



May 30, 2012

L-PI-12-035  
10 CFR 50.73

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

Prairie Island Nuclear Generating Plant Unit 1  
Docket: 50-282  
Renewed License No. DPR-42

LER 50-282/2012-002-00, Unplanned Actuation of 121 Motor Driven Cooling Water Pump

Northern States Power Company, a Minnesota corporation (hereafter NSPM), doing business as Xcel Energy, herewith encloses Licensee Event Report (LER) 50-282/2012-002-00.

On April 2, 2012, while Prairie Island Nuclear Generating Plant (PINGP) Unit 1 was operating at 100% power, 121 Motor Driven Cooling Water Pump (MDCLP) auto started. The 121 MDCLP auto started while shutting down 22 Diesel Driven Cooling Water Pump (DDCLP).

Five cooling water (CL) pumps are connected to a common pump discharge header that directs CL flow into two separate headers. There are three motor driven pumps (121 MDCLP, 11 CLP and 21 CLP) and two diesel driven pumps (12 DDCLP and 22 DDCLP). The Equipment Cause Evaluation (ECE) determined that when only one motor driven pump is supplying both CL headers while removing 12 or 22 DDCLP, the momentary drop in header pressure can auto start 121 MDCLP.

Summary of Commitments

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

Kevin Davison  
Director, Site Operations, Prairie Island Nuclear Generating Plant  
Northern States Power Company - Minnesota

Enclosure

cc: Administrator, Region III, USNRC  
Project Manager, PINGP, USNRC  
Resident Inspector, PINGP, USNRC  
Department of Commerce, State of Minnesota

**ENCLOSURE**

**LICENSEE EVENT REPORT 50-282/2012-002-00**

**3 Pages Follow**

**LICENSEE EVENT REPORT (LER)**

(See reverse 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 Records and FOIA/Privacy Service 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, (3150-0066), 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.

<b>1. FACILITY NAME</b> Prairie Island Nuclear Generating Plant Unit 1	<b>2. DOCKET NUMBER</b> 05000 282	<b>3. PAGE</b> 1 OF 3
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**4. TITLE**  
Unplanned Actuation of 121 Motor Driven Cooling Water Pump

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
04	02	2012	2012	002	00	05	30	2012	FACILITY NAME	DOCKET NUMBER

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

**12. LICENSEE CONTACT FOR THIS LER**

NAME Sam J. DiPasquale, P.E.	TELEPHONE NUMBER (Include Area Code) 651.388.1121 x7350
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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>14. SUPPLEMENTAL REPORT EXPECTED</b>	<b>15. EXPECTED SUBMISSION DATE</b>	MONTH	DAY	YEAR
<input type="radio"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE).	<input checked="" type="radio"/> NO			

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

On April 2, 2012, while Prairie Island Nuclear Generating Plant (PINGP) Unit 1 was operating at 100% power, 121 Motor Driven Cooling Water Pump (MDCLP) auto started. The 121 MDCLP auto started while shutting down 22 Diesel Driven Cooling Water Pump (DDCLP).

Five cooling water (CL) pumps are connected to a common pump discharge header that directs CL flow into two separate headers. There are three motor driven pumps (121 MDCLP, 11 CLP and 21 CLP) and two diesel driven pumps (12 DDCLP and 22 DDCLP). The Equipment Cause Evaluation (ECE) determined that when only one motor driven pump is supplying both CL headers while removing 12 or 22 DDCLP, the momentary drop in header pressure can auto start 121 MDCLP.

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**CONTINUATION SHEET**

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EVENT DESCRIPTION

On April 2, 2012, while Prairie Island Nuclear Generating Plant (PINGP) Unit 1 was operating at 100% power, Operations performed a post-maintenance test (PMT) of the 22 Diesel Driven Cooling Water Pump<sup>1</sup> (DDCLP) as part of a Work Order (WO) at approximately 02:24 CDT. However, because no work had been performed on the pump and the monthly surveillance procedure (SP) was not scheduled, 22 DDCLP was operated per Operations procedure C35, Cooling Water. The 121 Motor Driven Cooling Water Pump (MDCLP) auto started while shutting down 22 DDCLP even though 11 Cooling Water Pump (CLP) was running. The manual or automatic actuation of the CL system (equivalent to an emergency service water system) is reportable under 10 CFR 50.73(a)(2)(iv)(A).

EVENT ANALYSIS

At PINGP, the Cooling Water (CL) System<sup>2</sup> is a shared system common to both Units (1 and 2) that 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 non-safety related components.

Five CL pumps are connected to a common pump discharge header that directs CL flow into two separate headers. There are three motor driven pumps (121 MDCLP, 11 CLP and 21 CLP) and two diesel driven pumps (12 DDCLP and 22 DDCLP). The 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.

On April 2, 2012, 121 MDCLP was not aligned as a safeguards replacement pump. An autostart of 121 MDCLP occurred even though 11 CLP was running. Due to previous auto starts of 121 MDCLP, step 7.9.1.1 was added to SP 1106B (22 DIESEL COOLING WATER PUMP MONTHLY TEST), that states, "IF only one (1) motor driven cooling water pump is running, THEN start an additional motor driven cooling water pump per C35.

Procedure C35 was previously revised with a note that states an additional cooling water pump may be required. The additional step in SP1106B to require starting an additional pump prior to shutting down the 22 DDCLP provides more definitive guidance than C35 in this situation.

SAFETY SIGNIFICANCE

The 121 MDCLP and the two DDCLPs automatically start on low cooling water header pressure. The water header pressure setpoint that starts the 121 MDCLP is slightly higher to ensure that it will

<sup>1</sup> EIS Component Identifier: P

<sup>2</sup> EIS System Code: BI

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automatically start before the DDCLPs. For this event, the 121 MDCLP started on the low pressure signal as expected. The 121 MDCLP and other equipment operated as intended during the event, therefore, there were no radiological, environmental, or industrial impacts associated with this event and PINGP did not affect the health and safety of the public. This event 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.

CAUSE

The Equipment Cause Evaluation (ECE) determined that low pressure in the header was reached due to having only one pump in service at the time of removing 22 DDCLP. If only one motor driven pump is supplying both headers while removing 12 or 22 DDCLP, the momentary drop in header pressure can auto start 121 MDCLP.

CORRECTIVE ACTION

The C35 Operating Procedure guidance and instruction will be revised to align with the changes made to the Surveillance Procedures.

PREVIOUS SIMILAR EVENTS

LER 1-09-02 was submitted on May 18, 2009. This LER reported the automatic actuation of 121 MDCLP when it was aligned as a safeguards pump. The actuation occurred following planned maintenance of the 12 DDCLP. During post maintenance testing, 12 DDCLP was tripped per procedure. This resulted in a transient of the cooling water system pressure. The momentary drop in pressure was large enough to automatically start the 121 MDCLP while it was aligned for safeguards service.

LER 50-282/2011-001-02 was submitted on October 7, 2011. The LER reported that an auto start of the 121 Motor Driven Cooling Water Pump (MDCLP) when not aligned as a safeguards replacement pump is included in the list of systems in 10 CFR 50.73(a)(2)(iv)(B). As a result, an actuation of the 121 MDCLP on 12/23/2010 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.