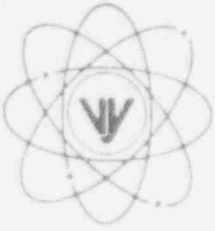


VERMONT YANKEE NUCLEAR POWER CORPORATION



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REPLY TO
ENGINEERING OFFICE

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April 7, 1993
BVY-93-38

United States Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

References:

- a. License No. DPR-28 (Docket No. 50-271)
- b. NRC Memorandum from T.E. Murley, Director, Office of Nuclear Reactor Regulation, "Temporary Waivers of Compliance", dated February 22, 1990
- c. Federal Register Notice 58FR14308, dated March 17, 1993

Subject: Request for Enforcement Discretion Regarding Technical Specification LCO Requirements Pertaining to Scram Times

Dear Sir:

The purpose of this letter is to request, as discussed in our telecon of April 6, 1993 and in accordance with the guidance provided in References (b) and (c), enforcement discretion regarding Technical Specification Limiting Conditions for Operation (LCO) requirement for Scram Times.

1. Requirements for which Enforcement Discretion is Requested

Vermont Yankee Technical Specification 3.3.C.1.1 and 3.3.C.1.2 provides maximum time durations for rod insertion at various notch positions. This submittal requests enforcement discretion from the scram times stated for notch position 46. In place of the present notch position 46 scram time, Vermont Yankee is requesting a limit of 0.425 seconds for the core average scram time and 0.450 for the 2x2 average scram time, to be utilized for the remainder of the current operating cycle (Cycle 16).

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2. Discussion of Circumstances

On April 6, 1993, during a scheduled power reduction and rod pattern exchange, Vermont Yankee performed single rod scram timing as required by Technical Specification 4.3.C.2. During this surveillance 50% of the control rods were scrammed and the results evaluated. Results indicated that the notch position 46 insertion times were not met. All other notch position scram times were found to be acceptable. Given the information provided below Vermont Yankee does not believe that the issue is safety-significant and requests enforcement discretion. The Technical Specification requires a shutdown if the average scram time is not met.

3. Compensatory Actions

Compensatory actions have since been rendered unnecessary as a result of a plant shutdown due to an unrelated event following the telecon.

Further investigations are in progress on the apparent increase in scram times for notch position 46. Vermont Yankee will provide the NRC with the results of these investigations prior to startup.

4. Safety Significance and Potential Consequences

The control rod drive scram system is designed to bring (i.e. scram) the reactor subcritical at a rate fast enough to prevent fuel damage. The limiting transient dependent on scram for mitigation is a turbine stop valve (trip) closure with failure of the turbine bypass system (TTWOBP). The control rod system response times specified in Technical Specification 3.3.C.1.1 and 3.3.C.1.2 are assumed in the analysis of this transient. The results of this analysis contributes to the derivation of the Minimum Critical Power Ratio (MCPR) operating limits (OLMCPR) specified in the Core Operating Limits Report (COLR).

The average time limits of 3.3.C.1.1 were implemented via Amendment 70 based on scram test data collected during startup testing and the first few cycles of VY operation with 8X8 fuel. The times were chosen, using statistical analysis, to ensure the test data was enveloped. The 3.3.C.1.2 average times were based on a generic set of data General Electric had at the time Vermont Yankee was first licensed. Scram times for notch position 46 are the same for both 3.3.C.1.1 and 3.3.C.1.2.

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In addition to determining the overall average scram insertion time, Technical Specifications require measurement of the three fastest of the four rods in a 2x2 array. This limit was designed to detect local deviations in scram performance. The safety analysis assumes the overall average scram time while implicitly assuming, for local regions, small deviations from the average.

Vermont Yankee has assessed the impact of slower scram test times for notch position 46 on the plant safety analysis by performing a reanalysis of the TTWOBP event. The cases included notch position 46 insertion times of 0.4 and 0.5 seconds. These times were chosen to provide an upper bound to test times and allow examination of the sensitivity of the notch position 46 scram times on the analysis.

The results of the cases analyzed to evaluate the sensitivity on the notch position 46 scram time are presented in Table 1. Table 1 reports the delta-CPR for the TTWOBP event for notch position 46 scram times of 0.4 seconds, 0.5 seconds, and 0.358 seconds (current Technical Specification value).

Table 1 - Results of Scram Time Sensitivity Study
Change in Critical Power Ratio for Cycle 16 TTWOBP

T.S. Scram for Notches Other Than 46	T.S. Notch 46 Position (.358s) Delta CPR	0.4s Notch 46 Position Delta CPR	0.5s Notch 46 Position Delta CPR
3.3.C.1.1	0.13	0.14	0.14
3.3.C.1.2	0.16	0.16	0.18

The results indicate that variations in scram performance for notch position 46 are insignificant up to 0.5 seconds. The largest change in delta-CPR is 0.02. This small increase in delta-CPR is bounded by current limits and other conservatisms; e.g. the analysis was performed at a higher power level (104.5%) than required (102%).

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Vermont Yankee's assessment of the measured scram times concludes that the Cycle 16 OLMCPRs contained in Table 2.2-1 of the COLR are not impacted provided notch position 46 scram times do not exceed 0.5 seconds. It should be noted that the cycle dependent OLMCPRs are determined through analysis of a spectrum of potentially limiting events including the TTWOBP. The event analysis resulting in the largest delta-CPR for the assumed scram speed, cycle exposure, or rod block monitor setting sets the OLMCPR. The TTWOBP sets the OLMCPR for the 3.3.C.1.2 scram speed at end of cycle exposure and a 40% rod block monitor setting. All other Cycle 16 OLMCPRs were set by the control rod withdrawal error (RWE) event analysis. The RWE is not sensitive to scram performance. Therefore, additional margin exists in the OLMCPRs for the transients dependent on scram for mitigation.

5. Duration of Request

Vermont Yankee is requesting relief from the notch position 46 scram times stated in the VY Technical Specifications until the next scheduled refueling outage (currently planned to begin in late August, 1993). A proposed Technical Specification change to permanently change the notch position 46 scram times will be submitted by June 1, 1993.

6. Significant Hazards Consideration

Vermont Yankee has concluded that this request does not involve a significant hazards consideration in that:

- (i) This request has been analyzed with respect to previously analyzed accidents. The request does not involve a significant increase in the probability or consequences of an accident previously evaluated in the Vermont Yankee FSAR. The effect of Cycle 16 operation and the consequences of accidents, as shown above, has not increased and continues to be well within the acceptance criteria. Therefore, this request will not involve any significant increase in the probability or consequences of an accident.
- (ii) The request does not physically change the facility or the manner in which it is operated. Therefore, this request will not create the possibility of a new or different kind of accident from those previously evaluated.
- (iii) The request increases the existing Limiting Condition for Operation (LCO). However, the analysis described above shows the MCPR limits are the same as presently defined in the COLR assuming this change in LCO. Therefore, the acceptance criteria was met by the events analyzed. This request for enforcement discretion will not involve a significant reduction in the margin of safety.

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The Vermont Yankee Plant Operations Review Committee (PORC) has reviewed this request.

7. Environmental Consequences

No environmental consequences will result from approval of this request.

8. Notification of State

Vermont Yankee has notified the State of Vermont of the content of this request and will forward a copy of this document to the Vermont State Nuclear Engineer.

We trust that the information provided herein adequately supports our request. However, should you have any questions or should you need to discuss this matter further, please contact this office.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION



D. A. Reid
Vice President, Operations

cc: USNRC Region I Administrator
USNRC Resident Inspector - VYNPS
USNRC Project Manager - VYNPS
USNRC Director, NRR
USNRC Director, Reactor Projects, NRR
USNRC Director, Office of Enforcement
USNRC Technical Assistant, Reactor Projects, NRR
VT Department of Public Service