



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 70 TO FACILITY OPERATING LICENSE NO. NPF-30

UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. 50-483

1.0 INTRODUCTION

In a letter dated December 6, 1991, Union Electric Company (the licensee) requested a revision to Technical Specification (TS) 3/4.7.12 and associated Bases for Callaway, Unit 1. The proposed change would increase the maximum room temperature for the Electrical Penetration Rooms from 101°F to 106°F. The area temperature limitations have been determined to ensure that safety-related equipment will not be subjected to temperatures which could cause environmental degradation or reduce equipment qualified life. By letter dated June 16, 1992, the licensee forwarded the re-evaluated qualified lives for the Electrical Penetration Room components. This supplemental information did not change the initial proposed no significant hazards consideration determination.

2.0 EVALUATION

The proposed change to Technical Specification 3/4.7.12, Action Statement b, will maintain the absolute maximum temperature limit for the Electrical Penetrations Rooms at 131°F (106°F + 25°F). The modification to Technical Specification Table 3.7-4 will allow a maximum temperature limit of 106°F for the Electrical Penetration Rooms. The revision to Bases Section 3/4.7.12 is editorial in nature and provides additional information on this change.

The maximum room temperatures for the electrical penetration rooms were established to ensure that safety-related equipment is maintained within temperatures that will not affect their environmental qualifications. The temperature limits in Table 3.7-4 were originally derived by assuming the rooms would be at their maximum normal temperatures at the start of a Design Basis Accident (DBA). An allowance of  $\pm 3^\circ\text{F}$  was then applied to account for any instrument errors. Therefore, the current maximum normal Electrical Penetration Room temperature of 104°F was reduced by 3°F (for conservatism) and listed in Table 3.7-4 as 101°F. An alarm setpoint at 97°F was established to ensure that the Technical Specification limit is never exceeded.

The licensee stated that, during the summer months, the temperature of the Electrical Penetration Rooms can exceed the alarm setpoint. When this occurs,

plant personnel are sent to the area to monitor temperature with highly accurate hand held instruments. If the temperature approaches the Technical Specification limit of 101°F, the Electrical Penetration Room doors are opened and temporary fans are installed to reduce the temperature of the rooms. Additional personnel are also required to monitor the room temperature and close the doors, if necessary.

The licensee proposes to change the TS by raising the maximum temperature for the Electrical Penetration Rooms to 106°F. This change will alleviate the possible Technical Specification compliance concern and allow the licensee to better allocate plant resources. The alarm setpoint, as described in the Bases section, would be 103°F. If this alarm setpoint is reached, room temperature would be monitored, doors could be opened and temporary fans used to reduce the temperature in the Electrical Penetration Room prior to exceeding the 106°F limit.

The licensee has performed a calculation to support this change. This calculation indicates that raising the normal maximum temperature of the Electrical Penetration Rooms to 106°F will have a negligible effect on the surrounding rooms. The increased heat loads are insignificant (less than a 2% increase). This calculation also shows that there is no impact on DBA temperatures. The Electrical Penetration Rooms are assumed to reach a post-accident temperature of 106°F. The higher initial start temperature will only increase the post-accident cooling loads by 0.2%, which is a negligible.

The Electrical Penetration Rooms are considered a harsh environment for radiation only. This is because, following an accident, temperature remains less than 110°F (mild environment upper temperature limit) and pressure and humidity are unchanged. The qualified life for the equipment in these rooms is based on the room temperature being maintained continuously at the maximum normal temperature of 104°F. Exceeding 104°F for short durations during the summer months does not impact the penetration room equipment environmental qualification because the qualified lives are based on a continuous temperature of 104°F throughout the year. The licensee has re-evaluated the qualified life of the affected components, based on 106°F continuous temperature, using the Arrhenius equation. The qualified life for the affected components will be decreased by 11 months (0.9 years), as a result of the two degree temperature change.

The staff has reviewed the above proposed change to the TS and concludes that the original intent of the TS has been maintained. The increased heat loads in the Electrical Penetration Rooms have a negligible effect on the surrounding rooms and no impact on equipment environmental qualification. Therefore, the staff finds that the proposed TS changes are acceptable.

### 3.0 STATE CONSULTATION

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

### 4.0 ENVIRONMENTAL CONSIDERATIONS

This amendment involves a change to a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluent 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 this amendment involves no significant hazards consideration and there has been no public comment on such finding (57 FR 7817). Accordingly, this 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 staff 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: June 18, 1992