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SUBJECT: Responds to ECCS single electrical failures,per util 890419 commitment re NRC ECCS single failure evaluation.

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United States Nuclear Regulatory Commission
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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23
SINGLE ELECTRICAL FAILURES

Gentlemen:

On May 19, 1989, Carolina Power & Light Company (CP&L) submitted a letter which provided a follow-up response on the Emergency Core Cooling System (ECCS) single failure evaluation pursuant to NRC's 10CFR50.54(f) letter of March 17, 1989. The same 10CFR50.54(f) letter also required that CP&L address plans to identify and correct single electrical failure vulnerabilities associated with other safety systems per 10CFR50, Appendix A (General Design Criteria - GDC). This letter provides CP&L's response as committed in our letter dated April 19, 1989.

Carolina Power & Light Company received a construction permit for the H. B. Robinson Steam Electric Plant Unit No. 2 (HBR2) on April 13, 1967, and an operating license on July 31, 1970. During this time frame, the Atomic Energy Commission (AEC) used its proposed GDC (published on November 22, 1965 and revised on July 11, 1967) to assess the designs of reactor license applicants. The 1965 version of the GDC did not call for design analyses of single failures of passive or active components in electrical systems, while the 1967 version required that, "As a minimum, each engineered safety feature shall provide this required safety function assuming a failure of a single active component."

The 1967 version of the proposed GDC stated that the criteria would not add any new requirements, but were intended to more clearly describe current AEC requirements to assist applicants in the preparation of applications. Accordingly, CP&L incorporated the essence of the 1967 proposed GDC into the original Final Safety Analysis Report (FSAR), which formed the licensing basis for HBR2. In the May 18, 1970 Safety Evaluation, the AEC Staff stated that "the design features and the treatment of safety matters were consistent with current regulatory criteria and policy."

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The General Design Criteria were formally adopted by the AEC in May 1971, establishing minimum requirements for the principal design criteria for plants similar in design and location to plants for which construction permits had been issued by the Commission. These formally-adopted GDC reduced the number of criteria, eliminated the term Engineered Safety Feature (incorporated now in the criteria for individual systems), and added definitions of important terms, including the current definition of single failure. At the time of issuance, there was no statement indicating that the final GDC were to be applied retroactively to licensed reactors, or that individual licensees need provide any response to the AEC. Thus, the HBR2 licensing basis remains as stated in the now Updated FSAR.

Nevertheless, CP&L has, on its own, embarked on two major programs which focus on the plant design. The first is the Design Basis Reconstitution Program, a significant multi-year effort to consolidate the original design basis along with the changes which affected that basis. This program is well underway, and as formally presented to both NRR and Region II, the 15 safety system Design Basis Documents (DBD) are scheduled to be completed in 1991, with DBD validation to be completed in 1992. The second major program is the creation of an overall plant-based Level I Probabilistic Risk Assessment (PRA). This assessment evaluates present plant design for potential risk-significant component failures (both single and multiple) to determine their contribution to the plant's core damage frequency. The assessment considers both active and passive failures in front-line and support systems which could affect core damage frequency. The Level I PRA is scheduled to be completed in 1989. It has also been the subject of formal presentations to both NRR and Region II.

The Design Basis Reconstitution Program and PRA are not designed to ensure literal compliance with the single failure requirements of today's GDC. They do not accomplish a wire-by-wire evaluation of single failure potentials. However, they do provide reasonable assurance that risk-significant single failure vulnerabilities will be identified. We feel that this probabilistic-type approach is consistent with the philosophy that was used in the NRC's evaluation of plants of a similar vintage to HBR2 through the Systematic Evaluation Program (SEP). In the SEP evaluation, PRA techniques were used to categorize deviations from current licensing requirements by their risk-significance. Our strong commitment to this approach is evidenced by actions taken to date, including shutting the plant down and/or undertaking modifications, when significant design deficiencies have been identified.

Since the GDC are intended to provide engineering goals by which reactor safety can be satisfactorily gauged, we feel strongly that the programs described above will assure that the plant meets the basic intent of the GDC, which is to ensure that structures, systems and components important to safety are designed and constructed to provide reasonable assurance that the plant can be operated without undue risk to the health and safety of the public.

In summary, the H. B. Robinson Plant was designed, constructed and licensed in an era prior to the formal issuance of the current General Design Criteria, as were several other plants. However, while our licensing basis does not fully meet the new, more stringent single failure definition of the current GDC, the aggressive actions that we are taking in implementing the Design Basis Reconstitution Program and Probabilistic Risk Assessment are allowing us to better understand the existing design and its risk-significant failure

vulnerabilities such that corrective action can be taken when necessary to control that risk. Carolina Power & Light Company is pursuing the completion of these programs and feels that actions taken to date and the programs described above will assure that the plant meets the overall goals of the GDC and thus provide the NRC the assurance of our commitment to the safe, efficient operation of the H. B. Robinson facility.

Please contact Mr. L. I. Loflin if you have any questions.

Yours very truly,

R A Watson

R. A. Watson

RAW/RWP/crs (360CRS)

cc: Mr. S. D. Ebneter
Mr. L. Garner (NRC - HBR)
Mr. R. Lo

R. A. Watson, having been first duly sworn, did depose and say that the information contained herein is true and correct to the best of his information, knowledge and belief; and the sources of his information are officers, employees, contractors, and agents of Carolina Power & Light Company.

Rebecca R. Poole

Notary (Seal)

My commission expires:

June 8, 1991