

September 7, 2001

MEMORANDUM TO: Suzanne C. Black, Deputy Director
Division of Licensing and Project Management
Office of Nuclear Reactor Regulation

FROM: Geoffrey E. Grant, Director /s/Geoffrey E. Grant
Division of Reactor Projects

SUBJECT: REQUEST FOR TECHNICAL ASSISTANCE - DESIGN BASIS
ASSUMPTIONS FOR ABILITY OF PRAIRIE ISLAND, UNIT 2,
EMERGENCY DIESEL GENERATORS TO MEET SINGLE
FAILURE CRITERIA FOR EXTERNAL EVENTS (TIA 2001-10)

Region III requests that NRR resolve an issue related to design basis assumptions for the Unit 2 emergency diesel generators to meet single failure criteria for external events. The specific issue involves the licensee's assumption, as stated in the attached LER 2-01-03, dated July 9, 2001, that for certain external events, such as flooding, a concurrent single failure is not assumed as part of the Prairie Island design basis.

Background

At the time of original licensing, the NRC Standard Review Plan did not exist. The licensee's position on external events is that the regulations, codes, and standards that the plant was designed to generally included the requirement that safety-related systems meet single failure criteria for postulated design basis accidents, but that those accidents did not include external events. In fact, by examining the plant design, it is apparent that the plant was licensed with several single failure vulnerabilities to external events, such as floods, earthquakes and possibly severe weather. The licensee maintains that, except for certain limited cases, nothing they have committed to since that time has required them to change that design basis.

The plant was licensed and initially operated with only two emergency diesel generators to be shared between both Units 1 and 2. Several years ago, the licensee added two safety-related emergency diesel generators and split the electrical distribution system such that the new diesels served Unit 2 and the old diesels served Unit 1 (with the ability to cross-tie the diesels to the opposite unit in an emergency). This modification was done not only to meet the Station Blackout Rule, but also to enhance safety by increasing the redundancy and reliability of the safety-related emergency AC power system.

During the design, installation, and testing of the new emergency diesel generators, several licensing submittals, requests for additional information, and safety evaluations were exchanged between the licensee and the NRC. The licensee agrees that the new systems were designed and licensed to meet single failure criteria for accidents and events, including external events, however, they believe that these commitments did not change the original plant design basis and that the plant (including the Unit 2 emergency AC power system) is not

required to be able to withstand a single failure in a flooding event. The licensee refers to statements in the attached design submittal and NRC safety evaluation in which it was agreed that within the existing plant boundary the existing design criteria as defined in the USAR will apply.

The question is whether the new Unit 2 emergency AC power system, which was not within the existing plant boundary and was designed to meet single failure criteria for external events, is still required to meet single failure criteria for external events, for any single failure within the boundary of the new system.

Requested Action

From a design and licensing basis perspective for system functional capability, is the Unit 2 emergency AC power system required to meet single failure criteria for external events such as a flood even though the rest of the plant may not be required to?

Risk Significance

This issue has no effect on the SDP for an issue with an emergency diesel generator because unrelated failures of other equipment (such as assumed for single failure criteria) is not assumed in an SDP. However, the issue does affect the category of reportability of the issue discussed in LER 2-01-03 and, more importantly, the calculation of fault exposure hours for the emergency AC power system under the ROP Performance Indicator reporting program. This issue could result in a change in color of the Unit 2 Emergency AC Power Performance Indicator.

This request was discussed between Roger Lanksbury, Region III and Claudia Craig, NRR on September 4, 2001. It was agreed that NRR would respond to this request by August 30, 2002.

- Attachments:
1. Prairie Island Licensee Event Report 2-01-03
 2. Northern States Power Company letter, "Design Report for the Station Blackout/Electrical Safeguards Upgrade Project, Revision 1," dated September 23, 1993 (excerpts - 6 pages total)
 3. NRC letter, "Prairie Island SBO/ESU Projects Evaluations," dated April 28, 1992 (excerpts - 2 pages total)

cc S. Collins, NRR
J. Zwolinski, NRR

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