SNUPPS
Standardized Nuclear Unit
Power Plant System

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Executive Director

April 13, 1984

SLNRC 84- 66 FILE: 0541
SUBJ: Final Response to NRC Generic Letter No. 83-10 c

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Docket Nos: STN 50-482 and STN 50-483

References:
1. SLNRC 83-0021, dated 4/22/83, Response to NRC Generic Letter No. 83-10 c
2. OG-110, dated 12/1/83, Evaluation of Alternate RCP Trip Criteria
3. OG-117, dated 3/9/84, Justification of Manual RCP Trip for Small Break LOCA Events

Dear Mr. Denton:

Reference 1 presented the SNUPPS Utilities plan for demonstrating compliance with the criteria for resolution of TMI Action Plan Requirements Item II.K.3.5, "Automatic Trip of Reactor Coolant Pumps", which were established in letters from Mr. Darrel G. Eisenhut of the Nuclear Regulatory Commission to all Applicants and Licensees with Westinghouse designed Nuclear Steam Supply Systems (83-10 c and d) dated February 8, 1983. The submittals which fulfill the commitments in the SNUPPS plan have been transmitted to you in References 2 and 3.

Section I of the attachment to NRC letter 83-10 c and d discusses "Pump Operation Criteria Which Can Result in RCP Trip During Transients and Accidents". Subsection 1 of Section I presents guidelines for establishing setpoints for RCP Trip. The Westinghouse Owners Group (WOG) response to this section of NRC Letters 83-10 c and d is contained in Revision 1 to the WOG Emergency Response Guidelines, which has been issued to member utilities. These guidelines will be incorporated into the plant specific operating procedures for Callaway Plant Unit No. 1 and Wolf Creek Generating Station No. 1.

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The RCP trip criterion being adopted in the Callaway Plant Unit No. 1 and Wolf Creek Generating Station No. 1 plant specific procedures not only assures RCP trip for all losses of primary coolant for which trip is considered necessary but also permits RCP operation to continue during most non-LOCA accidents, including steam generator tube rupture events up to the design basis double-ended tube rupture. The generic applicability of the RCP trip criterion selected has been documented by the Westinghouse Owners Group in Reference 2, which has been submitted to the NRC for review.

The Westinghouse Owners Group has also submitted to the NRC, via Reference 3, the justification of manual RCP trip for small break LOCA events. As stated above, these submittals completed the WOG documentation comprising a generic reply to NRC Generic Letters 83-10 c and d.

Subsection 2 of Section I of the attachment to NRC Letters 83-10 c and d provides guidance for justification of manual RCP trip. Subsection 2a requires that compliance with 10CFR50.46 be demonstrated in an Appendix K small break LOCA analysis given that the RCPs are tripped two minutes after the onset of reactor conditions corresponding to the RCP trip setpoint. The Westinghouse Owners Group has generically verified, in Reference 3, that predicted LOCA transients, presuming the two minute delayed RCP trip, are nearly identical to those presented in Safety Analysis Reports utilizing the WFLASH Evaluation model. Thus, the Final Safety Analysis Report for SNUPPS plants demonstrates its compliance with the Subsection 2a guidelines.

The WOG has also performed most probable, best estimate, WFLASH analyses to demonstrate, generically, compliance with the guidelines presented in Subsection 2b of Section I of the attachment to NRC Generic Letters 83-10 c and d. These analyses identify that the minimum time available for operator action for the complete range of LOCA break sizes exceeds the value contained in N660; they show that reactor coolant pumps may be tripped at any time during a LOCA event without resulting in excessive clad temperatures. The applicability information presented in the generic report affirms the applicability of this best estimate analyses to the SNUPPS plants. Therefore, in combination with the Subsection 2a justification cited above, the best estimate analyses justify that manual RCP trip is acceptable for the SNUPPS plants when RCP trip setpoints consistent with Revision 1 to the Emergency Response Guidelines are in use. Furthermore, the generic report demonstrates that no additional contingency emergency procedures are required to address the scenarios which may follow a missed RCP trip setpoint. Based on the results of the RCP trip criterion study of Reference 2, RCS pressure has been chosen as the trip parameter for the SNUPPS plants. The degree of redundancy and the design features of the wide range RCS pressure instrumentation (consistent with the function, location, and environmental conditions) has been reviewed and availability is adequately assured for accident mitigation.

Operator training programs will employ lesson plans consistent with the results of the Westinghouse Owners Group evaluations described in Reference 2 so that operator actions regarding RCP operation in conjunction with other accident mitigating systems will support plant safety consistent with the SNUPPS Final Safety Analysis Reports.

In summary, the generic information presented by the Westinghouse Owners Group in References 2 and 3 along with the SNUPPS Utilities plan of Reference 1 provides the response to NRC Generic Letters 83-10 c and d for the SNUPPS Utilities. The implementation of Revision 1 to the Emergency Response Guidelines in the plant-specific procedures with an appropriate RCP trip setpoint specified will resolve all issues associated with automatic tripping of the reactor coolant pumps.

Very truly yours,

Nicholas A. Petrick

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