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.

for 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

IE22
1/1

NRC FORM 366 (6-89) U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92
ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1): Prairie Island Nuclear Generating Plant Unit 1

DOCKET NUMBER (2): 0 5 0 0 0 2 8 2

PAGE (3): 1 OF 0 4

TITLE (4): Design Basis Reconstitution Effort Identified a Condition Outside 10 CFR Part 50 Appendix R Requirements

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
02	24	92	92	002	00	03	25	92	PINGP Unit 2	05000306
										05000

OPERATING MODE (9): N

POWER LEVEL (10): 100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

	20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(b)
	20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)		73.71(c)
	20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)		OTHER (Specify in Abstract below and in Text, NRC Form 366A)
	20.405(a)(1)(iii)		50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		
	20.405(a)(1)(iv)	XX	50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)		
	20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
Arne A Hunstad	612 388-1121

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

SUPPLEMENTAL REPORT EXPECTED (14)

	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	XXX NO			

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

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 fire 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.

EVENT DESCRIPTION

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 fire procedures.

10 CFR Part 50 Appendix R states the requirements for a Fire Protection program for nuclear plants operating prior to January 1, 1979. Prairie Island is one of those plants. Section I, "Introduction and Scope," (for equipment necessary to establish and maintain hot shutdown) states:

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

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

1. 11, 21 Safety Injection Pump
2. 11, 21 Residual Heat Removal Pump
3. 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.

However, for the above noted 4160 VAC pump breakers, similar redundant fusing is not provided for the lockout relay reset 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 blown; in this event, fuse replacement would not be necessary.

CAUSE OF THE EVENT

Subsequent to a review of NRC Information Notice 85-09, "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 Part 50 Appendix R. This event was verbally reported on February 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 period. 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 procedure to perform actions in bus rooms 15 and 26.

CORRECTIVE ACTION

Immediate Corrective Actions:

1. The Control Room evacuation procedure (due to fire) was revised to provide procedural actions to identify and replace potentially blown DC control power fuses.

2. Replacement fuses, to restore DC Control Power, were staged (and identified) near the appropriate DC distribution panels.

Long Term Corrective Actions:

1. 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.

2. 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.