Tennessee Valley Authority, Post Office Box 2000, Soddy-Daisy, Tennessee 37379

November 8, 1994

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Gentlemen:

In the Matter of) Docket No. 50-328
Tennessee Valley Authority)

SEQUOYAH NUCLEAR PLANT (SQN) - REQUEST FOR DISCRETIONARY ENFORCEMENT FOR UNIT 2 TECHNICAL SPECIFICATION (TS) 3.7.1.2, ACTION a, FOR THE TERRY TURBINE AUXILIARY (AFW) FEEDWATER PUMP

This letter serves to document the basis for TVA's verbal request for discretionary enforcement for Unit 2 TS 3.7.1.2, Action a, for the terry turbine AFW pump.

At the end of extensive Mode 3 (hot standby) testing during final confirmatory testing of the terry turbine AFW pump, an oil leak was discovered on the inboard bearing. As a result, the 72-hour allowed outage time provided by TS 3.7.1.2, Action a, was anticipated being exceeded. In order to allow adequate time to complete the troubleshooting repair and operability testing of the terry turbine AFW pump, 72 hours has been requested, in addition to the 72 hours provided by TS 3.7.1.2. Without the additional time, Unit 2 would have begun a unit shutdown at 1852 Eastern standard time on November 7, 1994. Based on the decay heat load currently experienced in the Unit 2 core following the Cycle 6 refueling outage, the safety consequences of any extended outage time is insignificant. This request has been PORC (Plant Operations Review Committee) approved.

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The basis for the request for discretionary enforcement is included in the enclosure. Please direct questions concerning this issue to J. D. Smith at (615) 843-6672.

Sincerely,

R. H. Shell

R. H. Shell
Manager
SQN Site Licensing

Enclosure
cc (Enclosure):
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ENCLOSURE

Request for Discretionary Enforcement for Unit 1
Technical Specification (TS) 3.7.1.2, Action a, for
the Terry Turbine Auxiliary Feedwater (AFW) Pump

Background

Unit 2 entered Mode 3 on November 3, 1994, at 1852 Eastern standard time (EST). Prior to that time, the terry turbine AFW pump had been tested to the extent possible. At approximately 1800 EST on November 4 adequate steam conditions existed to start the required confirmatory testing for the terry turbine pump. SQN entered TS Limiting Condition for Operation 3.7.1.2, Action a, at 1852 EST on November 4 in accordance with the bases to TS 3.0.4.

Manual handwheels were added to the terry turbine AFW pump LCVs as part of the station blackout (SBO) implementation. Adjustments to the LCVs impacted terry turbine AFW pump testing by approximately one-half day. Terry turbine AFW pump instrumentation calibration problems also contributed to this delay.

Following resolution of the above problems, final LCV postmodification testing was completed late on November 6. During this testing, an oil leak associated with the inboard bearing was identified, which required repair to consider the terry turbine AFW pump operable. The repair and subsequent testing is estimated to be complete at 1900 EST on November 9.

TS Compliance

TS 3.7.1.2, Action a, allows one AFW pump to be inoperable for up to 72 hours before proceeding to hot shutdown (Mode 4). The 72-hour period expired at 1852 EST on November 7. Repairs and postmaintenance testing are estimated to be completed at approximately 1900 EST on November 9. To allow for adequate time to return the terry turbine AFW pump to operable status, 72 hours are requested in addition to the 72 hours provided by TS 3.7.1.2, to prevent the plant from transients associated with changing from Mode 3 to Mode 4 and to provide for adequate test conditions.

Safety Consequences

The basis for having the terry turbine AFW pump is to provide an additional source of AFW independent from the two motor-driven AFW pumps (MDAFWP) available. The AFW system is provided to ensure that no substantial overpressurization of the reactor coolant system (RCS) shall occur and that liquid in the RCS shall be sufficient to cover the reactor core at all times. This is handled by removing the core decay heat via the steam generators (S/Gs).

Since Unit 2 has been in a refueling outage, the core decay heat at this point in time is at 1.26 megawatt thermal (MWT). This decay heat value represents approximately 0.04 percent of the plant thermal rating. The decay heat values utilized in the Final Safety Analysis Report Chapter 15 analyses are based on the ANSI/ANS-5.1-1979 normalized decay heat curves (based on an infinite reactor operating time). This value is 246.62 MWT, or 7.1 percent of the plant thermal rating. Therefore, the amount of AFW necessary to remove decay heat is reduced by a large margin during Mode 3 following a refueling outage. Based on conversations with Westinghouse Electric Corporation safety analysis personnel, existing S/G inventory in the intact S/Gs is adequate to maintain the RCS at or below normal operating temperature/normal operating pressure for the limiting accident (main feedwater line break [MFLB]) in Mode 3 for the first ten minutes of the accident. After ten minutes the analysis assumes that operators isolate the faulted S/G and subsequently only 20 gallons per minute of AFW flow is necessary to remove decay heat (this is a conservative estimate). This is well within the capability of one MDAFWP. Therefore, since the most limiting failure is loss of one MDAFWP, two operable MDAFWP, in accordance with T.S. 3.7.1.2, are sufficient to mitigate the MFLB accident in Mode 3 with core decay heat level below 2 MWT.

The SBO analyses would not be affected by this extension of the TS action statement. Sufficient decay heat removal would be available during the four-hour SBO period by the existing inventory in the S/Gs. It is estimated that the S/Gs would not boil dry for approximately 100 hours based on 1.26 MWT.

In conclusion, the extension of the action statement for T.S. 3.7.1.2 will not decrease the margin of safety in relation to any parameters evaluated in the existing safety analyses for this plant. Furthermore, all assumptions in this evaluation have been that the terry turbine AFW pump is unavailable for accident mitigation.

As a compensatory action, SQN is precluding activities that could impact redundant and support equipment to the AFW system. These actions include prevention of diesel generator, MDAFW pump and switchyard maintenance activities.

The additional outage time to T.S. 3.7.1.2 has been determined to be of minimal safety consequences. In addition, the terry turbine AFW pump requires adequate steam conditions to test and operate the pump. In Mode 4, adequate steam conditions do not exist to allow for troubleshooting of the pump. Further, the impact of the transient of shutting down to Mode 4 and then returning to Mode 3 is thought to be unwarranted given the safety consequences in the current plant configuration.

Accordingly, the discretionary enforcement will not result in a significant increase in the probability or consequences of a previously evaluated accident, will not create the possibility of a new accident, and will not result in a significant reduction in the margin of safety. Also, the action does not involve an unreviewed environmental question because it does not increase any adverse environmental impacts, change effluents or power levels, or result in unreviewed environmental matters.