations, and to provide reasonable assurance that the safety limits are satisfied.

### 3.0 TECHNICAL EVALUATION

In the "Technical Evaluation" section of its April 13, 2010, submittal, the licensee stated that control rods provide the primary means for control of reactivity changes. Control Rod Block (CRB) instrumentation includes channel sensors, logic circuitry, switches, and relays that are designed to backup administrative controls on control rod movement. The TS include limiting condition for operation (LCO) and SRs covering the Rod Block Monitor (RBM) and the Reactor Mode Switch (RMS) shutdown position trip functions. The purpose of the RBM is to limit control rod withdrawal if localized neutron flux exceeds a predetermined setpoint during control rod manipulations. The RBM has two channels, either of which can initiate a CRB when the channel output exceeds the CRB setpoint. With the RMS in the shutdown position, a control rod withdrawal block is applied to all control rods to ensure that the shutdown condition is maintained. This trip function prevents inadvertent criticality as a result of a control rod withdrawal during cold shutdown and hot shutdown or during a refueling outage when the reactor mode switch is required to be in the shutdown position.

Current SR testing of the RBM and RMS shutdown position trip functions is described in TS Table 4.2.5. The RBM trip functions are functionally tested every 3 months and the RMS shutdown position trip function is functionally tested every refueling outage. These SRs test the individual trip functions but do not constitute a Logic System Functional Test (LSFT) as defined in TS section 1.0.H.

The change adds a requirement for performance of an LSFT of the CRB instrumentation once every Operating Cycle. This additional test ensures that the entire logic is tested consistent with TS requirements.

In the submittal, the licensee further stated that VY TS include LCOs and SRs for the CRB actuation instrumentation. TS 3.2.E and Table 3.2.5 provide the LCO requirements and TS 4.2.E and Table 4.2.5 provides the required SRs (functional tests and frequencies). Prior to the implementation of License Amendment No. 236 (Reference (a)) the VY TS included a requirement to perform an LSFT of the CRB actuation trip system logic once every Operating Cycle. During implementation of License Amendment No. 236, the licensee discovered that this requirement was deleted from the TS without adequate justification. This was entered into the Corrective Action Program and controls were put in place to ensure the SR was completed once every Operating Cycle while a TS change was processed to reinstitute the requirement.

The Nuclear Regulatory Commission (NRC) staff reviewed the licensee's submittal and related documentation, including TS and Updated Final Safety Analysis Report. The staff understands that the licensee identified that their functional test did not test the entire channel and that they needed to reinstate the once per operating cycle logic test to ensure the entire logic was tested. This is consistent with other custom TS requirements, and is acceptable.

The NRC staff concludes that the purpose of the addition to the VY TS to perform LSFT of CRB actuation instrumentation trip functions (once every Operating Cycle) is to ensure operability of the subject instrumentations, and to provide reasonable assurance that the safety limits are satisfied. This is consistent with the regulatory requirements, and, therefore, the staff concludes that the license amendment of the VY TS is acceptable.



#### 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 37474). 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: M. Razzaque

Date: February 23, 2011

February 23, 2011

Site Vice President  
Entergy Nuclear Operations, Inc.  
Vermont Yankee Nuclear Power Station  
P.O. Box 250  
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Sincerely,

*/ra/*

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

Docket No. 50-271

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\*See memo dated January 20, 2011

OFFICE	LPL1-1/PM	LPL1-1/LA	SRXB/BC	ITSB/BC	OGC	LPL1-1/BC
NAME	JKim	SLittle	AUises*	RElliot	LSubin	NSalgado
DATE	2/9/11	2/9/11	1/20/11	2/10/11	2/17/11	2/23/11

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