



**Nebraska Public Power District**

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NLS2017001  
January 5, 2017

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

Subject: Licensee Event Report No. 2016-008-00  
Cooper Nuclear Station, Docket No. 50-298, DPR-46

Dear Sir or Madam:

The purpose of this correspondence is to forward Licensee Event Report 2016-008-00.

There are no new commitments contained in this letter.

Sincerely,

Kenneth Higginbotham  
Vice President Nuclear-  
Chief Nuclear Officer

/jo

Attachment: Licensee Event Report 2016-008-00

cc: Regional Administrator w/attachment USNRC - Region IV	NPG Distribution w/attachment
Cooper Project Manager w/attachment USNRC - NRR Plant Licensing Branch IV	INPO Records Center w/attachment via ICES entry
Senior Resident Inspector w/attachment USNRC - CNS	SORC Chairman w/attachment
SRAB Administrator w/attachment	CNS Records w/attachment

IEZZ  
NRR



**LICENSEE EVENT REPORT (LER)**

(See Page 2 for required number of digits/characters for each block)

(See NUREG-1022, R 3 for instruction and guidance for completing this form  
http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/)

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 FOIA, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollections.Resource@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 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> Cooper Nuclear Station	<b>2. DOCKET NUMBER</b> 05000298	<b>3. PAGE</b> 1 of 3
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**4. TITLE**  
Purchase and Installation of Incorrect Actuator Results in a Condition Prohibited 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
11	08	2016	2016	008	00	01	05	2017	FACILITY NAME	DOCKET
										05000
										05000

<b>9. OPERATING MODE</b>	<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §:</b> (Check all that apply)			
1	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(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)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
<b>10. POWER LEVEL</b> 010	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> 73.77(a)(1)
	<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)(D)	<input type="checkbox"/> 73.77(a)(2)(i)
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> 73.77(a)(2)(ii)
	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> OTHER	Specify in Abstract below or in NRC Form 366A	

<b>12. LICENSEE CONTACT FOR THIS LER</b>	
LICENSEE CONTACT Jim Shaw, Licensing Manager	TELEPHONE NUMBER (Include Area Code) (402) 825-2788

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT									
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	TO EPIX

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

**ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)**  
 On November 8, 2016 at 11:27 hours, Cooper Nuclear Station (CNS) declared Reactor Core Isolation Cooling (RCIC) inoperable for surveillance testing and entered Technical Specification (TS) Limiting Condition for Operation (LCO) 3.5.3, Condition A. Subsequently at 11:41 hours, RCIC was declared inoperable due to a water leak from the lube oiler cooler lower flange.

During investigation it was determined that valve RCIC-AOV-PCV23, which was replaced during Refueling Outage 29, was full open causing excessive cooling water pressure to the lube oil cooler. This valve regulates cooling water to the lube oil cooler. Initial examination revealed that the actuator was purchased with a closed travel stop instead of the required open travel stop. The work order was revised to fabricate and install an open travel stop. On November 10, 2016, following valve modification, RCIC passed surveillance testing, was declared operable, and TS LCO 3.5.3, Condition A, exited.

The root cause evaluation determined that the correct air operated valve was not purchased because the material master purchase order text and associated drawing didn't detail the requirement of an open travel stop.

To prevent recurrence, CNS will revise the material master purchase order text to state that the valve includes a travel stop in the open direction to limit valve travel. In addition, the drawing will be modified to show the correct travel stop with a note emphasizing the design function of the travel stop.

NRC FORM 366  
(11-2015)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104

EXPIRES: 10/31/2018

**LICENSEE EVENT REPORT (LER)**

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1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Cooper Nuclear Station	05000- 298	2016	- 008	- 00

**NARRATIVE****PLANT STATUS**

Cooper Nuclear Station (CNS) was in Mode 1, Power Operation, at approximately 10 percent power, at the time of the event.

**BACKGROUND**

The Reactor Core Isolation Cooling (RCIC) [EIIS:BN] system provides makeup water to the reactor pressure vessel (RPV) [EIIS:RPV] following an RPV isolation in order to prevent the release of radioactive materials to the environs as a result of inadequate core cooling.

The RCIC system consists of a steam driven turbine-pump unit [EIIS:TRB, P], piping, and valves [EIIS:V] to provide steam to the turbine, as well as piping and valves to transfer water from the suction sources to the core via the Feedwater [EIIS:SJ] system line, where the coolant is distributed within the RPV. The RCIC system pump supply is normally aligned to the Emergency Condensate Storage Tanks. The pump discharge is normally isolated and valve operation is required to align in either RPV injection mode or test return mode. Upon receipt of an initiation signal, the RCIC turbine accelerates to provide a specified pump flow. As the RCIC flow increases, the turbine control valve (EIIS:FCV) is automatically adjusted to maintain the required design flow.

RCIC is required to be operable during Modes 1, 2 and 3 with reactor steam dome pressure > 150 psig, since RCIC is the primary non-emergency core cooling system water source for core cooling when the RPV is isolated and pressurized.

RCIC-AOV-PCV23 is a 1" pressure controlled globe valve located on the RCIC pump discharge line to the RCIC lube oil cooler. This valve has an air operated actuator which regulates the pressure of the cooling water based on the output of its controller, RCIC-PC-23. The valve works as a pressure reducing orifice to maintain the pressure in the lube oil cooling line below 60 psig to prevent over pressurizing the cooling circuit. Upon a loss of air to the valve operator a spring within the actuator will force the valve open. The actuator includes a travel stop, which is designed to prevent over-pressurization of the cooling circuit by limiting the distance the valve can open.

**EVENT DESCRIPTION**

On November 8, 2016, at 11:27 hours, CNS Operators declared RCIC inoperable for surveillance testing and entered Technical Specification (TS) Limiting Condition for Operation (LCO) 3.5.3, Condition A. Subsequently at 11:41 hours, Operations declared RCIC inoperable due to a water leak from the lube oiler cooler lower flange.

During investigation it was determined that valve RCIC-AOV-PCV23, which was replaced during Refueling Outage 29, was full open causing excessive cooling water pressure to the lube oil cooler. Initial examination revealed that the actuator was supplied with a closed travel stop instead of the required open travel stop. This travel stop prevents over-pressurization of the cooling circuit by limiting the opening stroke distance of RCIC-AOV-PCV23. The purchase order for the replacement valve and actuator did not contain a part description stating a travel stop was required.

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(11-2015)

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		YEAR	SEQUENTIAL NUMBER	REV NO.
Cooper Nuclear Station	05000- 298	2016	- 008	- 00

**NARRATIVE**

The work order was revised to fabricate and install an open travel stop. On November 10, 2016, following valve modification, RCIC passed surveillance testing, was declared operable, and TS LCO 3.5.3, Condition A, was exited.

**BASIS FOR REPORT**

This event is reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) as any operation or condition which was prohibited by Technical Specifications, because RCIC was inoperable during the entry into the Mode of Applicability.

**SAFETY SIGNIFICANCE**

There were no actual safety consequences associated with this event. The potential safety consequences of this event were minimal due to the limited duration the condition existed and all Emergency Core Cooling Systems remained operable or available throughout the event. The RCIC system is designed to inject water into the reactor vessel during isolated conditions and is not considered an Emergency Core Cooling System. The total duration of inoperability, including the time prior to discovery of the condition was less than the 14 day Technical Specification Completion Time. During the time period of inoperability, Emergency Core Cooling Systems (High Pressure Coolant Injection, Automatic Depressurization System, Core Spray, and Low Pressure Coolant Injection) were operable or available and would have adequately responded to reactor vessel isolation and design basis events.

**CAUSE**

The root cause evaluation determined that the correct air operated valve was not purchased because the material master purchase order text and associated drawing didn't detail the requirement of an open travel stop.

**CORRECTIVE ACTIONS**

To prevent recurrence, CNS will revise the material master purchase order text to state that the valve includes a travel stop in the open direction to limit valve travel. In addition, the drawing will be modified to show the correct travel stop with a note emphasizing the design function of the travel stop.

**PREVIOUS EVENTS**

There have been no events reported in the past three years related to RCIC being declared inoperable.