UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 218 TO FACILITY OPERATING LICENSE NO. DPR-77

AND AMENDMENT NO. 208 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 application dated December 8, 1995, the Tennessee Valley Authority (the licensee) proposed an amendment to the Technical Specifications (TS) for Sequoyah Nuclear Plant (SQN) Units 1 and 2. The requested changes would decrease the frequency specified in surveillance requirements (SRs) 4.6.2.1.1.d and 4.6.2.1.2.b for conducting air or smoke tests of the containment spray system headers and Residual Heat Removal System headers, respectively, from every 5 years to every 10 years. The tests are conducted to verify that each spray nozzle is unobstructed.

Guidance for the proposed changes was provided in Generic Letter 93-05, "Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation."

2.0 EVALUATION

The Containment Spray (CS) System contains two redundant spray headers containing 312 nozzles per header. It is designed to prevent containment pressure from exceeding its maximum design pressure during a large break loss of coolant accident by spraying borated water through the spray headers located at the top of the containment building. The cooler spray water condenses the steam in the containment atmosphere. If additional cooling is needed, two separate spray headers, containing 147 nozzles per header, supplied by the Residual Heat Removal (RHR) System, can be aligned manually to spray the containment atmosphere.

To ensure that these nozzles are not obstructed, the licensee injects hot air into each header at 5-year intervals and uses an infrared camera to detect flow from each nozzle. Test personnel manipulate the camera from the top of the polar crane, approximately 100 feet from the reactor cavity floor (which is a potential personnel safety hazard).

In December 1992, the NRC issued NUREG-1366, "Improvements to Technical Specifications Surveillance Requirements." It indicated that operating history was reviewed to determine the success of the surveillance tests

ENCLOSURE 3

performed at various pressurized water reactors. Of the many tests reviewed, only three indicated nozzle flow problems. These problems were construction related and not due to header degradation. The conclusion drawn from the evaluation was that the corrosion of stainless steel piping is negligible during the extended surveillance interval and recommended that the interval be extended to 10 years. In addition, GL 93-05 also recommends that the surveillance interval be extended to 10 years, and points out that seven nozzles were found to be clogged at a nuclear power plant. The cause of this problem was the coating material that was applied to the carbon steel CS system piping. Since the CS and RHR piping at SQN are stainless steel, these problems are not a concern at SQN.

Following initial startup, the licensee performed flow tests of the CS and RHR nozzles three times on Unit 1 and twice on Unit 2. No plugging or flow degradation problems were detected. These tests demonstrated that obstructions did not exist in any of the spray nozzles.

Based on this analysis, the licensee's proposal to change the CS and RHR spray system nozzle testing frequency from 5 years to 10 years will continue to provide adequate assurance that the nozzles will be operable to mitigate the consequences of a design basis accident at SQN. Therefore, the staff finds the proposed change acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Tennessee State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes surveillance requirements. The NRC 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 the amendment involves no significant hazards consideration, and there has been no public comment on such finding (61 FR 182). 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 or environmental assessment need be prepared in connection with the issuance of the amendment.

5.0 CONCLUSION

The Commission has 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, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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