



Nebraska Public Power District

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NLS2007025

April 5, 2007

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

Subject: Licensee Event Report No. 2007-001-00
Cooper Nuclear Station, NRC Docket 50-298, DPR-46

The purpose of this correspondence is to forward a Licensee Event Report.

Sincerely,

Michael J. Colomb
General Manager of Plant Operations

/jf

Enclosure

cc: Regional Administrator w/enclosure
USNRC - Region IV

Cooper Project Manager w/enclosure
USNRC - NRR Project Directorate IV-1

Senior Resident Inspector w/enclosure
USNRC - CNS

NPG Distribution w/enclosure

INPO Records Center w/enclosure

SORC Administrator w/enclosure

SRAB Administrator w/enclosure

CNS Records w/enclosure

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ATTACHMENT 3 LIST OF REGULATORY COMMITMENTS©

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Correspondence Number: NLS2007025

The following table identifies those actions committed to by Nebraska Public Power District (NPPD) in this document. Any other actions discussed in the submittal represent intended or planned actions by NPPD. They are described for information only and are not regulatory commitments. Please notify the Licensing Manager at Cooper Nuclear Station of any questions regarding this document or any associated regulatory commitments.

COMMITMENT	COMMITMENT NUMBER	COMMITTED DATE OR OUTAGE
None		

LICENSEE EVENT REPORT (LER)

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

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward 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 NEOF-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means 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 Cooper Nuclear Station	2. DOCKET NUMBER 05000298	3. PAGE 1 of 4
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4. TITLE
High Pressure Coolant Injection Inverter Circuit Failure Results in Loss of Safety Function

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
02	07	2007	2007	- 001	- 00	04	05	2007	FACILITY NAME	DOCKET NUMBER
										05000
										05000

9. OPERATING MODE 1	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 6: (Check all that apply)										
	<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)							
10. POWER LEVEL 100	<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 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 checked="" type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A								

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME Paul V. Fleming, Licensing Manager	TELEPHONE NUMBER (Include Area Code) (402) 825-2774
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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
B	BJ	INVT	T248	Y					

14. SUPPLEMENTAL REPORT EXPECTED <input checked="" type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE). <input type="checkbox"/> NO	15. EXPECTED SUBMISSION DATE MONTH: 05, DAY: 15, YEAR: 2007
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16. ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

Between 0430 and 0457 Central Standard Time (CST) on February 7, 2007 High Pressure Coolant Injection (HPCI) inverter circuit failure alarms were received intermittently indicating a loss of the inverter output. HPCI was in a standby status at the time of the alarms. The loss of inverter output was confirmed by the HPCI flow controller output lowering to approximately 30% and returning to 100% upon alarm reset. The power indicating light on the inverter was observed to go off on the last alarm, returning when the alarm was reset.

HPCI was declared inoperable at 0430 resulting in entry into Technical Specification Limiting Condition for Operation (LCO) 3.5.1 Condition C, HPCI System inoperable and 3.5.1 Condition D, HPCI System inoperable AND Condition A entered. Condition A was previously entered for Core Spray System Loop A being inoperable for planned maintenance. This was determined to be reportable under 10CFR50.72 and Event Notification 43151 was made. HPCI was declared operable at 1602 on February 7, 2007. The failed HPCI inverter was sent to a test laboratory for inspection and determination of the failure mechanism. A review of the results is in progress.

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

PLANT STATUS

Cooper Nuclear Station (CNS) was in Mode 1 at 100% steady state power at the time of the identified condition.

BACKGROUND

The High Pressure Coolant Injection (HPCI) System (EIS:BJ) provides protection to the core for the case of a small break in the reactor coolant pressure boundary which does not result in rapid depressurization of the reactor vessel. The HPCI System permits the nuclear plant to be shutdown while maintaining sufficient reactor vessel water inventory until the reactor vessel is depressurized. The HPCI System continues to operate until reactor vessel pressure is below the pressure at which Low Pressure Coolant Injection (EIS:BO) operation or Core Spray System (EIS:BM) operation can be used to maintain core cooling.

HPCI consists of a steam turbine assembly (EIS:TRB) driving a multi-stage booster and main pump assembly and system piping, valve, controls and instrumentation. The HPCI turbine is driven by steam from the reactor which is generated by decay and residual heat. The steam is extracted from main steam line "C" (EIS:SB) upstream of the main steam line isolation valves (EIS:ISV).

The HPCI inverter (HPCI-IVTR-119) (EIS:INVT) (Topaz model N250-GW-125-60-115) provides power to HPCI flow control components. The inverter receives 125 VDC input power and converts it to 115 VAC output power.

EVENT DESCRIPTION

On February 7, 2007 the plant was in mode 1 at 100% steady state power. HPCI inverter circuit failure alarms were received intermittently between 0430 and 0457 CST indicating a loss of the inverter output. HPCI was in a standby status at the time of the alarms. The loss of inverter output was confirmed by the HPCI flow controller output lowering to approximately 30% and returning to 100% upon alarm reset. The power indicating light on the inverter was observed to go off on the last alarm, returning when the alarm was reset.

HPCI was declared inoperable at 0430 resulting in entry into Technical Specification Limiting Condition for Operation (LCO) 3.5.1 Condition C, HPCI System inoperable and 3.5.1 Condition D, HPCI System inoperable AND Condition A entered. Condition A was previously entered for Core Spray System Loop A being inoperable for planned maintenance. An eight hour Non-Emergency report was made (Event Notification 43151). HPCI was declared operable at 1602 on February 7, 2007.

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

The inverter remained in service for eight hours with no additional alarms while a replacement work order was created. Troubleshooting included verifying that the inverter had power, performing thermography on the DC input fuses (EIIS:FU), and inspecting the associated wiring and wiring connections. The negative input fuse indicated an end-to-end temperature differential of eight degrees Fahrenheit. Voltage drop across the fuses was slightly higher than expected.

The inverter was replaced with a calibrated warehouse spare. The fuses were also replaced as a precaution. HPCI was subsequently declared operable. The removed inverter was energized on the bench for 24 hours with no abnormalities noted. A calibration was completed and all measurements were within specified tolerances.

The inverter was then sent to a third party vendor for failure analysis. The vendor identified a broken conductor at a soldered connection going to the driver sensing board. The intermittent nature of the inverter failure observed by the Control Room staff was attributed to the 90 VDC voltage potential which developed across the broken solder connection. This voltage potential apparently caused minor arcing and re-soldering. The vendor results of the failure analysis are being reviewed by plant personnel.

BASIS FOR REPORT

The HPCI System is a single train system. This condition is reportable in accordance with 10CFR50.73(a)(2)(v) as "any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to... (D) Mitigate the consequences of an accident."

SAFETY SIGNIFICANCE

The safety significance will be provided in a supplemental report after results of the laboratory testing have been reviewed.

CAUSE

The cause will be provided in a supplemental report after results of the laboratory testing have been reviewed.

CORRECTIVE ACTION

The corrective action will be provided in a supplemental report after results of the laboratory testing have been reviewed.

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

PREVIOUS EVENTS

There have been no reportable events identified in the past five years related to inverter failures due to corrosion or inadequately soldered connections.