

June 9, 2006

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

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION REGARDING TECHNICAL SPECIFICATION CHANGES TO REVISE CONTROL ROD OPERABILITY, SCRAM TIME AND CONTROL ROD ACCUMULATOR SURVEILLANCE TESTING (TAC NO. MC5488)

Dear Mr. Kansler:

By letter dated December 15, 2004, as supplemented by letter on December 12, 2005, Entergy Nuclear Operations, Inc. submitted an amendment request to revise the Vermont Yankee Nuclear Power Station control rod operability, scram time and control rod accumulator technical specification surveillance testing requirements.

The Nuclear Regulatory Commission staff has been reviewing the submittal and has determined that additional information is needed to complete its review. The specific questions are found in the enclosed request for additional information (RAI). A response to these RAIs is requested to be provided within 30 days.

Sincerely,

/RA/

James J. Shea, Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-271

Enclosure: As stated

cc w/encl: See next page

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SECOND REQUEST FOR ADDITIONAL INFORMATION
REGARDING TECHNICAL SPECIFICATION CHANGES
TO REVISE CONTROL ROD OPERABILITY, SCRAM TIME AND CONTROL ROD
ACCUMULATOR SURVEILLANCE TESTING
ENTERGY NUCLEAR OPERATIONS, INC.
VERMONT YANKEE NUCLEAR POWER STATION
DOCKET NO. 50-271

By letter dated December 15, 2004, as supplemented by letter on December 12, 2005, Entergy Nuclear Operations, Inc. submitted an amendment request to revise the Vermont Yankee Nuclear Power Station (VY) control rod operability, scram time and control rod accumulator technical specification surveillance testing requirements.

The Nuclear Regulatory Commission staff has been reviewing the submittal and has determined that additional information is needed to complete its review.

- 1) Based upon your response to RAI #2 (Reference 2), the staff infers that you are operating under Option B¹ but that if during scram time testing any control rods are declared “slow” or if the cycle specific analytical scram reactivity curve requires faster scram times than what’s in TS 3.3.C you will impose the use of higher MCPR limits (Option A)². Please verify if this is correct. Otherwise, please address the following:

Previously your TS required that the average of all control rods scrammed in accordance with your analytical scram reactivity curve. In your proposed amendment, you propose an allowance for up to 6 “slow” control rods whose scram times would exceed the requirements of the curve. In your justification for this change you state that the analytical scram reactivity curve will be met if some rods scram slower than the limit as long as some rods scram faster than the limit. The allowable scram times in TS 3.3.C (Table 4.3.C-1) are the same as your analytical scram reactivity curve (provided in response to RAI #2 in Reference 2) with the exception of the scram time until control rods reach notch position 46 which is 0.017 seconds faster than the analytical scram reactivity curve. However the overall scram time (3.419 seconds) is the same as the

¹In Section 4.3.1.2.6 “MCPR Uncertainty Considerations” GESTAR-II gives 2 options for adjusting the Δ CPR value for all rapid pressurization AOs such that a 95/95 Δ CPR/ICPR licensing basis is calculated. In regard to Option A, GESTAR-II states: “Plants that do not demonstrate compliance with the statistically evaluated scram times must operate using a higher [MCPR] limit that does not take credit for these scram times.” In regard to Option B, GESTAR-II states: “the generic basis utilized adjustment factors that are dependent on plant and event type” and “since both the GENESIS and GEMINI adjustment factors take credit for conservatism in the scram speed assumed for the transient analysis, each plant operating under Option B must demonstrate that their actual scram speeds are within the distribution assumed in the derivation of the adjustment factors.”

²In response to RAI #2 you state that “as specified in [GESTAR-II], an evaluation is performed for any “slow rod” (i.e., control rod that does not meet the TS scram time). For rods that do not meet the TS scram times, an adjustment (τ) to the Operating Limit Minimum Critical Power Ratio (MCPR) (Safety Limit + AOO Δ CPR from analysis) is determined as specified in the VY cycle specific Core Operating Limits Report.”

analytical scram reactivity curve. In your justification (Page 5 of Enclosure 3 of Reference 1) you state that “to account for single failures and “slow” scrambling control rods, the scram times specified in Table 4.3.C-1 are faster than those assumed in the design basis analysis” and that “the scram times have a margin that allows up to approximately 7% of the control rods to have scram times exceeding the specified limits.”

- a. Please explain how control rods scrambling 0.017 seconds faster until notch 46 can account for the scram reactivity worth of up to six control rods which can be allowed to scram up to 3.581 seconds slower at a fully withdrawn position?
- b. You state in response to RAI #2 that the scram reactivity curve used in the AOO analysis is cycle specific. What happens if during a subsequent cycle the scram reactivity curve requires scram times faster than those specified in the TS? How is the NRC staff assured that Entergy will amend the VY TS to coincide with the scram reactivity curve used in each cycle specific AOO analysis?

References

1. Letter from J.K. Thayer (Entergy/Vermont Yankee) to the U.S. Nuclear Regulatory Commission “Technical Specification Proposed Change No. 266; Revision to Control Rod Operability, Scram Time Testing and Control Rod Accumulators.” December 15, 2004
2. Letter from J.K. Thayer (Entergy/Vermont Yankee) to the U.S. Nuclear Regulatory Commission “Technical Specification Proposed Change No. 266; Revision to Control Rod Operability, Scram Time Testing and Control Rod Accumulators - Response to Request for Additional Information.” December 12, 2005

Vermont Yankee Nuclear Power Station

cc:

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