



April 18, 2008

L-PI-08-013  
10 CFR 50.73

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

Prairie Island Nuclear Generating Plant Unit 2  
Docket 50-306  
License No. DPR-60

LER 2-07-02, Supplement 1, Emergency Diesel Generator Inoperable Longer than Allowed by Technical Specifications Due to Loose Switch

Reference: 1) LER 2-07-02, "Emergency Diesel Generator Inoperable Longer than Allowed by Technical Specifications Due to Loose Switch," dated December 7, 2007 (ADAMS Accession Number ML073410657)

Licensee Event Report (LER) 2-07-02, Supplement 1, is enclosed. The LER supplement describes the final cause evaluation conclusions and recommended corrective actions for the inoperable emergency diesel generator. This condition was previously reported on December 7, 2007, in Reference 1. Please contact us if you require additional information related to this event.

Summary of Commitments

This letter contains no new commitments and completes the existing commitment from Reference 1 to supplement the LER.

Michael D. Wadley  
Site Vice President, Prairie Island Nuclear Generating Plant  
Nuclear Management Company, LLC

Enclosure

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

**ENCLOSURE**

**LICENSEE EVENT REPORT 2-07-02  
SUPPLEMENT 1**

4 pages follow

<b>NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION</b> (6-2004)	<b>APPROVED BY OMB NO. 3150-0104</b> <span style="float: right;"><b>EXPIRES 6-30-2007</b></span>  Estimated burden per response to comply with this mandatory collection request: 50 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 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@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>LICENSEE EVENT REPORT (LER)</b> (See reverse for required number of digits/characters for each block)	

<b>FACILITY NAME (1)</b> Prairie Island Nuclear Generating Plant Unit 2	<b>DOCKET NUMBER (2)</b> 05000 306	<b>PAGE (3)</b> 1 of 4
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**TITLE (4)**  
 Emergency Diesel Generator Inoperable Longer than Allowed by Technical Specifications Due to Loose Switch

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)		
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER	
10	08	07	07	-- 02 --	1	4	18	08	FACILITY NAME	DOCKET NUMBER	
<b>OPERATING MODE (9)</b>		1	<b>THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply) (11)</b>								
<b>POWER LEVEL (10)</b>		100	20.2201(b)			20.2203(a)(3)(ii)			50.73(a)(2)(ii)(B)	50.73(a)(2)(ix)(A)	
			20.2201(d)			20.2203(a)(4)			50.73(a)(2)(iii)	50.73(a)(2)(x)	
			20.2203(a)(1)			50.36(c)(1)(i)(A)			50.73(a)(2)(iv)(A)	73.71(a)(4)	
			20.2203(a)(2)(i)			50.36(c)(1)(ii)(A)			50.73(a)(2)(v)(A)	73.71(a)(5)	
			20.2203(a)(2)(ii)			50.36(c)(2)			50.73(a)(2)(v)(B)	<b>OTHER</b> Specify in Abstract below or in NRC Form 366A	
			20.2203(a)(2)(iii)			50.46(a)(3)(ii)			50.73(a)(2)(v)(C)		
			20.2203(a)(2)(iv)			50.73(a)(2)(i)(A)			50.73(a)(2)(v)(D)		
			20.2203(a)(2)(v)		X	50.73(a)(2)(i)(B)			50.73(a)(2)(vii)		
			20.2203(a)(2)(vi)			50.73(a)(2)(i)(C)			50.73(a)(2)(viii)(A)		
			20.2203(a)(3)(i)			50.73(a)(2)(ii)(A)			50.73(a)(2)(viii)(B)		

**LICENSEE CONTACT FOR THIS LER (12)**

<b>NAME</b> Jeff Kivi	<b>TELEPHONE NUMBER (Include Area Code)</b> 651.388.1121
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**COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)**

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)			
YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO			MONTH	DAY	YEAR

**ABSTRACT**

On October 8, 2007, the 22 Diesel Room Cooling Fan failed to start automatically upon the starting of the Train B Unit 2 emergency diesel generator (D6). The room cooling fan is required for D6 operability (to preclude eventual overheating of equipment in the room). The past operability evaluation concluded that D6 had been inoperable between approximately September 3, 2007 and the date of the event. The September 3 date was an estimate, since procedurally operators are directed to run the fan manually until the room cools off after a diesel run. The past operability evaluation concluded the switch was left in an intermediate position (neither in Auto nor in Run – the two normal positions of the switch). This was attributed to a loose switch assembly – upon shutting down the fan after the September D6 run, the operator turned the switch to the Auto position (the switch is a break before make) on the control board, but the entire switch assembly below the control panel rotated such that the switch was in an intermediate position (even though it appeared to be in the Auto position). The switch assembly was repaired and the room cooling fan and D6 were returned to operable status.

The cause of the fan failure was confirmed to be as described above following a cause evaluation. Planned corrective actions include instituting new preventive maintenance procedures to periodically check the switches and to install anti-rotation devices in the switches.

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

EVENT DESCRIPTION

On October 8, 2007, the 22 Diesel Room Cooling Fan<sup>1</sup> failed to start automatically upon the starting of the Train B Unit 2 emergency diesel generator (D6<sup>2</sup>). The room cooling fan is required for D6 operability (to preclude eventual overheating of equipment in the room). The past operability evaluation concluded that D6 had been inoperable between approximately September 3, 2007 and the date of the event. The September 3 date was an estimate, since procedurally operators are directed to run the fan manually until the room cools off after a diesel run. The past operability evaluation concluded a loose fan switch<sup>3</sup> caused the switch to be in an intermediate position (neither in the "Auto" nor in the "Run" position – the two normal positions of the switch), consequently, no contacts were made up preventing the automatic start circuit from working.

EVENT ANALYSIS

Per the guidance of NUREG 1022, equipment failure is assumed to occur at the time of discovery, unless firm evidence is available to demonstrate the equipment failed earlier. In this case, D6 room cooling fan (required to support D6) was inoperable and firm evidence exists that the fan was inoperable from the last time the switch was operated to the date of discovery - approximately September 3, 2007, to October 8, 2007. Technical Specification Limiting Condition of Operation (LCO) 3.8.1, Condition B has four required actions when D6 is inoperable, including restoring the inoperable diesel generator to operable status in 14 days. If LCO Condition B is not met, LCO Condition F requires the affected unit to be in Mode 3 in six hours and Mode 5 in 36 hours. In this case, firm evidence exists that D6 was inoperable for greater than 14 days without Unit 2 being shutdown as required by Technical Specifications. Thus, this event is reportable per 10 CFR 50.73(a)(2)(i)(B).

Impact on Safety System Functional Failure Performance Indicator

No loss of function occurred because the opposite train diesel generator (D5) was not rendered inoperable as a result of this condition (the room cooling fan for D5 was satisfactorily tested for common cause failure as required by Technical Specifications) and, although removed from service during the period of this condition, D5 was removed from service as part of a planned evolution for surveillance testing in accordance with an approved procedure. Consequently, this event is not reportable per 10CFR 50.73(a)(2)(v).

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

<sup>2</sup> EIS Component Identifier: DG

<sup>3</sup> EIS Component Identifier: HS

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

SAFETY SIGNIFICANCE

Except during required surveillance testing on September 17, 2007, the opposite train diesel generator (D5) remained operable. During the surveillance test, D5 powers its safeguards bus<sup>4</sup> (Bus 15), which is paralleled to the grid. D5 is considered inoperable while connected to the offsite grid due to potential single failures, which could result in a consequential failure of D5. However, D5 was inoperable for a short time (3 hours 7 minutes) and the surveillance procedure includes instructions to ensure proper response in case offsite power is lost while D5 is running and neither the potential single failure nor the consequential failure of D5 occurred. Therefore, this condition did not affect the health and safety of the public.

CAUSE

NMC conducted a cause evaluation to determine why the fan failed to start. The failure of the fan to start was caused by the switch being in a mid-position (not in "Auto" or in "Run"), which prevented the fan from operating on a D6 start signal as designed. The switch body had rotated in the control panel, which caused the switch electrical contacts to be out of alignment when compared to the position labels on the control panel. This resulted in none of the switch contacts actually being closed. The rotation of the switch body was due to the threaded collar that holds the switch in place becoming loose.

CORRECTIVE ACTION

Immediate:

1. The switch was positioned such that the "Auto" contacts were closed. This allowed the room cooling fan to start and operate as designed.
2. After the D6 engine run, the affected control switch housing was aligned properly and the other panel switches were checked for tightness.

Subsequent:

3. D5 and D6 control switches have been checked and tightened.

Planned:

4. A preventive maintenance activity will be established to periodically check D5 and D6 control panel switches.
5. Complete a design change to install anti-rotation devices on the D5 and D6 control panel switches.

<sup>4</sup> EIS Component Identifier: BU

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

PREVIOUS SIMILAR EVENTS

There have been no other reportable events in the past three years that were related to the cooling system that supports emergency diesel generators.