



Prairie Island Nuclear Generating Plant
1717 Wakonade Drive East
Welch, MN 55089

FEB 15 2017

L-PI-17-003
10 CFR 50.73

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Prairie Island Nuclear Generating Plant, Units 1 and 2
Docket Nos. 50-282 and 50-306
Renewed Facility Operating License Nos. DPR-42 and DPR-60

Licensee Event Report 50-282/2016-006-00, 121 Motor Driven Cooling Water Pump Auto Start

Northern States Power Company, a Minnesota corporation, doing business as Xcel Energy (hereafter "NSPM"), encloses Licensee Event Report (LER) 50-282/2016-006-00, 121 Motor Driven Cooling Water Pump Auto Start.

If there is any question or if any additional information is needed, please contact Frank Sienczak, at 651-267-1740.

Summary of Commitments

This letter contains no new commitments and no changes to existing commitments

A handwritten signature in black ink, appearing to read 'Scott Northard'.

Scott Northard
Site Vice President, Prairie Island Nuclear Generating Plant
Northern States Power Company – Minnesota

Enclosures:

cc: Regional Administrator, Region III, USNRC
Project Manager, Prairie Island Nuclear Generating Plant, USNRC
Resident Inspector, Prairie Island Nuclear Generating Plant, USNRC
Department of Commerce, State of Minnesota

ENCLOSURE 1

LICENSEE EVENT REPORT 50-282/2016-006-00

4 Pages Follow



LICENSEE EVENT REPORT (LER)
(See Page 2 for required number of digits/characters for each block)

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. FACILITY NAME Prairie Island Nuclear Generating Plant	2. DOCKET NUMBER 05000-282	3. PAGE 1 OF 4
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4. TITLE
121 Motor Driven Cooling Water Pump Auto Start

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
12	18	2016	2016	- 006	- 00	2	15	2017	Prairie Island Unit 2	05000-306
									FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)			
Unit 1 Mode 1 Unit 2 Mode 1	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
10. POWER LEVEL Unit 1 100% Unit 2 100%	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> 73.77(a)(1)
	<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	<input type="checkbox"/> 73.77(a)(2)(i)
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> 73.77(a)(2)(ii)
			<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> OTHER Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

LICENSEE CONTACT Frank Sienczak, Senior Licensing Engineer	TELEPHONE NUMER (Include Area Code) 651-267-1740
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13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
B	FK	BKR	ASEA	Yes					

14. SUPPLEMENTAL REPORT EXPECTED <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR

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

On December 18, 2016, at 0818 CDT, the Prairie Island Nuclear Generating Plant (PINGP) had a fire in the PINGP Switch Yard due to 8H8 Breaker-CT (Current Transformer) catastrophic failure. During the event, 121 Motor Driven Cooling Water Pump (MDCLP) auto-started on low header pressure (80 psi) as designed, and supplied load to the Cooling Water (CL) Header to increase header pressure. This event is reportable under 10 CFR 50.73(a)(2)(iv)(A) as an event that resulted in automatic actuation of an emergency service water system.

The cause of the 121 MDCLP auto-start was a low-pressure transient in the cooling water pump discharge header that was caused by the trip of the Containment & Auxiliary Building Chiller. When the chiller tripped, Unit 2 Containment Fan Coil units automatically swapped to cooling water. This additional load on the CL system, which caused system pressure to drop below 80 psi. The health and safety of the public was not at risk.



**LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET**

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Prairie Island Nuclear Generating Plant	05000-282	2016	006	00

NARRATIVE

DESCRIPTION OF EVENT

On December 18, 2016, at 0818 CDT, the Prairie Island Nuclear Generating Plant (PINGP) had a fire in the PINGP Switch Yard due to 8H8 Breaker-CT (Current Transformer) catastrophic failure. As the result of the 8H8 breaker fire, adjacent breakers 8H9, 8H7 and incoming lines from North Rochester (NRH) and Red Rock 2 (RRK2) were tripped and isolated from Bus 1 and Bus 2. Approximately 6 sec after the 8H8 CT catastrophic failure, automatic reclosing action to close the 8H7 breaker was initiated to place Red Rock 2 in service but failed. Approximately 15 sec after the 8H8 CT catastrophic failure, automatic reclosing action to close the 8H9 breaker was initiated to place North Rochester in service, which resulted in Bus 2 lock out (delay energized) due to relay 87B2S/345kV actuation. It was identified that this was a relay mis-operation.

At the time of the event, the non-safety related 11 Cooling Water (CL) pump¹ was running to supply load to the CL header. Low CL header pressure was caused by a trip of the Containment & Aux Building Chiller (ZX) System. The trip of the ZX system was caused by the electrical transient. The Containment Fan Coil Units (CFCU's) can be cooled by either ZX or by the safety related CL source. At the time of this event, the Unit 1 CFCU's were aligned to the CL system for cooling. The Unit 2 CFCU's were aligned to the ZX system. When the ZX Chiller tripped, the Unit 2 CFCU's lost ZX flow, and automatically swapped to the safety related cooling of the CL system, as designed. This caused an increased demand on the CL system, which caused the 121 MDCLP to auto-start on low header pressure (at 80 psi) as designed.

EVENT ANALYSIS

The PINGP CL System² is a shared system for Units 1 and 2 and provides a heat sink for the removal of process and operational heat from safety-related components during a Design Basis Accident or transient. During normal operation and shutdown, the CL System also provides this function for various safety-related and nonsafety-related components.

Five CL pumps are connected to a common pump discharge header that directs CL flow into two separate headers: three motor-driven pumps and two diesel-driven pumps. 121 MDCLP can function as a safeguards replacement when a diesel driven pump is taken out of service. In this configuration, the pump is aligned manually to the appropriate train of safeguards power and motor-operated valves are administratively disabled in accordance with technical specifications.

SAFETY SIGNIFICANCE

There was no radiological, environmental, or industrial impact associated with the 121 MDCLP auto-start, and the health and safety of the public were not affected. The auto-start of the 121 Motor Driven Cooling Water Pump did not challenge nuclear safety as all plant systems responded as designed; therefore, this event does not represent a safety system functional failure for Unit 1 or Unit 2.

¹IEEE Component Code - P

²EIIS System Code - BI



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CAUSE

The cause of the 121 MDCLP auto-start was a low-pressure transient in the cooling water pump discharge header was caused by the trip of the ZX Chiller and the additional load on the CL system that reduced CL header pressure to the 121 MDCLP auto-start setpoint.

CORRECTIVE ACTION COMPLETED

When the ZX Chiller tripped, the Unit 2 CFCU's lost ZX flow, and automatically swapped to the safety related cooling of the CL system, as designed. Since the system operated as expected, thus there are no corrective actions.

PREVIOUS SIMILAR OCCURRENCES

LER 1-09-02, Unplanned Safety Related Actuation of 121 Cooling Water Pump (Agencywide Documents Access and Management System (ADAMS) Accession Number ML091390396). On 3/19/2009, 121 MDCLP auto-started when 12 DDCLP was tripped in accordance with procedure resulting in a transient of the cooling water system pressure. The momentary drop in pressure was large enough to auto-start the 121 MDCLP while it was aligned for safeguards service.

LER 50-282/2011-001-02, Unplanned Actuation of 121 Motor Driven Cooling Water Pump, Supplement 2 (ADAMS Access Number ML 112840145). On 12/23/2010, the 121 MDCLP auto-started due to low header pressure. This low pressure condition was due to the failure of a header gasket on a non-safeguards chiller. The gasket failure was due to an over-torque condition, gasket material, and the conditions under which the chiller was operating at the time of the failure. The 121 MDCLP was not aligned as a safeguards replacement pump and auto-started. The actuation of the 121 MDCLP was determined to be reportable under 10 CFR 50.73(a)(2)(iv)(A). Corrective actions to resolve the issue included performing a Cooling Water System review to determine methods and any single point vulnerabilities that can be performed to minimize the potential for auto-starts of a cooling water pump. Operating procedures were evaluated to determine if procedural or operation period changes can be made to reduce the likelihood of auto-starting a Cooling Water Pump.

LER 50-282/2012-002-00, Unplanned Actuation of 121 Motor Driven Cooling Water Pump (ADAMS Accession Number ML 12152A189). On 4/2/2012, while PINGP Unit 1 was operating at 100% power, 121 MDCLP auto-started while shutting down 22 DDCLP, this caused a low pressure condition in the header and the auto-start of the pump. The corrective action was to revise operating procedure C35 to ensure two MDCLPs are running prior to stopping the DDCLP.

LER 50-282/2016-002-00, Listed System Actuation - Motor-Driven Cooling Water Pump Auto-Start (ADAMS Accession Number ML16085A181). On 1/29/2016, PINGP performed a planned overspeed post-maintenance test (PMT) of 22 Diesel Driven Cooling Water Pump in accordance with plant maintenance procedure. During the overspeed trip test PMT, 22 DDCLP tripped as expected and 121 MDCLP unexpectedly started automatically on low pressure in the cooling water pump discharge header.



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LER 50-282/2016-005-00, 121 Motor Driven Cooling Water Pump Auto Started (ADAMS Accession Number ML16281A208). On 8/21/2016, PINGP 2RY Transformer locked out. 121 Motor Driven Cooling Water Pump (MDCLP) stopped due to loss of power and then automatically restarted when sequenced by the load sequencer. The pump auto started on low pressure in the cooling water pump discharge header.