

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

June 26, 1984

Director of Nuclear Reactor Regulation
Attention: Ms. E. Adensam, Chief
Licensing Branch No. 4
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Ms. Adensam:

In the Matter of) Docket Nos. 50-327
Tennessee Valley Authority) 50-328

Enclosed for our Sequoyah Nuclear Plant is the final response to the February 8, 1983 letter from D. G. Eisenhower to All Licensees with Westinghouse Designed Nuclear Steam Supply Systems (Generic Letter 83-10d) regarding the resolution of TMI Action Item II.K.3.5, automatic trip of reactor coolant pumps. Previous submittals were made to the NRC by L. M. Mills' April 20, 1983 and January 6, 1984 letters to you. This submittal provides the justification for utilization of manual reactor coolant pump trip.

If you have any questions concerning this matter, please get in touch with Jerry Wills at FTS 858-2683.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

D S Kammer

D. S. Kammer
Nuclear Engineer

Sworn to and subscribed before me
this 26th day of June 1984

Paulette T. White
Notary Public
My Commission Expires 9-5-84

Enclosure

cc: U.S. Nuclear Regulatory Commission
Region II
Attn: Mr. James P. O'Reilly Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

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ENCLOSURE

SEQUOYAH NUCLEAR PLANT (SQN) UNITS 1 AND 2
FINAL RESPONSE FOR TMI ACTION ITEM II.K.3.5

Previous letters from L. M. Mills to E. Adensam dated April 20, 1983, and January 6, 1984, presented the plan for demonstrating compliance with the criteria for resolution of TMI action plan requirements in item II.K.3.5, established in NRC Generic Letter 83-10d dated February 8, 1983, from Darrel G. Eisenhut (NRC) to All Licensees with Westinghouse Electric Corporation (W) Designed Nuclear Steam Supply Systems. The submittals which fulfill the established requirements have been transmitted to you by Westinghouse Owners' Group (WOG) letters OG-117 dated March 12, 1984, and OG-110 dated December 1, 1983.

Section I of the attachment to NRC letter 83-10d discusses "pump operation criteria which can result in reactor coolant pump (RCP) trip during transients and accidents." Subsection 1 of section I presents guidelines for establishing setpoints for RCP trip. The WOG response to this section of NRC letter 83-10d is contained in revision 1 to the WOG emergency response guidelines, which has been issued to member utilities. TVA's plans and schedule for implementing revision 1 WOG emergency response guidelines at SQN are provided in our April 15, 1983 letter from L. M. Mills to NRC regarding supplement 1 to NUREG-0737, Requirements For Emergency Response Capability (Generic Letter 82-33).

The RCP trip criterion being adopted in the SQN plant-specific procedure not only ensures 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 WOG report entitled, "Evaluation of Alternate RCP Trip Criteria," which has been submitted to NRC for review in letter OG-110.

The WOG has also submitted to NRC, in the letter OG-117, the report entitled, "Justification of Manual RCP Trip for Small Break LOCA Events." As stated, these submittals completed the WOG documentation comprising a generic reply to NRC Generic Letter 83-10d.

Subsection 2 of section I of the attachment to NRC letter 83-10d provides guidance for justification of manual RCP trip. Subsection 2a requires that compliance with 10 CFR 50.46 be demonstrated in an Appendix K small break LOCA analysis provided that the RCPs are tripped two minutes after the onset of reactor conditions corresponding to the RCP trip setpoint. The WOG has generically verified, in the OG-117 submittal, that predicted LOCA transients, presuming a 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 SQN 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 Letter 83-10d. These analyses identify that the minimum time available for operator action for the complete range of LOCA break sizes exceeds the value contained in American National Standards Institute (ANSI) draft standard N660. They show that reactor coolant pumps may be tripped at any time during a LOCA event without resulting in excessive clad temperatures. The information presented in the generic report affirms the applicability of this best estimate analyses to SQN; therefore, in combination with the subsection 2a justification cited, the best estimate analyses justify the acceptability of manual RCP trip for SQN when RCP trip setpoints are consistent with revision 1 in the emergency response guidelines. 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. We have previously provided in a letter from L. M. Mills to NRC dated April 20, 1983, responses to subsections 3a and 3c of section I of the attachment to NRC Generic Letter 83-10d.

In summary, the generic information presented by the WOG in the reports entitled, "Evaluation of Alternate RCP Trip Criteria" and "Justification of Manual RCP Trip for Small Break LOCA Events" provides the response to NRC Generic Letter 83-10d for SQN. The implementation of revision 1 to the emergency response guidelines in the plant-specific procedures with an appropriate RCP trip setpoint specified resolves all issues associated with automatic tripping of the reactor coolant pumps.