



Omaha Public Power District

444 South 16th Street Mall
Omaha, NE 68102-2247

LIC-12-0096

July 20, 2012

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Reference: Docket No. 50-285

Subject: Licensee Event Report 2012-007, Revision 0, for the Fort Calhoun Station

Please find attached Licensee Event Report 2012-007, Revision 0, dated July 20, 2012. This report is being submitted pursuant to 10 CFR 50.73(a)(2)(ii)(A). No commitments are being made in this letter.

If you should have any questions, please contact me.

Sincerely,

D. J. Bannister
Vice President and CNO

DJB /epm

Attachment

c: E. E. Collins, Jr., NRC Regional Administrator, Region IV
L. E. Wilkins, NRC Project Manager
J. C. Kirkland, NRC Senior Resident Inspector
INPO Records Center

LICENSEE EVENT REPORT (LER)(See reverse for required number of
digits/characters for each block)

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 Section (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet 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.

1. FACILITY NAME

Fort Calhoun Station

2. DOCKET NUMBER

05000285

3. PAGE

1 OF 3

4. TITLE

Failure of Pressurizer Heater Sheath

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																																				
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9. OPERATING MODE 5			11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)																																											
10. POWER LEVEL 0			<table border="0"><tr><td><input type="checkbox"/> 20.2201(b)</td><td><input type="checkbox"/> 20.2203(a)(3)(i)</td><td><input type="checkbox"/> 50.73(a)(2)(i)(C)</td><td><input type="checkbox"/> 50.73(a)(2)(vii)</td></tr><tr><td><input type="checkbox"/> 20.2201(d)</td><td><input type="checkbox"/> 20.2203(a)(3)(ii)</td><td><input checked="" type="checkbox"/> 50.73(a)(2)(ii)(A)</td><td><input type="checkbox"/> 50.73(a)(2)(viii)(A)</td></tr><tr><td><input type="checkbox"/> 20.2203(a)(1)</td><td><input type="checkbox"/> 20.2203(a)(4)</td><td><input type="checkbox"/> 50.73(a)(2)(ii)(B)</td><td><input type="checkbox"/> 50.73(a)(2)(viii)(B)</td></tr><tr><td><input type="checkbox"/> 20.2203(a)(2)(i)</td><td><input type="checkbox"/> 50.36(c)(1)(i)(A)</td><td><input type="checkbox"/> 50.73(a)(2)(iii)</td><td><input type="checkbox"/> 50.73(a)(2)(ix)(A)</td></tr><tr><td><input type="checkbox"/> 20.2203(a)(2)(ii)</td><td><input type="checkbox"/> 50.36(c)(1)(ii)(A)</td><td><input type="checkbox"/> 50.73(a)(2)(iv)(A)</td><td><input type="checkbox"/> 50.73(a)(2)(x)</td></tr><tr><td><input type="checkbox"/> 20.2203(a)(2)(iii)</td><td><input type="checkbox"/> 50.36(c)(2)</td><td><input type="checkbox"/> 50.73(a)(2)(v)(A)</td><td><input type="checkbox"/> 73.71(a)(4)</td></tr><tr><td><input type="checkbox"/> 20.2203(a)(2)(iv)</td><td><input type="checkbox"/> 50.46(a)(3)(ii)</td><td><input type="checkbox"/> 50.73(a)(2)(v)(B)</td><td><input type="checkbox"/> 73.71(a)(5)</td></tr><tr><td><input type="checkbox"/> 20.2203(a)(2)(v)</td><td><input type="checkbox"/> 50.73(a)(2)(i)(A)</td><td><input type="checkbox"/> 50.73(a)(2)(v)(C)</td><td><input type="checkbox"/> OTHER</td></tr><tr><td><input type="checkbox"/> 20.2203(a)(2)(vi)</td><td><input type="checkbox"/> 50.73(a)(2)(i)(B)</td><td><input type="checkbox"/> 50.73(a)(2)(v)(D)</td><td>Specify in Abstract below or in NRC Form 366A</td></tr></table>								<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)	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input checked="" 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 type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A
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12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME

Erick Matzke

TELEPHONE NUMBER (Include Area Code)

402-533-6855

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	AB	EHTR	WATLOW	Y					

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

MONTH	DAY	YEAR
10	30	2012

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

During inspections to determine the physical integrity of a failed pressurizer heater it was determined that the heater sheath (number 26) was cracked. Due to the location of the pressurizer heater crack, this is considered a degradation of the reactor coolant system boundary. The initial visual inspection of heater 26 in November 2011 did not identify the cracking. During efforts to remove the heater, a crack was observed on May 19, 2012. The crack is above and below the heater support plate. The crack is an axial crack showing some branching. The crack is about an inch above and inch below the heater support plate. These inspections were being performed as a result of operating experience. On May 23, 2012, it was determined that the pressurizer heater sheath was part of the reactor coolant system boundary.

A root cause analysis is in progress. The results will be published in a supplement to this LER.

The heater sheath has been removed and replaced. The other heater sheaths have been inspected and none of them had indications of cracking.

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

U.S. NUCLEAR REGULATORY COMMISSION

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Fort Calhoun Station	05000285	YEAR	SEQUENTIAL NUMBER	REV NO.	2 OF 3
		2012	- 007	- 0	

NARRATIVE

BACKGROUND

Fort Calhoun Station (FCS) is a two-loop reactor coolant system of Combustion Engineering (CE) design. The pressurizer and its associated heaters were replaced in the fall of 2006 as part of a plant upgrade project. The pressurizer is designed with 36 pressurizer heaters. The heaters are 480 VAC immersion heaters with an output of approximately 25 (23.6) kilowatts each. Each heater is 1.252 inches in diameter, approximately 5 feet long, and protrudes vertically into the pressurizer through sleeves welded in the bottom head of the pressurizer. The heaters and sheaths were manufactured by Watlow Electric Manufacturing.

EVENT DESCRIPTION

During inspections to determine the physical integrity of a failed pressurizer heater it was determined that the heater sheath (number 26) was cracked. Due to the location of the pressurizer heater crack, this is considered a degradation of the RCS Barrier. The initial visual inspection of heater 26 in November 2011 did not identify the cracking. It appears that the crack expanded during the intervening period. During efforts to remove the heater, a crack was observed on May 19, 2012. The crack is above and below the heater support plate. The crack is an axial crack showing some branching. The crack is about an inch above and inch below the heater support plate. These inspections were being performed as a result of operating experience. On May 23, 2012, it was determined that the pressurizer sheath was part of the reactor coolant system boundary. However, there were no indications of any external RCS leakage.

At 1854 Central Daylight Time (CDT) on May 23, 2012, an 8-hour notification was made to the Headquarters Operations office (HOO), under 10CFR50.72(b)(3)(ii)(a). This report is being made per 10CFR50.73(a)(2)(ii)(A).

This LER reports a condition that was documented in the FCS corrective action program on several occasions. A ground on a pressurizer heater on May 9, 2010, was only reviewed with respect to the Technical Specification requirements for available pressurizer heaters. When the potential challenge to the reactor coolant boundary due to a failed pressurizer heater was identified on August 5, 2011, the Operations review focused on the current operating conditions, noting that the condition would need to be resolved prior to start up. The station paradigm inappropriately concluded that reportability could be evaluated at a later date since current operating conditions were not challenged, and that the 60-day reporting window commenced when the event was determined to be reportable. In addition, FCS resources were focused on flood response and mitigation due to the extensive flooding that occurred along the Missouri River beginning in June 2011. FCS had declared an Unusual Event on June 6, 2011, due to rising river level and river projections, and resources were focused on flood response and asset protection. This condition was initially reported in Event Notification (EN) 47953 on May 23, 2012, at 1854 CDT. FCS has been systematically addressing issues that have been identified since June 2011, in response to the flooding conditions, switchgear fire, and increased oversight. This LER is being submitted beyond the 60-day regulatory reporting requirement due to non-conservative decisions with respect to procedural and regulatory reportability requirements and resource constraints caused by the operating challenges which began in June 2011.

CONCLUSION

A root cause analysis is in progress. The conclusions of the analysis will be presented in a supplement to this LER.

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

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Fort Calhoun Station	05000285	YEAR	SEQUENTIAL NUMBER	REV NO.	3 OF 3
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NARRATIVE

CORRECTIVE ACTIONS

Actions to Prevent Recurrence

The cracked heater has been removed and replaced. The other heater sheaths have been very rigorously inspected to ensure any cracks would be identified. None of the other heater sheaths had indications of cracking.

Additional actions will be tracked in the stations corrective action system.

SAFETY SIGNIFICANCE

While the heater sheath crack caused the electrical failure of the pressurizer heater, the heater design includes a secondary seal (not the RCS pressure boundary) that prevented any leakage from the reactor coolant system. This integral safety function operated as anticipated and designed. FCS performed a bare metal inspection of the pressurizer bottom head and confirmed that there were no indications of any external RCS leakage from any of the heaters or their penetrations. Therefore this event had no impact on the health and safety of the public.

SAFETY SYSTEM FUNCTIONAL FAILURE

This event does not result in a safety system functional failure in accordance with NEI-99-02.

PREVIOUS EVENTS

The station has not had any previous cracking of pressurizer heater sheaths.