



October 12, 2012

L-PI-12-094  
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 50-282/2012-005-00, Unit 1 Diesel Generators Inoperable Due To Exhaust Fire

Northern States Power Company, a Minnesota corporation (hereafter NSPM), doing business as Xcel Energy, herewith encloses preliminary Licensee Event Report (LER) 50-282/2012-005-00 for this occurrence.

Summary of Commitments

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

A handwritten signature in black ink, appearing to read 'Joel P. Sorensen'.

Joel P. Sorensen  
Acting Site Vice President, Prairie Island Nuclear Generating Plant  
Northern States Power Company - Minnesota

Enclosure

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

**ENCLOSURE**

**LICENSEE EVENT REPORT 50-282/2012-005-00**

4 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 4
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**4. TITLE**  
Unit 1 Diesel Generators Inoperable Due To Exhaust Fire

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
08	14	2012	2012	005	00	10	12	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 checked="" 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 checked="" 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 checked="" type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A					

**12. LICENSEE CONTACT FOR THIS LER**

<b>NAME</b> Frank Sienczak	<b>TELEPHONE NUMBER (Include Area Code)</b> 651.388.1121 x4125
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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
X	EK	DG	F010	Y					

<b>14. SUPPLEMENTAL REPORT EXPECTED</b>				<b>15. EXPECTED SUBMISSION DATE</b>		
<input checked="" type="radio"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE).		<input type="radio"/> NO		MONTH	DAY	YEAR
				11	5	2012

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

On August 13, 2012 at 1048 CDT, D1 Diesel Generator (DG) was declared inoperable due to a sustained flame on the control side turbocharger exhaust extension. D2 DG was run on August 14, 2012, to determine if a common cause failure was present. At 0312 CDT on August 14, 2012, D2 was declared inoperable due to an exhaust leak with a visible flame on the control side turbocharger exhaust extension. The flame on D2 DG was detected at the same location as the flame that rendered D1 inoperable. With both DGs inoperable, this required Unit 1 to be placed in Mode 3 (Hot Standby) within 6 hours and Mode 5 (Cold Shutdown) within 36 hours per Technical Specifications (TS) 3.8.1 Condition F. While shutting down the unit, there was an auto actuation of the Auxiliary Feedwater system.

Causal evaluations are in progress. The root cause and corrective actions have not been determined. This information will be submitted in a supplemental report following completion of the causal evaluations.

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

1. FACILITY NAME	2. DOCKET NUMBER	YEAR	6. LER NUMBER SEQUENTIAL NUMBER	REV NO	3. PAGE
Prairie Island Nuclear Generating Plant Unit 1	05000 282	2012	- 005	- 00	2 OF 4

EVENT DESCRIPTION

On August 13, 2012, Prairie Island Nuclear Generating Plant (PINGP) Unit 1 was operating at 100% power with electrical Bus 1R-YN [BU]<sup>3</sup> Out of Service (OOS) for preventive maintenance. [This bus provides power from 1RY [XFMR]<sup>4</sup> transformer to Bus 13 and 14 (secondary plant pumps and loads) when 1M transformer is not available while the main generator is off line.]

At 0939 CDT, a planned entry into Technical Specification (TS) 3.8.1 Condition B was made to perform a monthly D1 Diesel Generator Monthly Slow Start Surveillance Test. At 1048 CDT, a sustained flame was observed on the control side turbocharger exhaust extension. The flame did not last longer than 15 minutes and no damage to D1 was observed as a result of the flame. D1 was subsequently shutdown and declared inoperable. The unit remained in TS 3.8.1 Condition B 14 day Limiting Condition for Operation (LCO).

Subsequent investigation by maintenance determined that there appeared to be a gasket leak on the turbocharger exhaust extension. D1 was tagged out of service for repairs. Work was then initiated to replace the exhaust manifolds and turbocharger exhaust extension gaskets on both sides of the engine.

On August 14, 2012, at 0243 CDT, D2 Diesel Generator (DG)<sup>1</sup> was run to determine if a common cause failure was present. At 0312 CDT, D2 was also declared inoperable due to an exhaust leak with a visible flame on the control side turbocharger exhaust extension (the same location as the D1 exhaust leak). The fire did not last longer than 15 minutes and fire damage was limited to exhaust manifold insulation, D2 was not damaged.

Bus 1R-YN work was then expedited to restore it to a normal lineup. However, D1 repairs had not been completed and with both DG inoperable, Unit 1 was required to be placed in Mode 3 (Hot Standby) within 6 hours and Mode 5 (Cold Shutdown) within 36 hours per TS 3.8.1 Condition F.

Power was reduced to approximately 15% per operating procedure 1C1.4, "Unit 1 Power Operation". Due to the preventative maintenance on Bus 1R-YN, Bus 13 and 14 could not be transferred to 1R and would be lost when taking the generator offline in accordance with the Unit 1 Shutdown Procedure 1C1.3. The resultant loss of power to Bus 13 and 14 would result in a loss of all Condensate pumps and a subsequent loss of Main Feedwater. The abnormal operating procedure 1C1.4 AOP 1, "Rapid Power Reduction Unit 1", was entered which directed reducing generator output below 100 MWe and inserting a manual reactor trip. The LCO time limit expired prior to restoring either D1 or D2 and the unit was taken offline without 1R-YN power available to Bus 13 and 14. This resulted in a unit shutdown without all the normal non-safeguards power available to the secondary systems and an auto start of Auxiliary Feedwater. D2 was subsequently restored on August 14, 2012 at 1808 CDT, which negated the requirement to place U1 in Mode 5 within 36 hours.

<sup>1</sup> EII System Code DG

<sup>2</sup> EII System Code BA

<sup>3</sup> EII System Code BU

<sup>4</sup> EII System Code XFMR

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

1. FACILITY NAME	2. DOCKET NUMBER	YEAR	6. LER NUMBER SEQUENTIAL NUMBER	REV NO	3. PAGE
Prairie Island Nuclear Generating Plant Unit 1	05000 282	2012	- 005	- 00	3 OF 4

On August 14, 2012 at 1025 CDT, the decision was made to manually trip Unit 1 at 15% power and allow auto start of Auxiliary Feedwater (AFW)(BA)<sup>2</sup> for heat sink. This decision was based on the anticipated 1RY source to buses 13 and 14 would not be available after taking the unit offline. Unit shutdown procedure assumes that this power will be available and that the turbine generator can be taken offline and main feedwater can be transferred to AFW in a controlled manner.

EVENT ANALYSIS

Each DG, as a backup to the normal standby AC power supply, is capable of sequentially starting and supplying the power requirements of one of the redundant sets of engineered safety features for its reactor Unit. In addition, in the event of a station blackout (SBO) condition, each DG is capable of sequentially starting and supplying the power requirements of the hot shutdown (Mode 3) loads for its unit, as well as the essential loads of the blacked out unit, through the use of manual bus tiebreakers interconnecting the 4160V buses.

With a loss of both DGs, this condition is reportable per 10 CFR 50.73(a)(2)(v)(D), an event or condition that could have prevented the fulfillment of a safety function; 10 CFR 50.73(a)(2)(i)(A), the completion of any nuclear plant shutdown required by the plant's Technical Specifications; 10 CFR 50.73 (a)(2)(vii) any event where a single cause or condition caused at least one independent train or channel to become inoperable in multiple systems or two independent trains or channels to become inoperable in a single system designed to mitigate the consequences of an accident; 10 CFR 50.73 (a)(2)(iv)(A) any event or condition that resulted in manual or automatic actuation of any of the systems (10 CFR 50.73 (a)(2)(iv)(B)(6) PWR auxiliary feedwater).

SAFETY SIGNIFICANCE

This issue had no radiological, industrial, or environmental impact. Station management reported this event to the NRC on August 14, 2012, for TS shutdown based on both DGs being declared inoperable requiring a unit shutdown. There was a safety system functional failure in that both DGs were inoperable. Loss of both DGs represents a loss of redundancy in the availability of electrical power systems. However, during this time-frame off site power was available and capable of supplying power to the systems required to shutdown the reactor and decay heat removal. Based on the electrical lineup a valid automatic system actuation signal started the AFW system. The AFW system also serves as part of the Engineered Safety Features (ESF) Systems. The AFW System delivers high pressure water to the steam generators following an interruption of the main feedwater flow, maintaining the steam generators as the primary heat sink. Therefore, this event did not affect the health and safety of the public.

CAUSE

Causal evaluations are in progress and the final cause has not been determined. This will be submitted in the supplemental report following completion of the causal evaluations.

CORRECTIVE ACTION

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

1. FACILITY NAME	2. DOCKET NUMBER	6. LER NUMBER	3. PAGE
Prairie Island Nuclear Generating Plant Unit 1	05000 282	YEAR 2012 - SEQUENTIAL NUMBER 005 - REV NO 00	4 OF 4

Causal evaluations are in progress and the final cause has not been determined. This will be submitted in the supplemental report following completion of the causal evaluations.

PREVIOUS SIMILAR EVENTS

In March 2009, September 2011, and in April 2012 exhaust leaks had been identified on D1 DG.