



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 54 TO FACILITY OPERATING LICENSE NO. DPR-33

AMENDMENT NO. 49 TO FACILITY OPERATING LICENSE NO. DPR-52

AMENDMENT NO. 26 TO FACILITY OPERATING LICENSE NO. DPR-68

TENNESSEE VALLEY AUTHORITY

BROWNS FERRY NUCLEAR PLANT, UNITS NOS. 1, 2 AND 3

DOCKET NOS. 50-259, 50-260 AND 50-296

1.0 Introduction

By letter dated August 27, 1979 (TVA BFNP TS 129), the Tennessee Valley Authority (the licensee or TVA) requested changes to the Technical Specifications (Appendix A) appended to Facility Operating Licenses Nos. DPR-33, DPR-52 and DPR-68 for the Browns Ferry Nuclear Plant, Units Nos. 1, 2 and 3. The proposed amendments and revised Technical Specifications would increase the high drywell pressure trip level setting from 2.0 psig to 2.5 psig.

2.0 Discussion

As a result of recent structural analyses performed in conjunction with a generic review of pool dynamic loads for Mark I pressure - suppression containments, the NRC staff determined that the consideration of pool dynamic loads resulting from a postulated loss-of-coolant accident had reduced the margin of safety in the containment design for the Browns Ferry Nuclear Plant. Subsequently, the licensee agreed to institute a "differential pressure control" to mitigate the pool dynamic loads and thereby restore the margin of safety in the containment design. The differential pressure control approach establishes a positive pressure between the drywell and torus regions of the containment which reduces the height of the water leg in the downcomers and subsequently reduces the hydrodynamic loads.

The differential pressure control procedure establishes approximately a 1.3 psig pressure in the drywell. The licensee indicated that the proximity of this pressure to the 2.0 psig high drywell pressure trip setpoint may result in inadvertent initiation of scram and core spray injection signals. Accordingly, in a letter dated August 27, 1979, the Tennessee Valley Authority requested a Technical Specification change for the high drywell pressure setpoint from 2.0 psig to 2.5 psig.

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3.0 Evaluation

The high drywell pressure trip signal is used to initiate primary containment isolation and serves as a backup or conjunctive signal to initiate the ECCS systems. While it is proposed to raise the trip signal setpoint value from 2.0 psig to 2.5 psig, the differential pressure between drywell ambient and the trip setting remain approximately the same (i.e., about 1.0 psi).

We have reviewed the proposed change with respect to the time to achieve containment isolation, the performance of the ECCS systems, and the containment response to a postulated loss-of-coolant accident (LOCA). The higher initial containment pressure will slightly improve the ECCS performance due to an increase in the net positive pump suction head. In addition, the change in the containment isolation time and the containment pressure response will be small since they are primarily a function of the differential pressure between drywell ambient and the trip setting. The margin between the containment design and the calculated results for a spectrum of breaks is sufficiently large to accommodate the small changes associated with the higher setpoint.

Fuel peak clad temperatures would be unaffected in the event of the design basis accident by the proposed 0.5 psi increase in containment ambient pressure as the rate of discharge from a postulated double-ended pipe rupture would be at choked-flow conditions and independent of discharge pressure.

Based on our review, we find the licensee's proposed change to increase the high drywell pressure setpoint from 2.0 psig to 2.5 psig acceptable.

4.0 Environmental Considerations

We have determined that these amendments do not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that these amendments involve an action which is insignificant from the standpoint of environmental impact, and pursuant to 10 CFR Section 51.5(d)(4) that an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of these amendments.

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5.0 Conclusion

We have concluded that: (1) because the amendments do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, the amendments do not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) 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 or to the health and safety of the public.

Dated: November 9, 1979

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