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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 48 TO FACILITY OPERATING LICENSE NO. NPF-80

HOUSTON LIGHTING & POWER COMPANY

CITY PUBLIC SERVICE BOARD OF SAN ANTONIO

CENTRAL POWER AND LIGHT COMPANY

CITY OF AUSTIN, TEXAS

DOCKET NO. 50-499

SOUTH TEXAS PROJECT, UNIT 2

1.0 INTRODUCTION

By application dated January 25, 1994, Houston Lighting & Power Company, et. al., (the licensee) requested changes to the technical specifications (Appendix A to Facility Operating License No. NPF-80) for the South Texas Project Unit 2. The proposed one-time change to the technical specifications would add new Technical Specifications 3/4.10.6 and 3/4.10.7 to the Special Test Exceptions section. The new TS would allow the restart of Unit 2 with expired calibrations on the core exit thermocouples (CET) and the reactor coolant system (RCS) resistance temperature detectors (RTD) and allow the ascension to 75 percent rated thermal power with an expired precision heat balance reactor coolant flow measurement. Specifically, the new technical specifications would allow the limitations of Specifications 3.3.2, Table 3.3-3, items 5.f and 9.b; 3.3.3.5, Table 3.3-9, items 3a, 3b, and 10; 3.3.3.6, Table 3.3-10, items 2, 3, 12, and 15; and 3.4.9 to be suspended until completion of the calibration procedure for the CETs and the RTDs and would allow Surveillance Requirement 4.2.5.3 to be suspended until completion of the RCS heat balance flow measurement.

2.0 EVALUATION

Background

Technical specifications require that the CETs and RTDs used for determining reactor coolant temperature be calibrated every 18 months. Normally, these calibrations are completed in Mode 3 (after the temperature has stabilized at 567 degrees F) during restart from refueling outages. The current Unit 2 outage was scheduled to end on May 25, 1993. However, the outage was extended and Unit 2 will not restart until April of 1994. Due to the extended shutdown, the instruments' calibrations expired on October 23, 1993, and they were declared inoperable. With these instruments technically inoperable, Unit 2 would be required to enter limiting conditions for operation (LCOs) for all systems which use the CETs and RTDs as inputs including: the overpressure

protection system (LCO 3.4.9.3, Action c), the remote shutdown system (LCO 3.3.3.5, Action a), certain accident monitoring instrumentation (LCO 3.3.3.6, Actions 35, 36b, and 42c), the feedwater isolation signal (LCO 3.3.2, Action 20), and the steam dump system (LCO 3.3.2, Action 20). The most restrictive of these action statements requires that action be initiated within 1 hour to place the unit in Mode 4. Because calibration of these instruments can only be completed when the unit reaches normal operating pressure and normal operating temperature in Mode 3, an amendment is necessary to provide relief from the affected LCOs until the CET and RTD cross calibration is completed.

Technical specification Surveillance Requirement 4.2.5.3, the precision heat balance surveillance used to verify the RCS flow, has also expired due to the length of the outage. Under normal conditions, this surveillance is performed between 70 percent and 75 percent power during startup from a refueling outage. Because this surveillance must be performed above 70 percent power to achieve acceptable accuracy, an amendment is needed to allow the unit to ascend to 75 percent power and perform the RCS precision heat balance surveillance. When the instruments are declared operable, the special test exception will no longer be applicable and all technical specifications will be effective for Unit 2.

Calibration of CETs and RCS RTDs

The fact that the calibration of the CETs and RTDs are expired while the plant is starting up will not affect the safety of the plant because it is reasonable to expect that the readings from these instruments will be reliable. Several studies, including NUREG-CR 5560 "Aging of Nuclear Plant Resistance Temperature Detectors," have shown that the failure mechanism for these instruments is total failure as opposed to gradual drift. In fact, the setpoint drift is normally smaller than the uncertainty band associated with their accuracy. In addition, the RCS RTDs are auctioneered so that the most conservative temperature reading from the RTDs is the one chosen as input to the control systems. In this way, a failed high or low instrument will not affect the safety of the plant.

All of the above LCOs, except that for the overpressure protection system, are not in effect until Mode 3, at which point the cross calibration procedure can be started. The in-situ cross calibration procedure allows the RTD readings to be compared to actual RCS temperature as the RCS temperature increases. Therefore, the readings provided by the RTDs can be considered accurate and reliable for operator use for the short duration during which the cross calibration is completed. The overpressure protection system TS is applicable in Modes 4, 5, and 6. This system uses the readings from the RTDs to determine the lowest measured RCS temperature used in the pressure setpoint calculation for the PORVs. Therefore, if an instrument fails high, its reading will not be chosen as an input and if an instrument fails low, the result will be a more conservative PORV setpoint.

This amendment is for a one-time only change to the TS and will be in effect only for as long as it takes to complete the calibrations. None of the proposed changes will allow any safety feature to be blocked or any setpoint

to be changed. The changes will only allow the affected LCOs to be set aside until the calibrations are completed. Based on the short time that these instruments will be technically inoperable in Mode 3 and the reasonable assurance that the readings are accurate, this change is acceptable.

Precision Heat Balance

Ascension to 75 percent power without a current precision heat balance RCS flow measurement will not be detrimental to plant safety because the RCS flow rate indicators provide a reasonably accurate measurement of total core flow. The RCS flow rate indicators are subjected to a channel calibration at least once per 18 months. This calibration will be current at the time Technical Specification 3/4.10.7 goes into effect. Once in Mode 1, the readings on these meters will be checked every 12 hours to ensure adequate flow. Therefore, the readings provided by the flow meters can be considered accurate and reliable for use by the operators until the heat balance can be completed and this change 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 and 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 (59 FR 7690). 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: April 1, 1994