



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 33 AND 24 TO

FACILITY OPERATING LICENSE NOS. NPF-76 AND NPF-80

HOUSTON LIGHTING & POWER COMPANY

CITY PUBLIC SERVICE BOARD OF SAN ANTONIO

CENTRAL POWER AND LIGHT COMPANY

CITY OF AUSTIN, TEXAS

DOCKET NOS 50-498 AND 50-499

SOUTH TEXAS PROJECT, UNITS 1 AND 2

1.0 INTRODUCTION

By application dated August 26, 1991, Houston Lighting & Power Company, et.al., (the licensee) requested changes to the Technical Specifications (TS) (Appendix A to Facility Operating License Nos. NPF-76 and NPF-80) for the South Texas Project, Units 1 and 2. The proposed changes would amend Section 3.7.1.3 to allow the minimum required volume for the Auxiliary Feedwater Storage Tank (AFST) to decrease from 518,000 gallons to 485,000. In its letter of January 24, 1992, the licensee requested a 90-day implementation period following the date of issuance of the license amendment.

2.0 EVALUATION

The auxiliary feedwater system at South Texas Project, Units 1 and 2 (STP) supplies feedwater from a seismic Category I water source to the steam generators in emergency conditions and during some normal operating conditions. The normal water source for auxiliary feedwater (AFW) at STP is a seismic Category I storage tank with a capacity of 525,000 gallons. The present AFST volume required by TS is 518,000 gallons.

The guidelines in Standard Review Plan (SRP), Section 10.4.9, state that the AFW system should have a seismic Category I water source and be capable of operating over a time period sufficient either to hold the plant at hot standby for several hours or to cool down the primary system at a controlled rate to temperature and pressure levels at which the residual heat removal system (RHR) can operate.

The TS required volume of 518,000 gallons was chosen based on analyses of accident conditions that require AFW. The analyses included single failure of an active component of the AFW system. The worst case accident was determined to be loss of "A" train AC power, which resulted in the loss of two steam

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generator power operated relief valves (PORVs). The AFST volume included the water needed for 4 hours at hot standby with a 10-hour natural circulation cooldown. This was followed by an 8-hour soak period to prevent formation of a steam bubble in the reactor vessel head before switching to RHR. The AFST sizing also included losses due to level instrument error, water delivered to a faulted steam generator, water lost through the turbine lube oil cooler, a margin against vortex formation, and other small system water losses. The Safety Evaluation Report for STP (NUREG-078), Supplement No. 3, Section 5.4.7) states that there is sufficient circulation flow in the reactor head so that an 8-hour soak time is not required to prevent a steam bubble in the reactor vessel head. This effectively changes the worst case scenario for AFW water needs. The licensee re-evaluated the water volume calculations and concluded that the worst case single failure for the AFW system is a main feedwater line break (MFLB) with a failure of the AFW flow controller. The flow control valve was assumed to fail in the open position and maximize the water added to the steam generator with the MFLB. This scenario would require up to 471,000 gallons of water from the AFST to cool the plant to RHR cut-in conditions.

To reduce the required volume in the AFST, the licensee did not perform a new analysis but reviewed the previous analysis. The proposed TS required volume of 485,000 gallons in the AFST has sufficient margin to provide water to the steam generators in the worst postulated accident condition. This volume of water allows for postulated losses due to instrument error, unusable volume in the tank, seal leakage, and volume required in the tank to prevent vortex formation. The licensee meets the criteria for the AFW system as specified in SRP 10.4.9. Therefore, the staff finds that the change in required volume of the AFST from 518,000 gallons to 485,000 gallons is acceptable.

3.0 STATE CONSULTATION

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

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes 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 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 (56 FR 51925). 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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Date: February 25, 1992