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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 147 TO FACILITY OPERATING LICENSE NO. DPR-23

CAROLINA POWER & LIGHT COMPANY

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

DOCKET NO. 50-261

1.0 INTRODUCTION

By letter dated August 5, 1993, the Carolina Power & Light Company (licensee) submitted a request for changes to the H. B. Robinson Steam Electric Plant, Unit No. 2, (HBR2) Technical Specifications (TS). The requested changes would provide a clarification to emergency diesel generator (EDG) testing requirements as specified in TS 4.6.1.1 and 4.6.1.4. According to TS 4.6.1.1, the monthly EDG surveillance tests are to be conducted at the nameplate rating of the EDG, while TS 4.6.1.4 limits the loading of the EDGs to not exceed the long-term (continuous) rating of 2500 kW.

2.0 BACKGROUND

The Electrical Distribution System Functional Inspection (EDSFI) Report, NRC Inspection Report No. 50-261/91-21, dated January 10, 1992, identified that the EDGs at HBR2 were not being tested at their nameplate rating as prescribed by TS 4.6.1.1. The nameplate rating of the HBR2 EDGs stipulated in the TS 4.6.1.1 is 2500 kW at a 0.8 power factor (i.e., 3125 kVA). The HBR2 EDGs have been tested at 2500 kW at a power factor 1.0 (i.e., 2500 kVA), which the licensee has interpreted as equivalent to the EDG nameplate rating. Under this loading condition, the expected full load current (2500 kVA) of the EDG at 1.0 power factor is equivalent to only 80 percent of the EDG output (3125 kVA) at 0.8 power factor.

The NRC staff has recently reviewed this issue and has determined that the EDG's capability to carry accident loads needs to be demonstrated. The demonstration should be performed as a part of the EDG 24-hour run test during each refueling outage at a power factor range of 0.8 to 0.9. Since the HBR2 TS do not contain a EDG 24-hour test provision, the NRC staff has interpreted the current TS 4.6.1.1 to mean that the EDG should be tested at a specific kW (2500 kW) and a power factor of 0.8-0.9 in its refueling surveillance testing.

Because the wording of TS 4.6.1.1 and its bases are somewhat ambiguous, the licensee has proposed to revise TS 4.6.1.1 to establish a specific or measurable EDG loading kW value. In response to the EDSFI report, the licensee committed to implement a new TS that will specify testing during every refueling outage with a proper power factor value to demonstrate the EDG's ability to carry accident loads.

By letter dated June 5, 1993, CP&L informed the NRC that plans have been established and procedures are being developed to test the EDGs, as discussed above, on a refueling interval frequency commencing with refueling outage 15, which began on September 11, 1993.

During the development of EDG test procedures to support the new TS, the licensee recognized that the analyzed accident loads are 2610 kW, which exceeds the EDG continuous-load rating of 2500 kW as stipulated in TS 4.6.1.4. Since TS 4.6.1.4 prohibits loading of the EDG beyond 2500 kW, the licensee finds that a revision to TS 4.6.1.4 is necessary to allow testing of the EDG at a load level above 2500 kW.

EVALUATION

(1) TS 4.6.1.1

The current TS 4.6.1.1 requires that monthly EDG testing be performed to demonstrate, "...assumption of load by the diesel generator up to the nameplate rating." The proposed amendment deletes the current TS 4.6.1.1 provision entirely and replaces it with a new TS provision which states, "On a monthly basis, each diesel generator shall be tested by manually-initiated start, followed by manual synchronization with other power sources, and verification that each diesel generator is loaded and operates for $\geq$ 60 minutes at a load $\geq$ 2350 kW and $\leq$ 2500 kW."

The NRC has reviewed the licensee's proposed change to TS 4.6.1.1 and finds that the proposed TS represents a more specific or measurable EDG kW value. We also find that the proposed TS change is consistent with the monthly surveillance provision prescribed in the "Improved Standard TS for Westinghouse Plants," NUREG-1431, in which no power factor requirements are established. However, by their June 5, 1993, reply to the EDSFI report, the licensee has committed to amend the TS in the near future, after procedures have been finalized. The planned TS change will include a power factor range (i.e., 0.8 to 0.9) for the EDG 24-hour run test that will be performed during every refueling outage. On this basis, we conclude that the proposed revision to TS 4.6.1.1 is acceptable for the interim and should be granted.

(2) TS 4.6.1.4

The current TS 4.6.1.4 requires, "Diesel generator electric loads shall not be increased beyond the long term rating of 2500 kW." The proposed TS 4.6.1.4 replaces the current TS with more detailed guidance regarding its EDG loading limitations for the continuous load of 2500 kW and the short-term overload of 2750 kW not to exceed 2 hours in any 24 hour period. We find that the kW values in the proposed TS are consistent with kW values shown in the HBR2 TS bases section that states that, "the units have a continuous rating of 2500 kW with a 2-hour overload capability of 2750 kW in any 24-hour period."

In order to implement the new TS, it is necessary for the licensee to develop procedures to demonstrate during every refueling outage the EDG's ability to

carry accident loads along with appropriate power factor values at which each EDG would be loaded during its surveillance testing. Since the current TS 4.6.1.4 prohibits testing EDGs beyond the long-term rating of 2500 kW, a revision to the current TS 4.6.1.4 is necessary in order to test the EDGs above 2500 kW.

The NRC has reviewed the proposed TS 4.6.1.4 and finds that the proposed short-term overload rating of 2750 kW is adequate to demonstrate the EDG capability to carry the analyzed accident load of 2610 kW. On this basis, we conclude that the proposed TS 4.6.1.4 is acceptable and should be granted.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the State of South Carolina 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 the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change Surveillance Requirements. The NRC 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 (58 FR 46224). 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: October 5, 1993