Entergy

Entergy Nuclear Operations, Inc.
Vermont Yankee
320 Governor Hunt Rd
Vernon, VT 05354
Tel 802 257 7711

Robert J. Wanczyk
Licensing Manager

BVY 11-037

April 21, 2011

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: Revision of Technical Specification Bases Pages due to License Amendment 246
Vermont Yankee Nuclear Power Station
Docket No. 50-271
License No. DPR-28

REFERENCE: 1. Letter, USNRC to VYNPS, "Vermont Yankee Nuclear Power Station - Issuance of Amendment RE: Control Rod Block Actuation Logic System Functional Test (TAC No. ME3781)," NVY 11-016, dated February 23, 2011

Dear Sir or Madam:

This letter provides revised Vermont Yankee (VY) Technical Specification (TS) Bases pages. The Vermont Yankee TS Bases were revised to incorporate changes made to the TS for the control rod block actuation surveillance requirements, as approved by Reference 1.

These changes, processed in accordance with the TS Bases Control Program (TS 6.7.E), were determined not to require prior NRC approval. The revised TS Bases pages are provided for your information and for updating and inclusion with your copy of VY TS. No NRC action is required in conjunction with this submittal.

There are no new regulatory commitments being made in this submittal.

Should you have any questions concerning this submittal, please contact me at 802-451-3166.

Sincerely,

Robert J. Wanczyk

[RJW/JMD]

A001
NRR

Attachment: 1. Revised Technical Specification Bases Pages (3 pages)

cc: Mr. William M. Dean
Regional Administrator, Region 1
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406-1415

Mr. James S. Kim, Project Manager
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Mail Stop O8C2A
Washington, DC 20555

USNRC Resident Inspector
Entergy Nuclear Vermont Yankee, LLC
320 Governor Hunt Rd.
Vernon, Vermont 05354

Ms. Elizabeth Miller, Commissioner
VT Department of Public Service
112 State Street – Drawer 20
Montpelier, Vermont 05620-2601

Attachment 1

Vermont Yankee Nuclear Power Station

Revised Technical Specification Bases Pages (3 pages)

BASES: 3.2.E/4.2.E CONTROL ROD BLOCK ACTUATION

ACTIONS (continued)

control rod withdrawal block function. However, since the required actions of Table 3.2.5 ACTION Note 2 are consistent with the normal action of an operable Reactor Mode Switch—Shutdown Position Trip Function (i.e., maintaining all control rods inserted), there is no distinction between having one or two channels inoperable.

In both cases (one or both channels inoperable), suspending all control rod withdrawal and initiating action to fully insert all insertable control rods in core cells containing one or more fuel assemblies will ensure that the core is subcritical with adequate Shutdown Margin ensured by Specification 3.3.A.1. Control rods in core cells containing no fuel assemblies do not affect the reactivity of the core and are therefore not required to be inserted. Action must continue until all insertable control rods in core cells containing one or more fuel assemblies are fully inserted.

SURVEILLANCE REQUIREMENTS

Surveillance Requirement 4.2.E.1

As indicated in Surveillance Requirement 4.2.E.1, control rod block instrumentation shall be functionally tested and calibrated as indicated in Table 4.2.5. Table 4.2.5 identifies, for each Trip Function, the applicable Surveillance Requirements.

Surveillance Requirement 4.2.E.1 also indicates that when an RBM channel is placed in an inoperable status solely for performance of required instrumentation Surveillances, entry into associated LCO and required Actions may be delayed for up to 6 hours provided the associated Trip Function maintains control rod block capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to operable status or the applicable LCO entered and required Actions taken. This allowance is based on the reliability analysis (Ref. 4) assumption of the average time required to perform channel Surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that a control rod block will be initiated when necessary.

Surveillance Requirement 4.2.E.2

The Logic System Functional Test demonstrates the operability of the required initiation logic and simulated automatic operation for a specific channel. The testing required by the Control Block Rod Actuation Technical Specifications overlaps this Surveillance to provide testing of the assumed functions. The frequency of "once every Operating Cycle" is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has demonstrated that these components will usually pass the Surveillance when performed at the specified frequency.

BASES: 3.2.E/4.2.E CONTROL ROD BLOCK ACTUATION

Table 4.2.5, Functional Test

For Trip Functions 1.a, 1.b, and 1.c, a Functional Test is performed on each required channel to ensure that the channel will perform the intended function. The Functional Test of the RBM channels includes the Reactor Manual Control "Select Relay Matrix" System input. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology. The Frequency of "Every 3 Months" is based on the reliability analysis of Reference 5.

For Trip Function 2, a Functional Test is performed to ensure that the entire channel will perform the intended function. The Functional Test for the Reactor Mode Switch-Shutdown Position Trip Function is performed by attempting to withdraw any control rod with the reactor mode switch in the shutdown position and verifying a control rod block occurs. As noted in Table 4.2.5 Footnote (a), the Surveillance must be completed within 1 hour after the reactor mode switch is in the shutdown position, since testing of this interlock with the reactor mode switch in any other position cannot be performed without using jumpers, lifted leads, or movable links. This allows entry into the HOT SHUTDOWN and COLD SHUTDOWN Modes if the "Every Refueling Outage" Frequency is not met. The 1 hour allowance is based on operating experience and in consideration of providing a reasonable time in which to complete the Surveillance Requirement. The Frequency of "Every Refueling Outage" is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has demonstrated that these components will usually pass the Surveillance when performed at the specified Frequency.

Table 4.2.5, Calibration

For Trip Functions 1.a and 1.b, an Instrument Calibration is a complete check of the instrument loop and the sensor. This test verifies that the channel responds to the measured parameter within the necessary range and accuracy. An Instrument Calibration leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology. The specified Instrument Calibration Frequencies are based upon the time interval assumptions for calibration used in the determination of the magnitude of equipment drift in the associated setpoint analyses.

The RBM is automatically bypassed when power is below a specified value or if a peripheral control rod is selected. The power level is determined from the APRM signals input to each RBM channel. The automatic bypass setpoint must be verified periodically to be $\leq$ 30% RATED THERMAL POWER. As a result, the Instrument Calibration of Trip Function 1.a must also include calibration of the RBM Reference Downscale function (i.e., RBM Upscale (Flow Bias) Trip Function is not bypassed when > 30% RATED THERMAL POWER), as noted in Footnote (c). In addition, it must also be verified that the RBM is not bypassed when a control rod that is not a peripheral control rod is selected (only one non-peripheral control rod is required to be verified). If any bypass setpoint is nonconservative, then the affected RBM channel is considered inoperable. Alternatively, the APRM channel can be placed in the conservative condition to enable the RBM. If placed in this condition, the Surveillance Requirement is met and the RBM channel is not considered inoperable.

BASES: 3.2.E/4.2.E CONTROL ROD BLOCK ACTUATION

As noted in Footnote (b), neutron detectors are excluded from the Surveillance because they are passive devices, with minimal drift, and because of the difficulty of simulating a meaningful signal. Changes in neutron detector sensitivity are compensated for by performing the 7 day heat balance calibration and the 2000 MWD/T LPRM calibration against the Traversing Incore Probe System of the Reactor Protection System Technical Specification.

REFERENCES

1. UFSAR, Section 7.5.8.

2. UFSAR, Section 7.7.4.3.2.

3. UFSAR, Section 14.5.3.1.

4. GENE-770-06-1-A, "Addendum to Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications," December 1992.

5. NEDC-30851-P-A, Supplement 1, "Technical Specification Improvement Analysis for BWR Control Rod Block Instrumentation," October 1988.