May 14, 2008

L-PI-08-039
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 1-08-01, One Train of Auxiliary Feedwater (AFW) System Inoperable Longer than Allowed by Technical Specifications

Nuclear Management Company, LLC (NMC) herewith encloses Licensee Event Report (LER) 1-08-01. The LER describes a condition where one train of the AFW system was inoperable longer than allow by Technical Specifications. The condition also includes mode changes made with a train of the AFW system inoperable, which is also in violation of Technical Specifications. Please contact us if you require additional information related to this event.

Summary of Commitments

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

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
Department of Commerce, State of Minnesota

ENCLOSURE

LICENSEE EVENT REPORT 1-08-01

3 Pages Follow

NRC FORM 366 (9-2007) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES: 08/31/2010

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 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.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Prairie Island Nuclear Generating Plant Unit 1	05000282	1 of 3

4. TITLE
One Train of Auxiliary Feedwater Inoperable Longer than Allowed by Technical Specifications

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
3	15	2008	2008	– 01 –	0	05	14	2008	FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE: 3

10. POWER LEVEL: 0

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*

☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ OTHER
☐ 20.2203(a)(2)(vi)	☑ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

NAME	TELEPHONE NUMBER (Include Area Code)
Jeff Kivi	651.388.1121

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
A	BA	P	T147	Y					

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

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

On March 15, 2008, Prairie Island Nuclear Generating Plant (PINGP) Unit 1 went to Mode 3 at 1059. On March 23, 2008, with Unit 1 in Mode 1, Technical Specification (TS) 3.7.5 Condition B was entered to conduct surveillance testing on the 11 turbine-driven auxiliary feedwater pump (TDAFWP). The test was stopped before it could be completed due to high temperature on the outboard turbine bearing. An evaluation concluded the 11 TDAFWP had been inoperable since before the plant entered Mode 3. The 11 TDAFWP is required per TS 3.7.5 to be operable when the unit reaches Mode 3. TS 3.7.5 Condition B requires the inoperable auxiliary feedwater (AFW) train be restored to operable within 72 hours. If Condition B is not met, Condition C allows six hours to get to Mode 3 and 12 hours to get to Mode 4. Since Unit 1 was determined to be inoperable as a result of surveillance testing, and was in Mode 3 and was not brought to Mode 4 after 84 hours in Condition B as required by TS 3.7.5 Condition C, this event is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by TS. In addition, Unit 1 went from Mode 4 to Mode 1 with the 11 TDAFWP inoperable, which is also prohibited by TS.

After troubleshooting, the pump was restored to operable status by adjusting the insulation on the turbine and nearby hot components and then successfully passed the surveillance test.

EVENT DESCRIPTION

On March 15, 2008, Prairie Island Nuclear Generating Plant (PINGP) Unit 1 went to Mode 3 at 1059. On March 23, 2008, with Unit 1 in Mode 1, Technical Specification (TS) 3.7.5 Condition B was entered to conduct surveillance testing on the 11 turbine[1]-driven auxiliary feedwater[2] pump[3] (TDAFWP). The test was stopped before it could be completed due to high temperature on the outboard turbine bearing (the procedure requires turbine bearing temperature be maintained less than 220 degrees F). An evaluation concluded the 11 TDAFWP had been inoperable since before the plant entered Mode 3.

EVENT ANALYSIS

The 11 TDAFWP is required per TS 3.7.5 to be operable when the unit reaches Mode 3. TS 3.7.5 Condition B requires the inoperable auxiliary feedwater (AFW) train be restored to operable within 72 hours. If Condition B is not met, Condition C allows six hours to get to Mode 3 and 12 hours to get to Mode 4. Since Unit 1 was determined to be inoperable as a result of surveillance testing, and was in Mode 3 and was not brought to Mode 4 after 84 hours in Condition B as required by TS 3.7.5 Condition C, this event is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by TS. In addition, Unit 1 went from Mode 4 to Mode 3 to Mode 2 to Mode 1 with the 11 TDAFWP inoperable, which is also prohibited by TS.

Impact on Safety System Functional Failure Performance Indicator

No actual loss of function occurred as a result of this event. The redundant 12 motor[4]-driven AFW pump was operable while the 11 TDAFWP was inoperable. Thus, this event is not reportable per 10CFR 50.73(a)(2)(v).

SAFETY SIGNIFICANCE

This event only affected the 11 TDAFWP and the redundant AFW pump remained operable, so the safety function was not lost. Thus, this event did not affect the health and safety of the public and the safety significance of this event is considered minimal.

CAUSE

Troubleshooting concluded the high outboard turbine bearing temperature for 11 TDAFWP was caused by insulation[5] issues after the pump was reassembled during the refueling outage. High

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[1] EIIS Component Identifier: TRB
[2] EIIS System Identifier: BA
[3] EIIS Component Identifier: P
[4] EIIS Component Identifier: MO

radiant heat from surrounding components as well as the insulation configuration not allowing heat to dissipate from the turbine casing led to the high temperatures. In addition, the AFW pumps use bypass flow to cool the bearings. However, this bypass flow is not measurable, so to meet full-flow requirements for inservice testing, the cooling water is isolated for portions of the surveillance testing. This intermittent isolation of cooling water was determined to be a contributing cause.

CORRECTIVE ACTION

Once the high temperature lines and equipment in close proximity to the bearing housing were reinsulated, the outboard turbine bearing temperature was below the 220 degree action range. The 11 TDAFWP passed the surveillance following the insulation adjustment.

Additional corrective actions include:

1. Revise the surveillance procedures to reduce the time that cooling flow is isolated.
2. Develop and install an insulation package that provides protection to the bearing housing yet allows heat from the turbine to be dissipated to the atmosphere for the TDAFWPs.

PREVIOUS SIMILAR EVENTS

Review of Licensee Event Reports for Unit 1 and Unit 2 since 2005 found a similar event reported in Licensee Event Report 1-06-02 where Unit 1 was operated in a condition prohibited by TS due to an inoperable 11 TDAFWP.

[5] EIIS Component Identifier: ISL