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December 18, 2008
BVY 08-087

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

References: (a) Letter, VYNPS to USNRC, "Technical Specification Proposed Change No. 273 Instrumentation Technical Specifications," BVY 08-001, dated February 12, 2008

Subject: **Vermont Yankee Nuclear Power Station**
License No. DPR-28 (Docket No. 50-271)
Technical Specifications Proposed Change No. 273, Supplement 6
Response to Request for Additional Information

Dear Sir or Madam,

In Reference (a), Entergy Nuclear Operations Inc. (ENO) submitted a proposed change to the instrumentation sections of the Vermont Yankee Operating License Technical Specifications.

Attachment 1 to this submittal provides ENO's response to questions provided by NRC Staff and discussed with the NRC on a telecom held on December 9, 2008. Attachment 2 provides sample set-point calculation.

This supplement to the original license amendment request does not change the scope or conclusions in the original application, nor does it change ENO's determination of no significant hazards consideration.

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

Should you have any questions or require additional information concerning this submittal, please contact Mr. David J. Mannai at (802) 451-3304.

I declare under penalty of perjury, that the foregoing is true and accurate. Executed on December 18, 2008.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael J. Colomb", written over a horizontal line.

Michael J. Colomb
Site Vice President
Vermont Yankee Nuclear Power Station

Attachments (2)
cc: (next page)

A001
NRR

cc: Mr. Samuel J. Collins (w/o Attachments)
Regional Administrator, Region 1
U.S. Nuclear Regulatory Commission
475 Allendale Road
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Mr. James S. Kim, Project Manager
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
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USNRC Resident Inspector (w/o Attachment 2)
Entergy Nuclear Vermont Yankee, LLC
320 Governor Hunt Road
Vernon, Vermont 05354

Mr. David O'Brien, Commissioner (w/o Attachment 2)
VT Department of Public Service
112 State Street – Drawer 20
Montpelier, Vermont 05620-2601

Docket 50-271
BVY 08-087

Attachment 1

Technical Specification Proposed Change No. 273, Supplement 6

Vermont Yankee Nuclear Power Station

Response to Request for Additional Information

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RAI No. 1

Setpoint Calculation Methodology: Provide documentation (including sample calculations) of the methodology used for establishing the limiting setpoint (or NSP) and the limiting acceptable values for the As-Found and As-Left setpoints as measured in periodic surveillance testing as described below. Indicate the related Analytical Limits and other limiting design values (and the sources of these values) for each setpoint.

Response to RAI No. 1

Changes to the following setpoints are proposed in this submittal:

- 1) Table 3.2.1, Emergency Core Cooling System Instrumentation, Trip Setpoint 3.b., High Pressure Coolant Injection (HPCI) System, Low Condensate Storage Tank Water Level
- 2) Table 3.2.2, Primary Containment Isolation Instrumentation, Trip Setpoint 1.b., Main Steam Line Isolation, High Main Steam Line Area Temperature
- 3) Table 3.2.2, Primary Containment Isolation Instrumentation, Trip Setpoint 3.a., HPCI Isolation, High Steam Line Space Temperature
- 4) Table 3.2.2, Primary Containment Isolation Instrumentation, Trip Setpoint 3.d., HPCI Isolation, High Main Steam Line Tunnel Temperature
- 5) Table 3.2.2, Primary Containment Isolation Instrumentation, Trip Setpoint 4.a., Reactor Core Isolation Cooling (RCIC) System Isolation, High Main Steam Line Tunnel Temperature
- 6) Table 3.2.2, Primary Containment Isolation Instrumentation, Trip Setpoint 4.c., RCIC System Isolation, High Steam Line Space Temperature
- 7) Table 3.2.9, RCIC System Instrumentation, Trip Setpoint 2., Low Condensate Storage Tank Water Level

The analytical limits associated with these setpoints are identified within the referenced tables.

Vermont Yankee (VY) setpoint methodology documents, and a sample setpoint Calculation, were previously provided to the staff as part of License Amendment No. 219 (TAC No. MB8070). VY letter BVY 03-064 included the following three documents.

- 1) Instrument Uncertainty and Set-point Design Guide
- 2) Instrument Drift Analysis Design Guide
- 3) VYC-0467, Reactor System High Pressure Trip Loop Accuracy Review

Attachment 2 includes a sample calculation for RCIC System high steam line space temperature isolation setpoint.

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RAI No. 2

Safety Limit (SL)-Related Determination: Provide a statement as to whether or not the setpoint is a limiting safety system setting (LSSS) for a variable on which a safety limit (SL) has been placed as discussed in 10 CFR 50.36(d)(1)(ii)(A). Such setpoints are described as "SL-Related" in the discussions that follow. In accordance with 10 CFR 50.36(d)(1)(ii)(A), the following guidance is provided for identifying a list of functions to be included in the subset of LSSS specified for variables on which SLs have been placed as defined in Standard Technical Specifications (STS) Sections 2.1.1, Reactor Core SLs and 2.1.2, Reactor Coolant System Pressure SLs. This subset includes automatic protective devices in TS for specified variables on which SLs have been placed that: (1) initiate a reactor trip; or (2) actuate safety systems. As such these variables provide protection against violating reactor core safety limits, or reactor coolant system pressure boundary safety limits.

Examples of instrument functions that might have LSSS included in this subset in accordance with the plant-specific licensing basis, are pressurizer pressure reactor trip (pressurized water reactors), rod block monitor withdrawal blocks (boiling water reactors), feedwater and main turbine high water level trip (boiling water reactors), and end of cycle recirculation pump trip (boiling water reactors). For each setpoint, or related group of setpoints, that you determined not to be SL-Related, explain the basis for this determination.

Response to RAI No. 2

VY has custom Technical Specifications (TS). The VY Limited Safety System Setting (LSSS) set-points are identified in Sections 1.2 and 2.2 of the VY TS. These are the setpoints associated with maintaining the integrity of the fuel cladding and the reactor coolant system. They include setpoints associated with the safety limits identified in Sections 1.1 and 2.1 of the TS. Other setpoints identified in the VY TS are not considered LSSS set-points.

None of the setpoints proposed to be modified by this submittal are LSSS setpoints.

RAI No. 3

For the Setpoint that is determined to be SL-Related: The NRC letter to the Nuclear Energy Institute SMTF dated September 7, 2005 (ADAMS Accession No. ML052500004), describes Setpoint-Related TS (SRTS) that are acceptable to the NRC for instrument settings associated with SL-Related setpoints. Specifically: Part "A" of the Enclosure to the letter provides LCO notes to be added to the TS, and Part "B" includes a check list of the information to be provided in the TS Bases related to the proposed TS changes.

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- a. **Describe whether and how you plan to implement the SRTS suggested in the September 7, 2005 letter. If you do not plan to adopt the suggested SRTS, then explain how you will ensure compliance with 10 CFR 50.36 by addressing items 3b and 3c, below.**
- b. **As-Found Setpoint Evaluation: Describe how surveillance test results and associated TS limits are used to establish operability of the safety system. Show that this evaluation is consistent with the assumptions and results of the setpoint calculation methodology. Discuss the plant corrective action processes (including plant procedures) for restoring channels to operable status when channels are determined to be “inoperable” or “operable but degraded.” If the criteria for determining operability of the instrument being tested are located in a document other than the TS (e.g., plant test procedure) explain how the requirements of 10 CFR 50.36 are met.**
- c. **As-Left Setpoint Control: Describe the controls employed to ensure that the instrument setpoint is, upon completion of surveillance testing, consistent with the assumptions of the associated analyses. If the controls are located in a document other than the TS (e.g., plant test procedure) explain how the requirements of 10 CFR 50.36 are met.**

Response to RAI No. 3

Entergy is not proposing any changes to safety limit related setpoints.

RAI No. 4

For the Setpoint that is not determined to be SL-Related: Describe the measures to be taken to ensure that the associated instrument channel is capable of performing its specified safety functions in accordance with applicable design requirements and associated analyses. Include in your discussion information on the controls you employ to ensure that the As-Left trip setting after completion of periodic surveillance is consistent with your setpoint methodology. Also, discuss the plant corrective action processes (including plant procedures) for restoring channels to operable status when channels are determined to be “inoperable” or “operable but degraded.” If the controls are located in a document other than the TS (e.g., plant test procedure), describe how it is ensured that the controls will be implemented.

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Response to RAI No. 4

The VY TS currently list a Limit Value for setpoints, with the exception of the APRM Flow Biased Scram Setpoint. The APRM Flow Biased Scram Setpoint is the only setpoint that utilizes an Allowable Value (AV) in the VY TS. This setpoint was calculated using ISA Method 1. All other VY setpoints were calculated using ISA method 3. As-found/as-left values are documented during the calibration process. Plant as-found/as-left data was used to analyze drift as part of the VY Setpoint Program.

VY performs setpoint calculations for LSSS and non-LSSS setpoints. The instrument uncertainty calculations are performed in accordance with the VY design guide, which has been reviewed by the NRC during implementation of ARTS/MELLLA. The design guide is based on ISA Standard 67.04, "Setpoints for Nuclear Safety-Related Instrumentation" and EPRI Technical Report TR-103335, "Guidelines for Instrument Calibration Extension/Reduction Programs." The instrument uncertainty calculations determine acceptable as-found/as-left tolerances. These tolerances are used in the surveillance/calibration procedures.

The surveillance/calibration procedures list the as-left and as-found calibration tolerances. If the as-found value is found within the as-left tolerance, the technician documents that no action was required and returns the equipment to operations. If any as-found value is found outside of the as-left tolerance, the technician circles the value and documents the condition in the discrepancy section of the data sheet. The technician performs general conditions inspections and calibrates the equipment. As-found values outside of the as-left are evaluated by the technician's supervisor. Assuming the technician does not identify any degradation during the calibration and if the measured as-found values are within acceptable as-found tolerances, then the equipment is considered operable. If the as-found values are outside of the acceptable as-found tolerances, it is entered into the Corrective Action Program.

Typically, prior surveillances/calibrations are reviewed for adverse trends. Based on this review, an increase in surveillance/calibration frequency or an additional channel check may be considered. Typically, if there are no adverse trends in the calibration history and the equipment is operating normally during calibration, it is considered operational after the calibration is complete and the equipment is returned to operators. If there is evidence of adverse trends or if the supervisor feels that operability is challenged, the equipment is replaced.

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RAI No. 5

Post Accident Monitoring Instrumentation: The Safety Assessment of Changes CTS: 3.2.G/4.2.G - Post Accident Monitoring Instrumentation lists Primary Containment Isolation Valve Position as a Regulatory Guide (RG) 1.97 Category 1 variable. Per the May 7, 1988 letter from T.E. Murley (NRC) to R. F. Janecek (BWROG) RG 1.97 Category 1 variables should be included in Post Accident Monitoring Instrumentation TS. However, Primary Containment Isolation Valve Position is not included in the markup of Tables 3.2.6/4.2.6, the retyped Tables 3.2.6/4.2.6, or the proposed Bases 3.2.G/4.2.G. Tables 3.2.6/4.2.6 and Bases 3.2.G/4.2.G should be revised to include Primary Containment Isolation Valve Position or a justification should be provided for why Primary Containment Isolation Valve Position should not be included in the Post Accident Monitoring Instrumentation TS.

Response to RAI No. 5

A review of the licensing basis for TS Tables 3.2.6 and 4.2.6 was performed. The Tables were included in the original VY TS (circa 1972) and were titled "Surveillance Instrumentation." The Tables have been changed due to various License Amendments, however, at no time were they proposed or required to be upgraded to include all RG 1.97 Category 1 variables. Additionally, the Tables were not proposed to be expanded to include all RG Category 1 variables as part of this proposed change.