Nebraska Public Power District

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NLS2017051
December 15, 2017

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

Subject: Licensee Event Report No. 2017-001-01
Cooper Nuclear Station, Docket No. 50-298, DPR-46

Dear Sir or Madam:

The purpose of this correspondence is to forward Licensee Event Report 2017-001-01.

There are no new commitments contained in this letter.

Sincerely,

for John Dent 12/15/2017

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

/jo

Attachment: Licensee Event Report 2017-001-01

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

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NRC FORM 366 (04-2017) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 03/31/2020

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, NEOB-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.

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/)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Cooper Nuclear Station	05000298	1 of 4

4. TITLE

Residual Heat Removal Minimum Flow Valves Out of Position Results in Loss of Safety Function and 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 05000
02	05	17	2017 -	001 -	01	12	15	17	FACILITY NAME	DOCKET 05000

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)			
1	☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
	☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
	☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(ii)	☐ 50.73(a)(2)(ix)(A)
	☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
	☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
10. POWER LEVEL	☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☒ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
100	☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(C)	☐ 73.77(a)(1)
	☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(D)	☐ 73.77(a)(2)(i)
	☐ 20.2203(a)(2)(vi)	☒ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(vii)	☐ 73.77(a)(2)(ii)
		☐ 50.73(a)(2)(i)(C)	☐ OTHER Specify in Abstract below or in NRC Form 366A	

12. LICENSEE CONTACT FOR THIS LER

LICENSEE CONTACT	TELEPHONE NUMBER (Include Area Code)
Jim Shaw, Licensing Manager	(402) 825-2788

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	BO	V		Y						

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

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

On February 5, 2017, during a quarterly sealed valve log audit, Residual Heat Removal (RHR) Valves RHR-V-58 and RHR-V-60 were discovered sealed closed. Normal configuration for these valves is sealed opened. Consequently, Operations declared RHR pumps A and C Inoperable at 0756 hours and entered Technical Specifications (TS) Limiting Condition for Operation (LCO) 3.5.1 Condition A, LCO 3.6.1.9 Condition A, and LCO 3.6.2.3 Condition A.

Subsequently, the operating crew opened RHR-V-58 and RHR-V-60, independently verified the position of the valves and applied seals to the valves. As such, RHR pumps A and C were declared Operable at 1041 hours on February 5, 2017, and TS LCO 3.5.1 Condition A, LCO 3.6.1.9 Condition A, and LCO 3.6.2.3 Condition A were exited.

The root cause is Operations Department standards related to Operator Human Performance and Configuration Control are inadequate and do not meet industry expectations. Licensed and Non-Licensed Operators completed training focused on Standards and Expectations related to attention to detail and configuration control. To prevent recurrence, expectations will be established and institutionalized for Operations Leadership to reinforce consistent application of operator fundamentals and to identify and correct performance gaps for the operating crews.

This is a Safety System Functional Failure.

NARRATIVE

PLANT STATUS

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

BACKGROUND

The safety objective of the Residual Heat Removal (RHR) system [EIIS:BO] is to provide core cooling, in conjunction with other Emergency Core Cooling Systems, and to provide containment cooling as required during abnormal operational transients and postulated accidents. The RHR system consists of two heat exchangers [EIIS:HX], four main system pumps [EIIS:P] in two divisions, and associated piping, valves, controls and instrumentation.

The motor-operated minimum flow valves automatically provide the necessary flow through the pump in order to prevent pump overheating. The manual isolation valves for the motor-operated minimum flow valves, RHR-V-58 and RHR-V-60, are normally configured open and sealed.

RHR pumps A and C provide RHR Loop A safety functions associated with Low Pressure Cooling Injection (LPCI) and Containment Cooling. These pumps also provide RHR Loop A Shutdown Cooling (SDC) function during outage conditions.

EVENT DESCRIPTION

On September 29, 2016, during Refueling Outage 29 (RE29), RHR-V-58 and RHR-V-60 were closed and danger tagged in accordance with a clearance order to support the RHR Loop A Maintenance Window.

On October 7, 2016, the danger tags for RHR-V-58 and RHR-V-60 were released and the clearance order directed that both valves be restored to their normal configuration. The danger tags were removed and seals applied to the valves. However, the valves were not opened before placing the seals. Second verification incorrectly verified that the valves were sealed open, when they were sealed closed.

A quarterly sealed valve log audit was performed on November 29, 2016, and the seals were verified to be intact. The audit required only that the seals be verified, the audit did not require the valve configuration be checked.

On February 5, 2017, during a quarterly sealed valve log audit, it was discovered that RHR-V-58 and RHR-V-60 were sealed closed. Consequently, Operations declared RHR pumps A and C Inoperable at 0756 hours and entered Technical Specification (TS) Limiting Condition for Operation (LCO) 3.5.1 Condition A, LCO 3.6.1.9 Condition A, and LCO 3.6.2.3 Condition A.

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Subsequently, the operating crew opened RHR-V-58 and RHR-V-60, independently verified the position of the valves and applied seals to the valves. As such, RHR pumps A and C were declared Operable at 1041 hours on February 5, 2017, and TS LCO 3.5.1 Condition A, LCO 3.6.1.9 Condition A, and LCO 3.6.2.3 Condition A were exited.

BASIS FOR REPORT

With the minimum flow isolated since October 7, 2016, this is reportable as a condition prohibited by Technical Specifications per 10 CFR 50.73(a)(2)(i)(B) – 1) due to exceeding the Required Action Completion Time for the RHR subsystem out of service and 2) changing reactor Mode of operation during startup from RE29 with an RHR subsystem inoperable which is a violation of TS LCO 3.0.4. In addition, during the time frame of inoperability, Division 2 RHR had also been inoperable on various occasions resulting in both divisions of RHR being inoperable, creating a loss of safety function per 10 CFR 50.73(a)(2)(v)(B).

SAFETY SIGNIFICANCE

The actual safety significance of this condition is low. RHR Loop B remained available to provide LPCI and Containment Cooling functions for approximately 97% of the at power duration and no events or operations occurred requiring RHR pumps A or C to run dead-headed for an extended period of time. Additionally, the safety significance of this condition during outage conditions is low. The minimum flow line is isolated by procedure, with the minimum flow valve being tagged closed prior to RHR pump operation when placing SDC in service.

CAUSE

The root cause evaluation determined that Operations Department standards related to Operator Human Performance and Configuration Control are inadequate and do not meet industry expectations.

CORRECTIVE ACTIONS

Licensed and Non-Licensed Operators completed training focused on Standards and Expectations related to attention to detail and configuration control. To prevent recurrence, expectations will be established and institutionalized for Operations Leadership (i.e., Operations Manager, Assistant Operations Managers, and Shift Managers) to reinforce consistent application of operator fundamentals and to identify and correct performance gaps for the operating crews. This will be accomplished by performing focused Crew Assessments in accordance with station procedures; identifying performance gaps and determining actions required to correct those gaps; requiring review of the crew assessments at crew management review meetings; and requiring that crew management review meetings be conducted in accordance with station procedures.

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PREVIOUS EVENTS

03/14/17 – Condition Report written to document incorrectly installed seals on two service water valves (SW-V-105 and SW-V-124) that occurred in late February 2017.

01/30/17 – Fuse was installed incorrectly.

01/10/17 – Incorrect bulb installation caused light for Local Power Range Monitor downscale to remain on.

01/14/17 – Augmented Off-Gas +34 Glycol pump/compressor switches found in an incorrect position.

LER 2016-009-00 – On December 7, 2016, a Control Room Emergency Filtration System Fan was removed from service due to human error resulting in a loss of safety function.

12/02/16 – Setpoints verified on the Normal Range Kaman instead of the High Range Kaman.

11/21/16 – Incorrect log entry resulted in missed surveillance.

10/15/16 – Relay was found not reset.

10/03/16 – Control Rod Drive high cooling water differential pressure was noticed while making preparations to hang tags. Upon investigation, it was noticed that 75 Hydraulic Control Units (HCUs) were isolated, which left 62 in service for cooling. This is contrary to a precaution statement in a procedure which requires 70 HCUs to be in service.

09/30/16 – A CNS Operator and an Entergy Operator entered the steam tunnel to hang tags and inadvertently severed and extracted tubing being used for Local Leak Rate Testing.

09/28/16 – While performing rounds, the on watch non-licensed plant Operator adjusted air load pressure to the specifications in their logs, not per the procedure for the current plant condition. This caused Control Room indicators to show a lower Reactor Pressure Vessel level than actual.
LER 2014-001-00 – On January 6, 2014, a differential pressure transient occurred in the reactor building due to a non-licensed plant Operator inadvertently opening the wrong drain valve while hanging tags.