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SUBJECT: Responds to NRC recommendations in NRC 911031 SER re util
 response to station blackout (10CFR50.63). Recommendations
 cover Class 1E battery capacity calculations & containment
 heatup calculations.

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AEP:NRC:0537G.

Donald C. Cook Nuclear Plant Units 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
RESPONSE TO STATION BLACKOUT (SBO)
SAFETY EVALUATION REPORT (SER) (10 CFR 50.63)

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Attn: T. E. Murley

December 4, 1991

Dear Dr. Murley:

By letter dated October 31, 1991 from Mr. T. G. Colburn of your staff, we were presented with the safety evaluation report (SER) summarizing your staff's review of our submittals made in response to the station blackout (SBO) rule (10CFR50.63). That SER concluded, contingent upon the satisfactory resolution of the recommendations presented by your staff, that the design of the Donald C. Cook Nuclear Plant conforms with the SBO rule. Our response to the seven recommendations made by your staff is given below.

Recommendation (1) - Class 1E Battery Capacity Calculations

The calculations used to determine the SBO battery capacity adequacy are based on IEEE Standard 485. Whereas IEEE Standard 485 recommends a 10% to 15% design margin to allow for unforeseen additions to the dc system and less-than-optimum operating conditions of the battery (due to improper maintenance, recent discharge, or ambient temperatures lower than anticipated), or both, our position is that a 5% design margin is adequate for the SBO based on the following:

- o Unforeseen additions - the Cook Nuclear Plant is a mature plant with little expected future dc system load growth. Further, all loads added are required to be screened against existing sizing calculations.
- o Less-than-optimum operating conditions - NUMARC 87-00, Rev. 1, paragraph 2.2.1(2) states "immediately prior to the postulated station blackout event, the reactor and supporting systems are within normal operating ranges for

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pressure, temperature, and water level. All plant equipment is either normally operating or available from the standby state." This statement negates the need to include a design margin for less-than-optimum operating conditions. It should be noted that the sizing calculations did assume a minimum battery temperature (60 °F) instead of the lowest electrolyte temperature anticipated under normal operating conditions (70°F) as permitted in NUMARC 87-00, Rev. 1. Using the lower temperature provides for additional margin via the temperature correction factor.

- o Additionally, the sizing discussion contained in Volume 9, DC Distribution System of EPRI's Power Plant Electrical Reference Series states that if design margin has been added during development of the duty cycle, do not add more via a general design margin. During the development of the current SBO battery sizing calculations, if reliable load information could not be determined, total connected load or a very conservative assumption was used. Thus, design margin was added during the development of the duty cycle.

As a part of scheduled internal review efforts, we have committed to review and reanalyze the existing battery sizing calculations, as necessary. The current schedule requires the train A and N batteries to be reviewed/reanalyzed by March 1, 1992, and the train B batteries to be reviewed/reanalyzed by July 1, 1992.

Recommendation (2) - CRID Inverter Equipment Qualification Temperatures

We have verified that the CRID inverters are qualified for the calculated ambient temperature of 121°F using the manufacturers equipment qualification temperature.

Recommendation (3) - Containment Heat-up Calculations

In accordance with the NUMARC Supplemental Questions/Answers and Major Assumptions dated January 4, 1990, in March of 1990 we verified that the heat-up conditions resulting from a LOCA/HELB in the containment envelops the conditions expected during an SBO event for the Donald C. Cook Nuclear Plant.

Recommendation (4) - Containment Isolation Valves

Valves MCM-221 and MCM-231 are required to be in the open position for the operation of the turbine-driven auxiliary feedwater pump during an SBO. During an SBO, these valves will only be closed if there is a simultaneous indication of a steam generator tube rupture (SGTR) or a steam line break (SLB) event occurring. Our procedures 01- and 02-OHP 4023.ECA-0.0, entitled "Loss of All AC Power," require the closure of the isolation valves MCM-221 and MCM-231 (as necessary) if a simultaneous SGTR or SLB event occurs.

Recommendation (5) - Plant Modifications

In our letter AEP:NRC:0537E, dated March 30, 1990, we identified two plant modifications required to enhance the Cook Nuclear Plant's four-hour SBO coping capability. The first modification would ensure direct indication of RCS pressure and temperature in the event of an SBO. This modification was completed during our last refueling outages.

The second modification concerned the need for several additional emergency lights, not already addressed by Section III.J of 10CFR50 Appendix R, to enhance the support of the SBO procedures. Specifically, in our submittal letter AEP:NRC:0537E, we committed to generate a design change package which will identify those plant areas during an SBO that would be enhanced by emergency lighting, and to input this design change package into our Long-Range Planning Module. In the interim, our operators have flashlights for their use during routine tours and in emergency situations (i.e., in the event of an SBO). We have since identified those plant areas and have generated a design change package to install the beneficial emergency lighting. The installation of those emergency lights is scheduled to be completed by November 30, 1993.

Recommendation (6) - Quality Assurance

Our past review of the equipment required for coping and recovery from an SBO event concluded that the equipment is currently covered under existing quality assurance programs. As the result of some internal reviews, several minor changes to the SBO response procedures are currently being made. These changes should be completed by January 31, 1992. Following the completion of those revisions to the SBO response procedures, we will verify and confirm that the SBO equipment is or will be covered by an appropriate quality assurance program consistent with the guidance of Appendix A, RG 1.155. This verification will be completed by April 30, 1992.

Dr. T. E. Murley

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Recommendation (7) - EDG Reliability Program

The Cook Nuclear Plant emergency diesel generator reliability program meets the requirements of Regulatory Guide 1.155, Section 1.2, and is comprised of the five elements or activities outlined in that Regulatory Guide.

This document has been prepared following Corporate procedures that incorporate a reasonable set of controls to ensure its accuracy and completeness prior to signature by the undersigned.

Sincerely,



E. E. Fitzpatrick
Vice President

dag

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