

April 1, 2005

MEMORANDUM TO: Darrell J. Roberts, Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

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

SUBJECT: VERMONT YANKEE NUCLEAR POWER STATION, DRAFT
REQUEST FOR ADDITIONAL INFORMATION (TAC NO. MC5488)

The attached draft request for information (RAI) was transmitted on March 31, 2005, to Ms. Ronda Daflucas of Entergy (the licensee). This information was transmitted to facilitate a upcoming conference call in order to clarify the licensee's amendment request for Vermont Yankee Nuclear Power Station dated December 15, 2004. The proposed amendment would revise the limiting conditions for operation in Technical Specification (TS) 3.3 and the surveillance requirements in TS 4.3 associated with the control rod system. Specifically, the proposed changes would revise the TSs associated with: (1) control rod operability; (2) control rod scram time testing; and (3) control rod accumulator operability.

This memorandum and the attachment do not convey or represent an NRC staff position regarding the licensee's request.

Docket No. 50-271

Attachment: Draft RAI

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DRAFT REQUEST FOR ADDITIONAL INFORMATION
REGARDING PROPOSED LICENSE AMENDMENT
CONTROL ROD OPERABILITY, SCRAM TIME TESTING AND
CONTROL ROD ACCUMULATORS
VERMONT YANKEE NUCLEAR POWER STATION
DOCKET NO. 50-271

By letter dated December 15, 2004, Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. (Entergy or the licensee) submitted an amendment request for Vermont Yankee Nuclear Power Station (VYNPS). The proposed amendment would revise the limiting conditions for operation (LCOs) in Technical Specification (TS) 3.3 and the surveillance requirements (SRs) in TS 4.3 associated with the control rod system. Specifically, the proposed changes would revise the TSs associated with: (1) control rod operability; (2) control rod scram time testing; and (3) control rod accumulator operability.

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the information the licensee provided that supports the proposed amendment and would like to discuss the following issues to clarify the submittal:

1. You propose to remove TS 4.3.B.1 which states that rod coupling should be verified by exercising the rods and observing “discernable response of the nuclear instrumentation.” On page 3 of Enclosure 1 of your application dated December 15, 2004, your justification for removing this TS is that it does not provide a “positive check that the control rod is uncoupled since if sufficient friction is not present an uncoupled rod would follow the drive being withdrawn.” You also state that “if sufficient friction is present to uncouple the control rod from its drive, the control rod would not follow the drive being withdrawn.” Explain how an uncoupled control rod that has sufficient friction so that it would not withdraw with the drive would be detected.
2. Provide your analytical scram reactivity curve. Provide details from your calculations you performed to determine that the scram times in your Proposed Table 4.3.C-1 meet the assumptions in your analytical scram reactivity curve. Include calculation details for instances where you would have the maximum number of “slow” rods (6, or 2 occupying adjacent locations.)
3. TS 4.3.C.1 currently states in part “...all control rods shall be subject to scram-time measurements from the fully withdrawn position ... The scram times for single rod scram testing shall be measured without reliance on the control rod drive pumps.” You did not provide the basis for removing this language. Please provide this.
4. TS 3.3.C.3 currently states that “the reactor shall be shut down immediately upon determination that average scram time is deficient.” You propose to change this requirement to state that “the reactor shall be placed in the HOT SHUTDOWN condition within 12 hours.” You did not provide a basis addressing the safety implications for shutting down the reactor within 12 hours verses immediately. Please address this.

5. You propose to change TS 3.3.D to allow up to two (2) inoperable control rod scram accumulators as long as the associated control rod scram time was declared to be "slow." Provide details demonstrating that the scram time for control rods with inoperable scram accumulators would not exceed the requirements for declaring the control rod inoperable (i.e., control rod scram time from fully withdrawn to notch position 04 is not greater than 7.0 seconds.)
6. Your current TS 3.3.D does not allow more than one inoperable control rod scram accumulator in a nine-rod square array. Your current TS bases for TS 3.3.D state that "requiring no more than one inoperable accumulator in any nine-rod (3x3) square array is based on a series of XY PDQ-4 quarter core calculations of a cold, clean core." Your proposed changes to TS 3.3.D allow up to 2 control rod accumulators to be inoperable under certain circumstances and does not have restrictions on the locations of the inoperable accumulators. Explain why it is no longer necessary to restrict the geometry of the inoperable accumulators.
7. LCO 3.3.A.2 "Reactivity Margin - Inoperable Control Rods," which reads "The control rod directional control valves for inoperable control rods shall be disarmed electrically..." You propose to remove the word "electrically" from this language. You state on page 13 of Enclosure 1 of your application dated December 15, 2004, that "the proposed change would allow for the disarming to be either hydraulically or electrically." In your TS Bases for TS 3.3.A.2 it states "If a rod is disarmed electrically, its position shall be consistent with the shutdown reactivity limitation stated in Specification 3.3.A.1." Does disarming the control valves for inoperable control rods hydraulically also give a position consistent with the shutdown reactivity limitation stated in Specification 3.3.A.1? Why are you not modifying your Bases to include a statement about disarming the control valves for inoperable control rods hydraulically?
8. With respect to LCO 3.3.B.1, why is the word "electrically" not being removed?
9. You propose to remove the text in SR 4.3.B.1(b) which requires recording the results of each coupling check/test. In your justification as to why this is acceptable, you discuss other regulations which require retention of records. Provide specific details describing where the results of your tests will be recorded and how this is controlled. Provide the regulatory basis that requires the results of your tests to be recorded, not just retained. Provide the basis for why this was originally included in your TS and how that is not being invalidated by removing this requirement.