



November 8, 2010

L-PI-10-105
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
License No. DPR-42

LER 50-282/2010-005-00, Surveillance Required by Technical Specifications for the Emergency Diesel Generator Not Completed

Northern States Power Company, a Minnesota corporation (NSPM), doing business as Xcel Energy, herewith encloses Licensee Event Report (LER) 50-282/2010-005-00.

Prairie Island Nuclear Generating Plant (PINGP) Technical Specifications (TS) 3.8.1, "AC Sources – Operating" Surveillance Requirement (SR) 3.8.1.10(c) performs a test of the Emergency Diesel Generator (EDG) in conjunction with a safety injection (SI) signal. SR 3.8.1.10(c) verifies that on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated safety injection actuation signal that the EDG auto-starts from standby condition and energizes emergency loads in less than or equal to 60 seconds. The 12 Battery Charger is required to be energized during the Surveillance Procedure (SP) 1083 but was procedurally turned off.

PINGP meets the SR by satisfactorily completing SP 1083, UNIT 1, INTEGRATED SI TEST WITH A SIMULATED LOSS OF OFFSITE POWER normally before entering Mode 4 after a refueling outage. During the prior three years, SP 1083 was not performed with the 12 Battery Charger turned on as required by SR 3.8.1.10(c) during the 1R25 (March 2008) and the 1R26 (October, 2009) refueling outages. Therefore this condition is reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) because of a condition prohibited by TS.

Summary of Commitments

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

Mark A. Schimmel
Site Vice President, 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 50-282/2010-005-00

5 Pages Follow

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(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.

1. FACILITY NAME Prairie Island Nuclear Generating Plant Unit 1						2. DOCKET NUMBER 05000 282			3. PAGE 1 OF 5																																						
4. TITLE Surveillance Required by Technical Specifications for the Emergency Diesel Generator Not Completed																																															
5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED																																						
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9. OPERATING MODE Mode 1																																															
10. POWER LEVEL 99.5%																																															
11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)																																															
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NAME Sam J DiPasquale, P.E.						TELEPHONE NUMBER (Include Area Code) 651.388.1121 x7350																																									
13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT																																															
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX																																						
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)																																															
<p>Prairie Island Nuclear Generating Plant (PINGP) Technical Specifications (TS) 3.8.1, "AC Sources – Operating" Surveillance Requirement (SR) 3.8.1.10(c) performs a test of the Emergency Diesel Generator (EDG) in conjunction with a safety injection (SI) signal. SR 3.8.1.10(c) verifies that on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated safety injection actuation signal that the EDG auto-starts from standby condition and energizes emergency loads in less than or equal to 60 seconds. The 12 Battery Charger is required to be energized during the Surveillance Procedure (SP) 1083 but was procedurally turned off.</p> <p>PINGP meets the SR by satisfactorily completing SP 1083, UNIT 1, INTEGRATED SI TEST WITH A SIMULATED LOSS OF OFFSITE POWER normally before entering Mode 4 after a refueling outage. During the prior three years, SP 1083 was not performed with the 12 Battery Charger turned on as required by SR 3.8.1.10(c) during the 1R25 (March 2008) and the 1R26 (October, 2009) refueling outages. Therefore this condition is reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) because of a condition prohibited by TS.</p>																																															

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EVENT DESCRIPTION

For Prairie Island Nuclear Generating Plant (PINGP), Unit 1, the safeguards 125 VDC Electrical Power System¹ consists of two independent and redundant safety related DC electrical power subsystems (Train A and Train B). 125 VDC Subsystems 11 and 12 serve Unit 1 and each subsystem consists of one 125 VDC battery, battery charger, and associated distribution equipment.

The 125 VDC Systems supplies instrumentation, control, and motive power to safety related equipment. Redundant safety related equipment is divided between the two DC subsystems such that the loss of one DC subsystem does not affect redundant circuits.

There are three safeguards battery chargers, one per 125 VDC subsystem plus one portable battery charger. The battery chargers are supplied from the associated safeguards² 480 VAC System Motor Control Center (MCC). The battery chargers supply DC electrical power to the connected loads while maintaining the safeguards batteries in a fully charged condition during normal operation when AC charging power is available except as allowed by TS. The 12 Battery Charger is a load on the Unit 1 D2 Emergency Diesel Generator³ (EDG).

In 1997, during performance of the Integrated SI test for Unit 1, the 12 Battery Charger stopped running (due to undervoltage) after bus restoration, which coincides with step 4 of the load sequence scheme. With control room direction, the battery charger was successfully reset by opening and reclosing the AC input circuit breaker. The battery charger had been off for about four minutes. It was determined that, due to the D2 EDG loading configuration, only the 12 Battery Charger experienced a sufficiently low voltage transient during an Integrated SI test.

In 1999, the Surveillance Procedure (SP) was changed to turn off the 12 Battery Charger during the performance of SP 1083, Unit 1, INTEGRATED SI TEST WITH A SIMULATED LOSS OF OFFSITE POWER, (hereafter called Integrated SI test). During a review of the procedure that performs the Integrated SI Test, it was determined that 12 Battery Charger is manually turned off during pre-initiation and manually turned on during the equipment restoration section after load sequencing has occurred.

In 2002, License Amendment 158 changed the 3.8.1.10(c) Technical Specifications (TS) requirement to EDG "auto-starts from standby condition and energizes emergency loads in less than or equal to 60 seconds." Prior to License Amendment 158 for Unit 1 (DPR-42), the 4.6.A.3.b.2 TS requirement was to "Verify the diesels start on the auto-start signal and energize the emergency buses in one minute". Note that the requirement went from energizing emergency buses to energizing emergency loads.

In March 2008 (refueling outage 1R25) and October 2009 (refueling outage 1R26) Prairie Island Nuclear Generating Plant (PINGP) performed the Integrated SI test before entering Mode 4 after the

¹ EIS System Code: EJ

² EIS System Code: ED

³ EIS System Code: EK

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respective refueling outage per SP 1083. This included manually turning off 12 Battery Charger during pre-initiation and manually turning on 12 Battery Charger during the equipment restoration section after load sequencing had occurred.

On June 24, 2010, PINGP identified that the SP 1083 testing configuration did not properly test D2 EDG's ability to fulfill its required design functions following a Loss of Offsite Power coincident with a Loss of Coolant Accident. On September 9, 2010 with Unit 1 operating at 99.5% power, it was determined that a surveillance required by TS for the D2 EDG was not completed.

After further investigation, NSPM voluntarily entered TS 3.8.1.B on October 9, 2010, 1434 CDT for PINGP Unit 1, D2 EDG due to performance of SR 3.8.1.10(c) without including the 12 Battery Charger load. TS action statement 3.8.1.B requires the EDG to be restored to operable status within 14 days. When the required action of TS 3.8.1.B is not met, TS 3.1.8.F would require the plant to be in MODE 3 (reactor in HOT STANDBY) in 6 hours and to be in MODE 5 (COLD SHUTDOWN) within 36 hours.

On October 14, 2010, Northern States Power Company, a Minnesota corporation (NSPM), doing business as Xcel Energy that operates PINGP, submitted an "Exigent License Amendment Request to Modify Technical Specifications Surveillance Requirement 3.8.1.10 for Prairie Island Nuclear Generating Plant Unit 1" to allow the 12 Battery Charger to not be energized during SP 1083 testing until a modification is completed during the Unit 1 2011 refueling outage.

On October 22, 2010, the U.S. Nuclear Regulatory Commission issued Amendment No. 198 to PINGP, Unit 1, to add TS SR 3.8.1.10, Note 3 that states "12 Battery Charger not required to be energized in SR 3.8.1.10(c) until completion of Unit 1 2011 refueling outage", until a modification is completed during the Unit 1 2011 refueling outage.

EVENT ANALYSIS

Section 8.5 of the PINGP USAR contains a description of the Safeguards 125 VDC system. The safeguards 125 VDC Electrical Power System consists of two independent and redundant safety related DC electrical power subsystems (Train A and Train B). 125 VDC Subsystems 11 and 12 serve Unit 1 and each subsystem consists of one 125 VDC battery, battery charger, and associated distribution equipment.

The 125 VDC System supplies instrumentation, control, and motive power to safety related equipment. Redundant safety related equipment is divided between the two DC subsystems such that the loss of one DC subsystem does not affect redundant circuits.

The 12 Battery Charger was designed to remain connected to the bus upon Loss of Offsite Power (LOOP) and reenergize when the EDG repowers the bus during a SI and LOOP event. Turning off the 12 Battery Charger while performing SP 1083 (Integrated SI test) brought into question the

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operability of D2 EDG during a SI and LOOP event, and the adequacy of the surveillance procedure as written to meet SR 3.8.1.10 (verification of load sequencing every 24 months).

Other station battery chargers are not susceptible to this failure occurring during a SI since the input bus voltage on these battery chargers does not dip as low as the voltage supplied to 12 Battery Charger during performance of SP 1083. This has been demonstrated through repeated successful surveillance testing of the other EDGs with the associated battery charger's load included in the load sequence. Based on an evaluation performed in 1997, the Integrated SI test procedure was modified so that the 12 Battery Charger was manually turned off during pre-initiation and manually turned on during the equipment restoration section after load sequencing has occurred.

During the prior three years, the 12 Battery Charger has passed all TS 3.8.4 Surveillance tests. No indication of any degradation of the 12 Battery Charger was observed during testing or normal operation. However, during the prior three years, SP 1083 was not performed as required by TS SR 3.8.1.10(c) during the 1R25 (March 2008) and the 1R26 (October 2009) refueling outages. Therefore this condition is reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) because of a condition prohibited by TS.

Procedure changes were put in place in 1996 that provided a reasonable assurance that Operations would be able to diagnose and restart 12 Battery Charger (or the Portable Battery charger) long before the 12 Battery reached the minimum allowed bus voltage (105 VDC). Therefore, this condition did not represent a safety system functional failure.

SAFETY SIGNIFICANCE

This issue had no nuclear, radiological, industrial, or environmental impact. Procedures and processes have been in place to reset the 12 Battery Charger in the event of a undervoltage condition. Therefore, the DC electrical system would meet its required mission time and this condition did not affect the health and safety of the public.

CAUSE

It was determined that PINGP failed to adequately evaluate the impact and implication of revising SP 1083 Integrated SI Testing for Unit 1.

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CORRECTIVE ACTION

1. After discovery, PINGP voluntarily entered TS 3.8.1.B on October 9, 2010, 1434 CDT for PINGP Unit 1 EDG due to performance of SR 3.8.1.10(c) without including the 12 Battery Charger load.
2. An exigent License Amendment Request (LAR) was approved and implemented for SR 3.8.1.10 on October 22, 2010. The change allowed the 12 Battery Charger to not be energized during the SI testing until a modification is completed during the Unit 1 2011 refueling outage.
3. PINGP has stated that, "A modification will be installed during or prior to the Unit 1 2011 refueling outage to automatically shed the 12 Battery Charger from its normal bus and then automatically repower the charger from the bus within 60 seconds. Compliance with this SR will be demonstrated after implementation of the modification."

PREVIOUS SIMILAR EVENTS

A LER search was conducted and no similar LER events were identified in the last three years at PINGP involving revised SPs that allowed a design deficiency to be written into a SP.