

February 16, 2005

Mr. Michael Kansler
President
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION - INTERMEDIATE RANGE
MONITOR SURVEILLANCE TEST FREQUENCIES, VERMONT YANKEE
NUCLEAR POWER STATION (TAC NO. MB9091)

Dear Mr. Kansler:

By letter dated May 21, 2003, as supplemented on July 23, 2003, Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc., submitted a proposed license amendment to the Nuclear Regulatory Commission (NRC) for the Vermont Yankee Nuclear Power Station. The proposed amendment, "Technical Specification Proposed Change No. 260, Intermediate Range Monitor Surveillance Test Frequencies" would extend the functional test frequency of the reactor protection system (RPS) intermediate range monitor (IRM) functions from weekly to 31 days and would add more restrictive requirements for the RPS IRM - High Flux function.

The NRC staff is reviewing your submittal and has determined that additional information is required to complete the review. The specific information requested is addressed in the enclosure.

We request that the additional information be provided by March 25, 2005. The response timeframe was discussed with Ms. Ronda Daflucas of your staff on February 15, 2005. If circumstances result in the need to revise your response date, or if you have any questions, please contact me at (301) 415-1420.

Sincerely,

/RA/

Richard B. Ennis, Senior Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-271

Enclosure: Request for Additional Information

cc w/encl: See next page

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Vermont Yankee Nuclear Power Station

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Vermont Yankee Nuclear Power Station

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REQUEST FOR ADDITIONAL INFORMATION
REGARDING PROPOSED LICENSE AMENDMENT
INTERMEDIATE RANGE MONITOR SURVEILLANCE TEST FREQUENCIES
VERMONT YANKEE NUCLEAR POWER STATION
DOCKET NO. 50-271

By letter dated May 21, 2003, as supplemented on July 23, 2003, Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. (Entergy or the licensee) submitted a proposed license amendment to the Nuclear Regulatory Commission (NRC) for the Vermont Yankee Nuclear Power Station (VYNPS). The proposed amendment, "Technical Specification Proposed Change No. 260, Intermediate Range Monitor Surveillance Test Frequencies," would extend the functional test frequency of the reactor protection system (RPS) intermediate range monitor (IRM) functions from weekly to 31 days and would add more restrictive requirements for the RPS IRM - High Flux function.

The NRC staff is reviewing your submittal and has determined that additional information is required to complete the review as follows:

1. The staff still needs information to make a determination that, in case of the unavailability of the IRMs (e.g., common cause failure), the plant could be safely operated. This discussion should provide enough information for the staff to make a determination that the proposed change did not result in an unforeseen hazard or substantially greater potential for a known hazard event to occur. Provide justification that extending the surveillance test interval (STI) for the IRMs won't significantly increase the failure rate of the IRMs.
2. In order for the NRC staff to determine the acceptability of the request based on a deterministic argument, the licensee should clearly state how the defense-in-depth philosophy will be maintained. In case of the unavailability of the IRM, which system will be used as a backup to the IRM so that the plant will not inadvertently go critical? Discuss whether this system is tested in accordance with the Technical Specification (TS) requirements. For example, if the credit is being taken for the rod block monitor or rod worth minimizer, then discuss how these systems meet the requirements of the IRM and are tested in accordance with the TSs. Also, if the credit is being taken for operator action, specify which diverse indication is used for prompting the operator action and state whether the operator action is taken within the required time assumed in the safety analysis.
3. Have there been any refueling/startup events (initiating events) that have required the IRM function? Also, describe any failure of the IRMs noted such that IRM function was lost.
4. Has the IRM equipment been replaced with updated equipment such that the drift information is not available for the new IRM equipment? If this is the case, justify the longer STI for the newer IRM equipment.

Enclosure

5. Attachment 1 to the May 21, 2003, application indicates that data was excluded for obvious equipment replacement activities, illegible data, and multiple tests performed on the same day. Have any IRM surveillance tests been subsequently found to be performed incorrectly? If so, how were they discovered?
6. Attachment 1, Page 5 of the application states that it was not necessary to change the existing safe shutdown analysis to account for IRM failure or drift. Provide a similar discussion related to shutdown/refueling for the initiating events the IRMs are intended to mitigate.

Attachment 1, Page 1 of the application states that RPS IRM functions were not explicitly modeled in NEDC-30851P-A, because the events for which these functions provide protection are so mild that safety limits would not be violated. Yet the submittal states that NEDC-30851P-A did not propose to extend the surveillance interval for the IRMs. The NRC staff notes that NEDC-30851P-A, Supplement 1 did provide an analysis to increase the STI for the rod block monitor, and that both NEDC-30851P-A and supplement 1 were based on "at power" operation.

7. During a conference call on December 13, 2004, the licensee confirmed that the IRM instrument channel functional test will be performed before shutdown, before startup and anytime during shutdown/refueling if it exceed 31 days. The wording in the TS change is confusing and could be interpreted differently. Clarify the wording to state the intent.
8. The following comments apply to Appendix D to the VYNPS Setpoint Program Manual , "Instrument Uncertainty and Setpoint Design Guide," which was submitted to the NRC via Entergy letter dated July 21, 2003, and which is being used for the IRM drift evaluation:
 - a. Page 11, Summary: "... testing data should be evaluated statistically to determine randomness." Please identify which test or tests will be used for this purpose.
 - b. Page 17, middle paragraph: "...95% tolerance interval..." Whereas confidence intervals have one specification (such as 95 or 95%), tolerance intervals have two components (such as 95/75). This paragraph does not make this distinction. Please correct this paragraph and all other references to tolerance intervals or limits.
 - c. Page 19, second equation: The expression MTE has a subscript "i" which is unexplained.
 - d. Page 22, middle equation: Explain where the constant 2.214 comes from.
 - e. Page 23, third line from the bottom: "Where drift is determined to have a linear relationship with time..." Please explain how linearity is to be tested.
 - f. Page 35, second line from the top: If linearity does not apply, is the square root transformation the only obvious alternative?
 - g. Page 35, Section 3.8.1, fifth line: "As explained in Section," The Section number is missing.
 - h. Attachment G, Page 4, Section 2: Example is missing.