

Northern States Power Company

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March 25, 1992

10 CFR Part 50 Section 50.73

U S Nuclear Regulatory Commission Attn: Document Control Desk Washington, DC 20555

> PRAIRIE ISLAND NUCLEAR GENERATING PLANT Docket Nos. 50-282 License Nos. DPR-42 50-306 DPR-60

Design Basis Reconstitution Effort Identified a Condition Outside 10 CFR Part 50 Appendix R Requirements

The Licensee Event Report for this occurrence is attached.

This event was reported via the Emergency Notification System in accordance with 10 CFR Part 50, Section 50.72, on February 24, 1992. Please contact us if you require additional information related to this event.

Thruca Vike

Thomas M Parker Manager Nuclear Support Services

c: Regional Administrator - Region III, NRC NRR Project Manager, NRC Senior Resident Inspector, NRC K Sanda, State of Minnesota

Attachment

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On February 24, 1992 a condition was identified that is considered outside the 10 CFR Part 50 Appendix R requirements. This condition was discovered during the Design Basis Reconstitution effort. Specifically, a design deficiency exists which does not facilitate isolation of associated circuits in the event of a catastrophic fire in the Control Room. This situation was not previously identified in system reviews, or accounted for in the Control Room ire procedures.

The 4160 VAC breaker lockout relay (86) reset circuit for several safeguards pump motors is not completely protected by redundant fusing. If the circuit in the Control Room is damaged by fire before the local/remote switch is placed in LOCAL control, it is possible to open the 60 amp fuse, de-energizing all DC control power for the 4160 VAC bus. It is then necessary to replace the fuse in order to restore DC control power.

Interim corrective actions have been taken. The lockout relay reset circuits will be modified to satisfy Appendix R requirements.

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EVENT DESCRIPTION

On February 24, 1932 a condition was identified that is considered outside the 10 UFR Tart 50 Appendix R requirements. This condition was discovered during the Derign Basis Reconstitution effort. Specifically, a design deficiency exists which does not facilitate isolation of associated circuits in the event of a catastrophic fire in the Control Room. This situation was not previously identified in system reconst, or accounted for in the Control Room fire procedures.

10 CFR Part 50 Appendix R states the requirements for a Fire Protection program for nuclear plants operating prior to January 1, 1975. Prairie Island is one of those plants. Section I, "Introduction and Scope," (for equipment necessary to establish and maintain bot shutdown) scates:

"...one train of equipment necessary to achieve hot shutdown from either the control room or emergency control stations(s) must be maintered free of fire damage by a single fire, including an exposure fire."

Contrary to this requirement, the direct ourrent (DC) control power circuits for several breakers (EIIS Component "dentifier BKR) powered from the 4160 VAC switchgear (Buses 15 and 26, buses necessary for hot shutdown) are not compostely protected by redundant fusing; the breakers are as follows:

- 1. 11, 21 Safety Injection Pump
- 2. 11, 21 Residual Heat Removal Pump
- 5. 11, 21 Containment Spray Pump
- 4. 11, 21 Component Cooling Pump
- 5. 21 Auxiliary Feedwater Pump

Specifically, the lockout relay (86) reset circuit for each of the above breakers is not protected.

4160 VAC Bus 15 & 26 breaker control power is from DC Distribution Panels 11 & 21, respectively. Each circuit is protected by 60 amp fuses (EIIS Component Identifier FU) located in the associated DC Distribution Panel. The Control Room close and trip circuits for each of the breakers are protected by 30 amp fuses. The Control room evacuation procedure (in the event of a fire) directs operators to place the pump local/remote switches in LOCAL. This isolates the trip/close/lockout relay reset circuits from the Control Room, and switches a new set of 30 amp fuses into the trip/close circuit through the use of the 43R and 43L switch contacts.

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However, for the above noted 4160 VAC pump breakers, similar redundant fusing is not provided for the lockout relay reast in the Control Room. During a Control Room fire (with the pump local/remote switch in REMOTE), a negative wire from the same battery could short to the positive lead in the lockout relay reset circuit (hot short). The short circuit could open the control power supply fuse (60 amps), de-energizing all DC control power for the 4160 VAC bus. Placing the pump local/remote switch in LOCAL isolates the damaged circuit; however, it is necessary to replace the fuse in order to restore DC control power

During the short period of time before the local/remote switch is placed in LOCAL if the circuit in the Control Room is damaged, it is possible to open the 60 amp fuse, de energizing all DC control power for the 4160 VAC bus. It is then necessary to replace the fuse in order to restore DC control power. If the local/remote switch is placed in LOCAL before the damage occurs, the circuit is isolated from the Control Room and the fuse would not be plown; in this event, fuse replacement would not be necessary.

CAUSE OF THE EVENT

Subsequent to a review of NRC Information Notice 65-09, "Isolation Transfer Switches and Post-Fire Shutdown Capability," redundant fusing was provided for equipment necessary to achieve and maintain hot shutdown. However, redundant fusing was inadvertently not provided for the lockout relay reset circuits in the Control Room during this review.

ANALYSIS OF THE EVENT

This event is reportable pursuant to 10 CFR Part 50 Section 50.73(a)(2)(ii) as it is considered outside the design basis for compliance with 10 CFR Fart 50 Appendix & This event was verbally reported on bruary 24, 1992 pursuant to 10 CFR Part 50 Section 50.72(b)(1)(ii).

The immediate corrective actions (below) are deemed adequate to satisfy Appendix R requirements for an interim pariod. The time required for an operator to verify status of the DC control power and to replace fuses, if necessary, is minimal since the operator is already required by presedure to perform actions in bus rooms 15 and 26.

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CORRECTIVE ACTION

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Immediate Corrective Actions:

- The Control Room evacuation procedure (due to fire) was revised to provide procedural i tions to identify and replace potentially blown DC control power fuses.
- 2. Replacement fules, to restore DC Control Power, were staged (and identified) near the appropriate DC distribution panels.

Long Term Corrective Actions:

- The lockout relay reset circuits will be modified to satisfy Appendix R requirements. Unit 2 breakers will be addressed by the Electrical Systems Upgrade project, which is installing new Unit 2 4160 VAC switchgear. Unit 1 will be completed in a time frame similar to Unit 2 ensuring similar configurations between the units.
- A complete review of the Appendix R program is in progress as part of the Design Basis Reconstitution effort. Any other discrepancies will be identified and resolved through this program.

FAILED COMPONENT IDENTIFICATION

None,

PREVIOUS SIMILAR EVENTS

There have been no previous similar events reported at Prairie Island.