NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO 3150-0104
EXPIRES 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Prairie Island Unit 1	0 5 0 0 0 2 8 2	1 OF 0 4

TITLE (4)
Auto Start of Diesel-Driven Cooling Water Pumps

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)
0 4	2 1	8 8	8 8	— 0 0 2	— 0 0	0 5	2 3	8 8	Prairie Island Unit 2	0 5 0 0 0 3 0 6
										0 5 0 0 0

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)			
POWER LEVEL (10)	1 0 0	20.402(b)	20.405(c)	X 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)	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
A A Hunstad Prairie Island Nuclear Generating Plant	AREA CODE 6 1 2 — 3 8 8 - 1 1 2 1

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
X YES (If yes, complete EXPECTED SUBMISSION DATE)	NO		0 7	2 9	8 8

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

On April 21, 1988, both units were operating at 100% power. Motor-driven cooling water pumps No. 11, 21 and 121 were running, supplying plant cooling water needs. Operations personnel noticed that the casing of No. 11 pump seemed warmer than normal, so they proceeded to remove No. 121 pump from service in order to increase flow through No. 11 pump. When No. 121 pump was shut down, both Nos. 12 and 22 diesel-driven cooling water pumps started automatically when low cooling water header pressure was sensed. This is a non-ESF actuation of ESF equipment. Refer to the attached figure.

Investigators quickly determined that No. 11 pump had lost prime and was not pumping. No. 11 pump was then stopped. Pump packing was adjusted, the eductor trap was replaced, and eductor vacuum was increased. (At this point in the event, No. 121 pump was restarted and the diesel-driven pumps were shut down.) The pump suction bay was inspected; cleaning of the screenhouse trash rack was begun. Inspection of the eductor piping sight glass showed that No. 11 pump had regained prime, so it was started and it ran normally.

The event is reportable under 10CFR50.73.(a)(2)(iv). There was no effect on public health and safety since the systems operated as expected. Tech Spec 3.3.D was met at all times.

Special instructions were issued for operation of the eductor system and for checking for proper operation of the motor-driven cooling water pumps.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Prairie Island Unit 1	0 5 0 0 0 2 8 2	8 8	— 0 0 2	— 0 0	0 2 OF 0 4

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

EVENT DESCRIPTION

On April 21, 1988, both units were operating at 100% power. Motor-driven cooling water pumps No. 11, 21 and 121 were running, supplying plant cooling water needs. Operations personnel noticed that the casing of No. 11 pump seemed warmer than normal, so they proceeded to remove No. 121 pump from service in order to increase flow through No. 11 pump.

When No. 121 pump was shut down, both Nos. 12 and 22 diesel-driven cooling water pumps started automatically when low cooling water header pressure was sensed. This is a non-ESF actuation of ESF equipment.

Investigators quickly determined that No. 11 pump had lost prime and was not pumping. No. 11 pump was then stopped. Pump packing was adjusted, the eductor pump was replaced, and eductor vacuum was increased. (At this point in the event, No. 121 pump was restarted and the diesel-driven pumps were shut down.) The pump suction bay was inspected; cleaning of the screenhouse trash rack was begun. Inspection of the eductor piping sight glass showed that No. 11 pump had regained prime, so it was started and it ran normally.

CAUSE OF THE EVENT

Cause of the event is not known at this time, though loss of prime of No. 11 Cooling Water Pump was most likely caused by excessive seal leakage.

There was a report that the pump suction bay level was lower than normal, presumably due to trash rack plugging, but this has not been substantiated. No. 11 pump would have tripped automatically on low bay level before available NPSH decreased enough to cause loss of suction.

ANALYSIS OF THE EVENT

The event is reportable under 10CFR50.73.(a)(2)(iv). There was no effect on public health and safety since the systems operated as expected. Tech Spec 3.3.D was met at all times.

The event occurred when operations personnel removed No. 121 Cooling Water pump from service without recognizing that No. 11 Cooling Water Pump was not pumping. Discharge pressure indicators were checked prior to stopping No. 121 pump and they appeared to be satisfactory. The discharge pressure gauge for No. 11 pump is located between two check valves on the discharge piping; seat leakage through the downstream check valve apparently caused the gauge to indicate cooling water header pressure even though No. 11 pump was not pumping.

Trash rack plugging would not affect diesel cooling water pump operation since water is supplied through a safeguards pipe directly from the river.

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Prairie Island Unit 1	0 5 0 0 0 2 8 2	8 8	— 0 0 2	— 0 0	0 3 OF 0 4

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

CORRECTIVE ACTION

Pump packing was adjusted, the eductor trap was replaced, and eductor vacuum was increased.

Divers were brought in to inspect the trash racks below the water line. They found a buildup of twigs, dead fish and debris wedged between the rack bars where the trash rake cannot reach it. Also there appears to be a significant buildup of corrosion products and aquatic growth on the bars. Work is underway to remove all the debris and deposits from the trash racks.

The discharge pressure gauge for No. 11 pump will be moved so that it is upstream of the first discharge check valve to give a more reliable indication of pump discharge pressure.

Special instructions were issued for operation of the eductor system for checking for proper operation of the motor-driven cooling water pumps.

PREVIOUS SIMILAR EVENTS

No. 11 Cooling Water Pump is a Worthington type 16-LN 28 centrifugal pump.

A similar event (cooling water pump loss of prime) was reported as Unit 1 LER 87-008.

NRC Form 366A
(9-83)

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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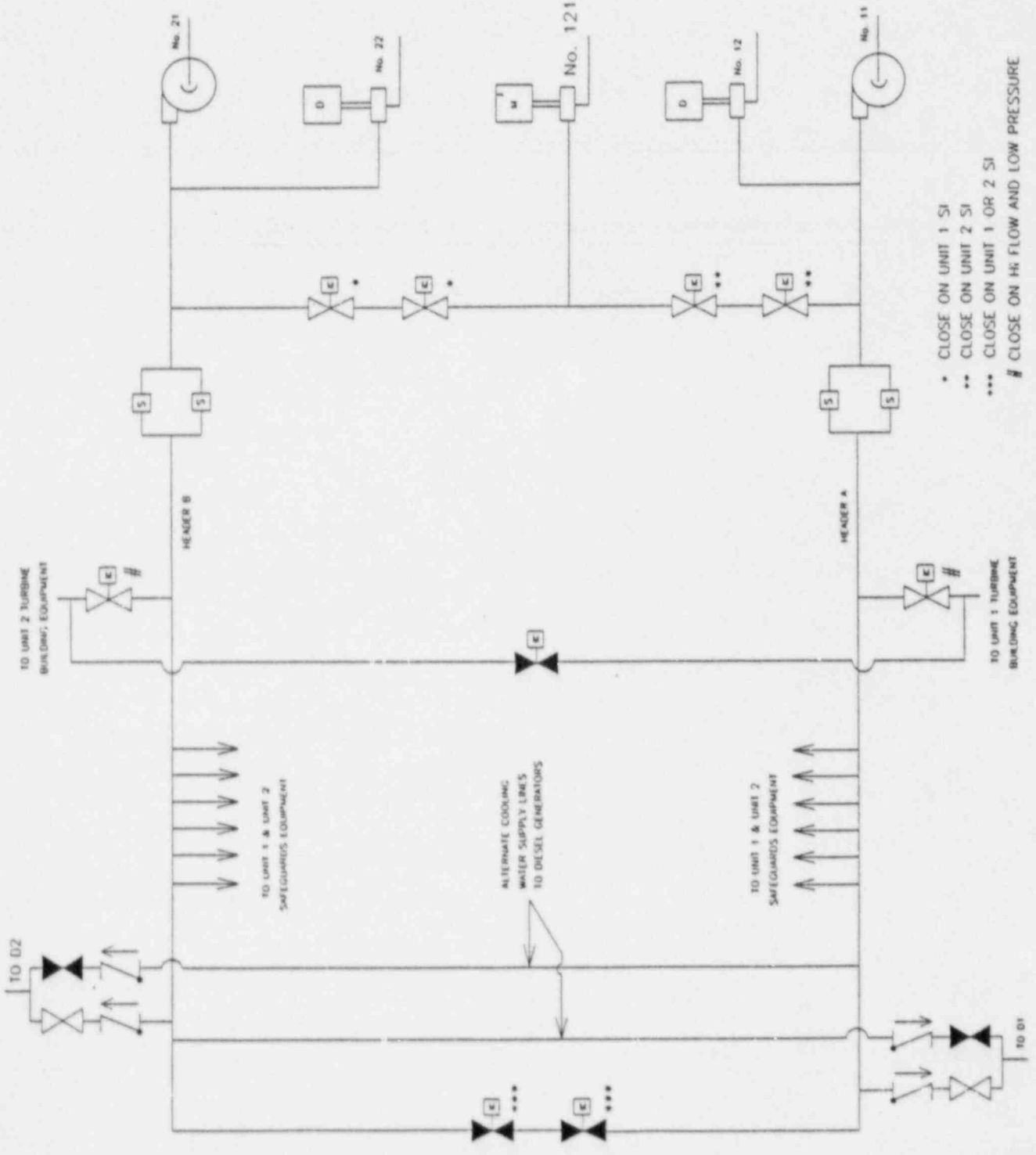
Prairie Island Unit 1	0 5 0 0 0 2 8 2	8 8	— 0 0 2	— 0 0	0 4 OF 0 4

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



Prairie Island Cooling Water System

Northern States Power Company

414 Nicollet Mall
Minneapolis, Minnesota 55401
Telephone (612) 330-5500

May 23, 1988

10 CFR Part 50
Section 50.73

Director of Nuclear Reactor Regulation
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

Auto Start of Diesel-Driven Cooling Water Pumps (LER 1-88-02)

The Licensee Event Report for this occurrence is attached. This event was reported by telephone in accordance with 10 CFR Part 50, Section 50.72 on April 21, 1988.

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

David Musolf
Manager - Nuclear Support Services

c: Regional Administrator - III, NRC
Sr Resident Inspector, NRC
NRR Project Manager, NRC
MPCA
Attn: Dr J W Ferman

Attachment

IE22
1/1