



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

SAFETY EVALUATION BY THE OFFICE OF SPECIAL PROJECTS

SUPPORTING AMENDMENT NO. 85 TO FACILITY OPERATING LICENSE NO. DPP-77

AND AMENDMENT NO. 76 TO FACILITY OPERATING LICENSE NO. DPP-79

TENNESSEE VALLEY AUTHORITY

SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-327 AND 50-328

1.0 INTRODUCTION

By letter dated May 22, 1987, the Tennessee Valley Authority (TVA) proposed changes to the Sequoyah Units 1 and 2 Technical Specifications (TS). This is TS change 87-18. These changes would revise the reactor trip limits for reactor coolant pump (RCP) undervoltage in Table 2.2-1, Reactor Trip System Instrumentation Trip Setpoints, of the TS. The minimum reactor trip setpoint would be increased for each bus from 4830 volts to 5022 volts. The minimum allowable values would be decreased for each bus from 4761 to 4739 volts.

The reactor trip setpoint limits specified in Table 2.2-1 are the values at which the reactor trips are set for each functional unit. One functional unit is the reactor coolant pump undervoltage. The trip setpoints have been selected to ensure that the reactor core and reactor coolant system are prevented from exceeding their safety limits during normal operation and design basis anticipated operational occurrences and to assist the Engineered Safety Features Actuation System in mitigating the consequences of accidents. Operation with a trip set less conservative than its trip setpoint but within its specified allowable value is acceptable on the basis that the difference between each trip setpoint and the allowable value is equal to or less than the drift allowance assumed for each trip in the safety analyses.

2.0 EVALUATION

The proposed change brings the TS Table 2.2-1 for RCP undervoltage-reactor trip into conformance with current channel accuracy calculations. The calculations were revised to specifically address measurement and test equipment inaccuracies and to correct the rack temperature effects. Changes are proposed in functional unit 15 of Table 2.2-1, increasing the minimum trip setpoint to 5022 volts-each bus from 4830 volts-each bus and the minimum allowable value to 4739 volts-each bus from 4761 volts-each bus.

There are three reactor coolant flow related reactor trips to prevent low coolant flow at power: reactor coolant flow-low (90% of loop design flow), underfrequency-reactor coolant pumps (56.0 Hz-each bus) and undervoltage-reactor coolant pumps (proposed 5022 volts-each bus from nominal 6900 volts-each bus).

The power level, number of reactor coolant pumps in operation and time delays all enter into these reactor protection considerations, but generally the staff considers flow-low and underfrequency as principal protective features and the undervoltage as an anticipatory feature. The RCP undervoltage reactor trip has been removed from some Westinghouse plants to reduce unnecessary reactor trips.

The staff has reviewed the TVA's proposal and setpoint methodology calculation package and determined that the calculations used essentially the same setpoint methodology as that used for V. C. Summer, which had been previously reviewed and approved by the NRC in NUREG-0717, Supplement 4.

The staff concludes that the proposed TS change 87-18 is acceptable on the basis that it is conservative and that the overall channel statistical allowance and safety margins were calculated using methodology which had previously been reviewed and approved by the staff. The changes add to the consistency of the TS and postulated events are not expected to be adversely affected by this change.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves 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. The staff has determined that the amendment involves 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 this amendment involves no significant hazards consideration and there has been public comment on such finding. Accordingly, the amendment meets 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 the amendment.

4.0 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 the amendment will not be inimical to the common defense and security nor to the health and safety of the public.

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Sequoyah Nuclear Plant

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