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SUBJECT: Submits supplemental response to station blackout rule.

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**MAR 30 1990**

SERIAL: NLS-90-071  
10CFR50.63

**A. B CUTTER**  
Vice President  
Nuclear Services Department

United States Nuclear Regulatory Commission  
ATTENTION: Document Control Desk  
Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2  
DOCKET NO. 50-261/LICENSE DPR-23  
SUPPLEMENTAL RESPONSE TO STATION BLACKOUT RULE

Gentlemen:

On March 3, 1989, Carolina Power & Light Company (CP&L) submitted a response to the Station Blackout (SBO) Rule (10CFR50.63) based on the guidelines provided in NUMARC 87-00, "Guidelines and Technical Bases for NUMARC Initiatives Addressing Station Blackout at Light Water Reactors." On January 4, 1990, NUMARC issued a letter requesting each utility to supplement the SBO submittals to the NRC with a letter indicating that either the previous response was based on use of the NUMARC 87-00 guidance, including the clarification in the attachment to the January 4, 1990 NUMARC letter, or any deviations from the accepted NUMARC 87-00 guidance have been or will be clearly indicated. Carolina Power & Light Company has reviewed the January 4, 1990 NUMARC letter and our previous response to the SBO Rule for the H. B. Robinson Steam Electric Plant, Unit No. 2 (HBR2). Based on our review, the following changes to the coping assessment calculations were necessary. No new deviations from the NUMARC 87-00 methodology were identified. The results of the review are detailed below.

1. Changes to Coping Assessment Calculations

Proposed Station Blackout Duration - Based on the additional clarification provided in the NUMARC letter, the I Group for HBR2 has been reevaluated as I3 instead of I1/2, as previously determined. The manual transfer of safe shutdown bus E2 to the preferred off-site power source can only be performed by removing the main generator links and "backfeeding" the main transformer. This activity is estimated to take four hours or more. Therefore, the answer to item B(2) of NUMARC 87-00, Section 3.2.1, Part 1D is "yes," which results in the off-site power system being classified as I3 and the off-site power design characteristic as P2. With the other elements that determine the coping category remaining unchanged, the revised coping duration for HBR2 is eight hours instead of four hours, as previously determined.

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The Dedicated Shutdown Diesel Generator (DSDG) System, which is the alternate AC (AAC) power source, will be available within one hour after SBO, and has sufficient capacity and capability to operate systems necessary for coping with an eight hour SBO event to bring the plant to and maintain the plant in safe shutdown.

Condensate Inventory for Decay Heat Removal - The maximum condensate inventory requirements during the first hour after SBO are based on the core decay heat removal and cooldown of the reactor coolant system at a maximum cooldown rate of 100°F per hour. For HBR2, the condensate inventory required during the first hour after SBO is estimated at 28,600 gallons, which is less than the minimum technical specification limit of 35,000 gallons for the condensate storage tank. After the first hour, the AAC source can power one service water pump to provide an additional seven hours of cooling water to the steam generators through the steam driven auxiliary feedwater pump via a service water system cross-connect to the auxiliary feedwater system.

Effects of Loss of Ventilation - The NUMARC 87-00 guidance and clarifications define that a dominant area of concern (DAC) exists when, based on documented engineering judgment, areas containing SBO response equipment have substantial heat generation terms and lack adequate heat removal systems due to the blackout.

Based on HBR2 being in a four-hour coping category, CP&L's previous SBO submittal of March 3, 1989 indicated that no DACs existed at HBR2. However, now that HBR2 is in an eight-hour category, the following potential DACs were identified.

<u>Area</u>	<u>Temperature</u>
Battery Room	145°F
Cable Spreading Room	121.5°F

Reasonable assurance of the operability of station blackout response equipment in the above DACs has been assessed using a combination of NUMARC 87-00 Appendix F and the associated Appendix F Topical Report to NUMARC 87-00. No modifications or associated procedure changes are required to provide reasonable assurance for equipment operability.

Reactor Coolant Inventory - The ability to maintain adequate reactor coolant system inventory to ensure that the core is cooled has been assessed for eight hours. A plant-applicable analysis contained in Westinghouse Owners' Group Background Document ECA-0.0, "Loss of All AC Power," was used for this assessment. The expected rates of reactor coolant inventory loss under SBO conditions do not result in core uncover in a SBO of eight hours. Therefore, makeup systems in addition to those currently available under SBO conditions are not required to maintain core cooling under natural circulation.

2. Deviation from NUMARC 87-00 Guidelines and Methods - No new deviations have been identified based on our review of the NUMARC 87-00 guidance, including the clarification in the attachment to the January 4, 1990 NUMARC letter.

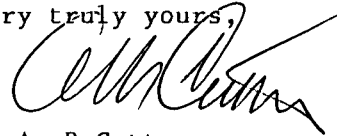
3. Emergency Diesel Generator (EDG) Target Reliability

A target EDG reliability of 0.95 was selected for use in the evaluations based on the performance of the plant's EDGs. It is CP&L's understanding that this target reliability is to be maintained consistent with the final resolution of Generic Issue B-56.

In summary, Carolina Power & Light Company's previous SBO submittal for HBR2, as modified by this letter, is based on the guidelines provided in NUMARC 87-00 and the clarifications issued by NUMARC on January 4, 1990. Applicability of the NUMARC 87-00 assumptions is documented in our files.

If you should have any questions, please contact Mr. S. D. Floyd at (919) 546-6901.

Very truly yours,



A. B. Cutter

JCP/dsm (660ECC)

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