



Northern States Power Company

Prairie Island Nuclear Generating Plant

1717 Wakonade Dr. East
Welch, Minnesota 55089

October 27, 1995

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

Determination That Loss of Instrument Air
Would Render Control Room Chillers Inoperable

The Licensee Event Report for this occurrence is attached. In the report, we made no new NRC commitments.

Please contact us if you require additional information related to this event.

Michael D Wadley
Plant Manager
Prairie Island Nuclear Generating Plant

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

Attachment

310040

9511010405 951027
PDR ADOCK 05000282
S PDR

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Prairie Island Nuclear Generating Plant U1	DOCKET NUMBER (2) 05000 282	PAGE (3) 1 OF 3
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TITLE (4) Determination That Loss of Instrument Air Would Render Control Room Chillers Inoperable

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 NAME	DOCKET NUMBER
9	27	95	95	-- 13 --	00	10	27	95	Prairie Island U2	05000 306
									FACILITY NAME	DOCKET NUMBER
										05000

OPERATING MODE (9) N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)									
POWER LEVEL (10) 100	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)						
	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)						
	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	OTHER						
	<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	(Specify in Abstract below and in Text, NRC Form 366A)						
	<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)							
	<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)							

LICENSEE CONTACT FOR THIS LER (12)

NAME Arne A Hunstad	TELEPHONE NUMBER (Include Area Code) 612-388-1121
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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).	<input checked="" type="checkbox"/>	NO					

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

Prairie Island has been performing an engineering self-assessment in connection with a Service Water System Operational Performance Inspection. During review of the effects of the loss of instrument air and the resultant plant response, it was determined that the control room chilled water system would not function without instrument air. With the chilled water system not functional, the temperature in the control room and relay room would exceed equipment qualification temperatures in approximately 30 minutes unless operator action was taken.

On September 27, the plant Operations Committee reviewed the information at hand and determined that the event is reportable.

LICENSEE EVENT REPORT (LER)
* TEXT CONTINUATION

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Prairie Island Unit 1	05000 282	95	-- 13 --	00	2 OF 3

TEXT (if more space is required, use additional copies of NRC Form 366A) (17)

EVENT DESCRIPTION

Prairie Island has been performing an engineering self-assessment in connection with a Service Water System Operational Performance Inspection. During review of the effects of the loss of instrument air and the resultant plant response, it was determined that the control room chilled water system would not function without instrument air. With the chilled water system not functional, the temperature in the control room and relay room would exceed equipment qualification temperatures in approximately 30 minutes unless operator action was taken.

On September 27, the plant Operations Committee reviewed the information at hand and determined that the event is reportable.

CAUSE OF THE EVENT

Recent heatup analyses have been performed that show that some forced cooling is needed to maintain equipment operability.

Original plant design appears to have taken credit for instrument air availability after the onset of an event. Review of pre-operational testing provides evidence that the instrument air system was assumed to be operable since it is powered by the safeguards diesel generators. Pre-operational testing of the instrument air system demonstrated that all valves fail to their safe position, but did not consider the integrated plant response upon the loss of instrument air. Also, the need for the control room chilled water system to function as essential support equipment was just recently identified.

ANALYSIS OF THE EVENT

The event is reportable pursuant to 10CFR50.73(a)(2)(v).

Loss of instrument air causes the chiller condenser cooling water control valves to fail closed, stopping forced heat removal from the condenser. When loss of condenser vacuum is then sensed, the chiller would trip. Heatup analyses show that chiller operation is needed to maintain long-term equipment operability. The analyses contain a number of conservatisms which tend to over-predict the heatup rate of the rooms. Elimination of some of the conservatisms indicates that operators have ample time to recover instrument air or bottled air to the chilled water system.

The plant instrument air compressors are powered by safeguards diesel generators, with each of the 3 compressors powered by different diesel generators. One of the 3 compressors is adequate to supply the total instrument air demand during the accident. The air compressors, though non-safety related, have proven to be very reliable over the life of the plant.

This event did not affect public health and safety.

LICENSEE EVENT REPORT (LER)
* TEXT CONTINUATION

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Prairie Island Unit 1	05000 282	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3 OF 3
		95	-- 13 --	00	

TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

CORRECTIVE ACTION

Administrative procedures have been produced to require the control room chilled water system to be treated as part of the control room air treatment system, Technical Specification 3.13. System preventive and corrective maintenance activities will now require entry into the Technical Specifications Limiting Conditions for Operation.

System operating procedures have been revised, and backup air supplies have been pre-staged, to allow prompt restoration of the control room chilled water system.

Operators have been trained on the new procedures.

FAILED COMPONENT IDENTIFICATION

None.

PREVIOUS SIMILAR EVENTS

One previous similar event was reported as Unit 1 LER 95-009.