



Nebraska Public Power District

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NLS2018030

May 8, 2018

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

Subject: Licensee Event Report No. 2018-001-00
Cooper Nuclear Station, Docket No. 50-298, DPR-46

Dear Sir or Madam:

The purpose of this correspondence is to forward Licensee Event Report 2018-001-00.

There are no new commitments contained in this letter.

Sincerely,

John Dent, Jr.
Vice President Nuclear-
Chief Nuclear Officer

/jo

Attachment: Licensee Event Report 2018-001-00

cc: Regional Administrator w/attachment
USNRC - Region IV

Cooper Project Manager w/attachment
USNRC - NRR Plant Licensing Branch IV

Senior Resident Inspector w/attachment
USNRC - CNS

SRAB Administrator w/attachment

NPG Distribution w/attachment

INPO Records Center w/attachment
via ICES entry

SORC Chairman w/attachment

CNS Records w/attachment

IE22
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 Information Services Branch (T-2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.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.

1. Facility Name Cooper Nuclear Station	2. Docket Number 05000298	3. Page 1 OF 3
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4. Title
Inadequate Packing on Motor Operated Valve Results in Unplanned High Pressure Coolant Injection Inoperability and a Loss of Safety Function

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
03	10	18	2018	- 001	- 00	05	08	18		05000
									Facility Name	Docket Number
										05000

9. Operating Mode 1	11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: (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)(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)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)						
10. Power Level 100	<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)						
	<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 checked="" type="checkbox"/> 50.73(a)(2)(v)(D)	<input type="checkbox"/> 73.77(a)(2)(ii)						
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> 73.77(a)(2)(iii)						
		<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> Other (Specify in Abstract below or in NRC Form 366A)							

12. Licensee Contact for this LER

Licensee Contact Jim Shaw	Telephone Number (Include Area Code) (402) 825-2788
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13. Complete One Line for each Component Failure Described in this Report

Cause	System	Component	Manufacturer	Reportable To ICES	Cause	System	Component	Manufacturer	Reportable To ICES
D	BJ	ISV	A391	Y					

14. Supplemental Report Expected <input type="checkbox"/> Yes (If yes, complete 15. Expected Submission Date) <input checked="" type="checkbox"/> No	15. Expected Submission Date	Month	Day	Year

Abstract (Limit to 1400 spaces, i.e., approximately 14 single-spaced typewritten lines)

On March 10, 2018, while returning High Pressure Coolant Injection (HPCI) and Augmented Off-Gas to service following planned maintenance, Cooper Nuclear Station (CNS) Operations personnel observed rising pressure in the drywell.

During the HPCI restoration, HPCI-MOV-MO15 was cycled and left open as part of the return to service process. Shortly thereafter, drywell temperature and pressure started to slowly rise. It was determined the most likely cause of the change in drywell parameters was due to the stroking of HPCI-MOV-MO15. A decision was made to close the valve to stop the leak, resulting in an unplanned entry into Technical Specification Limiting Condition for Operation 3.5.1, due to HPCI inoperability. Following valve closure, drywell temperature and pressure, along with the unidentified leakage rate, decreased. A decision was made to perform a normal plant shutdown to make repairs.

CNS entered Mode 3, Hot Shutdown, on March 11, 2018. New packing was installed on HPCI-MOV-MO15 and CNS returned to Mode 1, Power Operation, on March 17, 2018.

The cause of the packing leak was determined to be that in effort to preserve and maximize the margin for the stroking function, packing consolidation and torquing methods were altered which impacted packing sealing performance.

No safety consequences were associated with this condition.



**LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET**

(See NUREG-1022, R.3 for instruction and guidance for completing this form
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1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Cooper Nuclear Station	05000-298	2018	- 001	- 00

NARRATIVE

PLANT STATUS

Cooper Nuclear Station (CNS) was in Mode 1, Power Operations, 100 percent power, at the time of discovery.

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 a 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 [EIS:P] and system piping, valves, controls and instrumentation. The HPCI turbine is driven by steam from the reactor which is generated by decay and residual heat.

There are two normally open containment isolation valves in the main steam supply line to the turbine. One of these valves, HPCI-MOV-MO15 is located in the drywell. These containment isolation valves [EIS:ISV] automatically close upon receipt of a HPCI turbine steam line high flow signal, or a HPCI turbine steam supply low pressure signal, or high steam line space temperature.

EVENT DESCRIPTION

On March 10, 2018, while returning HPCI and Augmented Off-Gas to service following planned maintenance to repair a steam leak on an associated drain line, CNS entered abnormal procedure 2.4PC, "Primary Containment Control" due to rising pressure in the drywell.

During the HPCI restoration, HPCI-MOV-MO15 steam supply inboard isolation valve was cycled and left open as part of the return to service process. Shortly thereafter, drywell temperature and pressure started to slowly rise, causing entry into the abnormal procedure. Operations and Engineering personnel determined the most likely cause of the change in drywell parameters was due to the stroking of HPCI-MOV-MO15. A decision was made to close the valve to stop the leak, causing HPCI to be inoperable resulting in an unplanned entry into Technical Specification Limiting Condition for Operation 3.5.1 due to isolating the steam supply to HPCI. Following valve closure, drywell area temperatures and pressure, along with the unidentified leakage rate, decreased. A decision was made to perform a normal plant shutdown to make repairs.

CNS entered Mode 3, Hot Shutdown, on March 11, 2018. New packing was installed on HPCI-MOV-MO15 on March 15, 2018, and CNS returned to Mode 1, Power Operation, on March 17, 2018.



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Cooper Nuclear Station	05000-298	2018	- 001	- 00

BASIS FOR REPORT

This event is being reported per 10 CFR 50.73(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."

Event Notification 53253 was made at 13:54, March 10, 2018.

SAFETY SIGNIFICANCE

This is a safety system functional failure. There were no safety consequences of this failure since the plant shutdown to repair the problem long before any technical specification limits were exceeded. All plant systems responded as expected.

CAUSE

In effort to preserve and maximize the margin for the MOV stroking function, packing consolidation and torquing methods were altered which impacted packing sealing performance.

CORRECTIVE ACTIONS

Verified Reactor Core Isolation Cooling [EII:BN] was operable by administrative means concurrent with declaration of HPCI inoperable.

HPCI-MOV-MO-15 was repacked.

To prevent recurrence, station procedures, where the margin to packing performance has been allowed to decline, will be corrected.

PREVIOUS EVENTS

There have been no events reported in the last three years related to valve packing.