



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 187 TO FACILITY OPERATING LICENSE NO. DPR-77
AND AMENDMENT NO. 179 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 May 18, 1994, the Tennessee Valley Authority (the licensee) proposed amendments to the Technical Specifications (TS) for Sequoyah Nuclear Plant (SQN) Units 1 and 2. A letter dated September 9, 1994, revised the original application and provided clarifying information, but did not change the initial proposed no significant hazards consideration determination.

The requested changes would revise the Specification 3.7.7 Action Statement to address inoperability of the control room emergency ventilation system (CREVS) due to the actions taken when a tornado warning is declared. The new action statement would be applicable to Modes 1, 2, 3, and 4. It would state: "With both CREVS inoperable due to actions taken as a result of a tornado warning, restore at least one train to operable status within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours."

Another proposed change would remove the statement that the provisions of Specification 3.0.3 are not applicable in Mode 6.

Administrative changes would also be incorporated into Specifications 3.7.7 and 4.7.7 to incorporate the abbreviation "CREVS" in place of "control room emergency ventilation system."

2.0 EVALUATION

TS 3.7.7, Control Room Emergency Ventilation System, requires that two independent control room emergency ventilation systems be operable in all Modes. However, when a tornado warning is issued by the National Weather Service for the SQN area, the tornado dampers are shut to protect important equipment. The inability of CREVS to maintain a positive pressure in the control room, renders both trains of CREVS inoperable. Therefore, TS would

ENCLOSURE 3

require entry into Specification 3.0.3, resulting in a possible shutdown of both units.

The proposed TS change would allow both CREVS to be inoperable due to the actions taken as a result of a tornado warning for 8 hours, at which time at least one CREVS must be restored to the operable condition or the plant shutdown. This time period is based on past experience where CREVS was restored within 3 to 4 hours, plus a 4 hour allowance should the warning last longer than 4 hours. The licensee has provided assurance that the main control room operators can maintain adequate awareness of the need to enter and exit from the tornado warning conditions through the TVA Power Service Control Center and through a National Oceanic and Atmospheric Administration weather radio in the main control room. Thus, the CREVS will be returned to operable status promptly.

CREVS is designed to ensure that the control room environment will support the activities required of control room personnel during accident conditions and the subsequent recovery period. When activated, CREVS provides a mixed flow of outside and recirculated air through devices that provide temperature, humidity, and air cleanup control. In this mode, the control room is maintained greater than 1/8-inch water gauge positive pressure above outside atmospheric pressure and at a slightly positive pressure in relation to adjacent areas by the design of the supply and exhaust fans. There are two trains of CREVS for redundancy.

The flow path for pressurizing air to CREVS is isolated when a tornado warning is received for the SQN site area by shutting tornado dampers. This ensures that the effect of a tornado will not damage important CREVS equipment and other equipment located in the control building. When these dampers are closed, the system runs in the recirculation mode, and the ability to maintain the differential pressure is lost. During normal plant operation this is not a concern.

However, for accident conditions, loss of the pressurization feature increases the potential for inleakage of contaminated air into the control room. The licensee has determined that, even if a design-basis accident (DBA) were to occur while in the tornado warning configuration, the main control room dose would not exceed the 10 CFR Part 50, Appendix A, General Design Criteria 19 dose criteria. This is supported by an investigation performed by the licensee that determined that the normal air leakage into the main control room when depressurized was 51 cfm. If this value of inleakage is assumed during an accident, the operator would not exceed the doses listed in Table 15.5.3-7, "Control Room Personnel Dose For DBA Post Accident Period," of the Sequoyah Updated Final Safety Analysis Report.

A probability analysis performed by the licensee found that there is a very low probability of a tornado during an eight-hour period, and a low probability of the DBA (a fuel handling accident was assumed) in conjunction with a tornado warning.

Based on our review of considerations related to protecting control room personnel in the event of an accident occurring when the tornado dampers are shut, the controls that are in place to ensure that proper personnel are aware of the existence of and lifting of a tornado warning, the relatively short period of time, and the low frequency and probability of occurrence, the staff has determined that the proposed change is acceptable.

The proposal to remove the provision that Specification 3.0.3 is not applicable in Mode 6 is justified on the basis that it is an unnecessary requirement since the plant is already in the mode that is required by the specification. Therefore, this is acceptable. The proposal to replace "control room emergency ventilation system" (and in one case "control room emergency air ventilation system") with "CREVS," and add "(CREVS)" to the subject line to define the acronym, is acceptable since the change is administrative in nature.

3.0 STATE CONSULTATION

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

4.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC 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 the amendments involve no significant hazards consideration, and there has been no public comment on such finding (59 FR 32237). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR Part 51.22(c)(9). Pursuant to 10 CFR Part 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

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Dated: October 17, 1994