



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF SPECIAL PROJECTS

SUPPORTING AMENDMENT NO. 84 TO FACILITY OPERATING LICENSE NO. DPR-77

AND AMENDMENT NO. 75 TO FACILITY OPERATING LICENSE NO. DPR-79

TENNESSEE VALLEY AUTHORITY

SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-327 AND 50-328

1.0 INTRODUCTION

By letter dated February 27, 1987, the Tennessee Valley Authority (TVA) proposed changes to the Sequoyah Units 1 and 2 Technical Specifications (TS). The changes would revise Specification 3/4.4.1.2, Reactor Coolant System, Hot Standby. The changes are to increase the number of reactor coolant system loops required to be in operation during Mode 3, Hot Standby, to two loops. The TS limiting condition for operation, action statement and surveillance requirement are being revised. The Bases for the Specification 3/4.4.1.2 are also being changed.

2.0 BACKGROUND

The Westinghouse Safety Review Committee determined in June 1984 that a potential unreviewed safety question existed due to an inconsistency in assumptions between the accident analysis in the Final Safety Analysis Report (FSAR) and the TS. The issue concerns the number of operating reactor coolant pumps when the plant is between residual heat removal (RHR) operation and hot zero power. This stage of operation is known as Mode 3 in the TS and the Westinghouse Standard Technical Specifications (WSTS).

The FSAR analysis of the rod bank withdrawal from subcritical event assumed that all four reactor coolant pumps were operating at hot zero power. The Westinghouse reanalysis of the event showed that two reactor coolant pumps in operation are adequate to meet reactor coolant system (RCS) design limits. Open reactor trip system breakers preclude rod bank withdrawal. Therefore, the proposed changes to TS 3/4.4.1.2 require two reactor coolant loops to be in operation during Mode 3 when the trip system breakers are closed and operation of one reactor coolant loop with the trip system breakers open.

3.0 EVALUATION

TVA did not include the Westinghouse reanalysis in its submittal. The staff has, however, confirmed that methods approved by the NRC were conservatively used in the reanalysis, that the results are compatible with those found for similar plants and that the proposed changes bring the TS into full

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conformance with Rev. 5a of the Standard Technical Specification (STS) for Westinghouse PWRs. As the proposed changes were submitted prior to the release of Rev. 5 to the STS, there are differences in the Bases. TVA may choose to update the Bases to agree with the STS, but the differences are not relevant to this SER. The proposed revision to the bases for TS 3/4.4.1.2 is correct and is acceptable.

The staff finds that with the change, the minimum Departure from Nucleate Boiling Ratio (DNBR) may be expected to remain above the limiting value at all times during the postulated uncontrolled bank withdrawal transient, even if a failure reducing the flow in one of the two reactor coolant loops is assumed. As may be noted from the "Action" statements, the Mode 3 rod withdrawal event is very slow. With only one Reactor Coolant Pump operational, the operator has an hour to open the breakers or 72 hours to restore the required loops to operable status.

The staff concludes that TVA's proposed changes to TS 3/4.4.1.2 for Unit 1 and for Unit 2 eliminate the postulated unresolved safety question by requiring that a minimum of two reactor coolant loops be in operation during Mode 3 when there is a possibility for an uncontrolled bank withdrawal event.

No other postulated events were found to be adversely affected by this change. TVA stated that administrative controls implemented August 10, 1984, required two reactor coolant loops to be in operation or one reactor coolant loop if the control rods are on the bottom and the control rod drive system is tagged to prevent rod withdrawal. The TS change goes a step further, replacing the tag with the requirement that the reactor trip system breakers be open during single loop operation.

4.0 ENVIRONMENTAL CONSIDERATION

These amendments involve a change to a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes to the surveillance requirements. The staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that these amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement nor environmental assessment need be prepared in connection with the issuance of these amendments.

5.0 CONCLUSION

We have concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of these amendments will not be inimical to the common defense and security nor to the health and safety of the public.

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Dated: September 22, 1988

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Sequoyah Nuclear Plant

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