



**Omaha Public Power District**

444 South 16<sup>th</sup> Street Mall  
Omaha, NE 68102-2247

10 CFR 50.73

March 12, 2014  
LIC-14-0029

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

Fort Calhoun Station, Unit No. 1  
Renewed Facility Operating License No. DPR-40  
NRC Docket No. 50-285

Reference: none

**Subject: Licensee Event Report 2014-002, Revision 0, for the Fort Calhoun Station**

Please find attached Licensee Event Report 2014-002, Revision 0. This report is being submitted pursuant to 10 CFR 50.73(a)(2)(iv)(A). No commitments are being made in this letter.

If you should have any questions, please contact Terrence W. Simpkin, Manager, Site Regulatory Assurance, at (402) 533-6263.

Respectfully,

Louis P. Cortopassi  
Site Vice President and CNO

LPC/epm

Attachment

c: J. M. Sebrosky, NRC Sr. Project Manager  
M. L. Dapas, NRC Regional Administrator, Region IV  
J. C. Kirkland, NRC Sr. Resident Inspector

**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

1. FACILITY NAME Fort Calhoun Station					2. DOCKET NUMBER 05000285		3. PAGE 1 OF 3		
4. TITLE Reactor Manual Trip due to Control Rod Misalignment									
5. EVENT DATE MONTH DAY YEAR		6. LER NUMBER YEAR SEQUENTIAL NUMBER REV NO.		7. REPORT DATE MONTH DAY YEAR		8. OTHER FACILITIES INVOLVED FACILITY NAME DOCKET NUMBER			
01 12 2014		2014 - 002 - 00		3 12 2014		FACILITY NAME DOCKET NUMBER 05000			
9. OPERATING MODE 2		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)(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 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)				
10. POWER LEVEL 0		<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input checked="" 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				
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	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
X	AA	RECT	NEWARK	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 15 single-spaced typewritten lines)									
<p>After reaching criticality on January 12, 2014, the control room attempted to reduce power ascension rate while at zero percent power by inserting Group 4 CEAs. All Group 4 CEAs inserted with the exception of control rod RC-10-41, which failed to move. Group 4 was inserted further until a 10 inches deviation existed between RC-10-41 and the remaining Group 4 CEAs. Power continued to slowly rise and the Control Room conservatively decided to manually trip the reactor with the existing deviation. On January 12, 2014, at 0323 the reactor was manually tripped due to reactor power rising with RC-10-41 deviation. Control room entered EOP-00, Standard Post Trip Actions, and exited AOP-2. All CEAs inserted into the reactor as expected following the trip.</p> <p>Troubleshooting determined that the rectifier for RC-10-41 had failed. The failed CEDM rectifier and associated fuses for RC-10-41 were replaced. Additional review of the rectifier failure is being performed and any significant findings will be addressed in a supplement to this LER if needed.</p>									

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**NARRATIVE****BACKGROUND**

Fort Calhoun Station (FCS) is a two-loop reactor coolant system of Combustion Engineering (CE) design.

The Control Element Drive Mechanism (CEDM) functions to raise or lower its respective Control Element Assembly (CEA) in response to signals from the Control Room. The CEDM includes the upper components that drive the movement such as the drive package containing the motor/brake. It also includes lower components such as the drive shaft, bevel gears, and rack and pinion which are contained in the support tube assembly.

**EVENT DESCRIPTION**

After reaching criticality on January 12, 2014, the control room attempted to reduce power ascension rate, while at zero percent power, by inserting Group 4 CEAs. All Group 4 CEAs inserted with the exception of control rod RC-10-41, which failed to move. Group 4 was inserted further until a 10" deviation existed between RC-10-41 and the remaining Group 4 CEAs. Power continued to rise slowly and the Control Room conservatively decided to manually trip the reactor. On January 12, 2014, at 0323 the reactor was manually tripped due to reactor power rising with RC-10-41 deviation. The control room entered EOP-00, Standard Post Trip Actions, and exited AOP-2. All CEAs inserted into the reactor as expected following the trip. At 0644 Central Standard Time (CST) NRC Headquarter Operations Office (HOO) was notified of the reactor trip per 10 CFR 50.72(b)(2)(iv)(B) and (b)(3)(iv). This event is reportable per 50.73(a)(2)(iv)(A). This issue was entered in to the corrective action system as CR2014-00485.

**CONCLUSION**

Troubleshooting determined that the rectifier for CEDM RC-10-41 had failed. Additional review of the rectifier failure is being performed and any significant findings will be addressed in a supplement to this LER if needed.

**CORRECTIVE ACTIONS****Immediate Corrective Actions**

The failed CEDM rectifier and associated fuses for RC-10-41 were replaced.

**SAFETY SIGNIFICANCE**

Although the failure of the rectifier and associated fuse would not allow the CEDM to be manually repositioned the failure mechanism has no impact on the ability of the reactor trip (redundant rapid shutdown) circuitry to allow tripping this rod or tripping the reactor.

U.S. NUCLEAR REGULATORY COMMISSION  
LICENSEE EVENT REPORT (LER)  
CONTINUATION SHEET

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**NARRATIVE****SAFETY SYSTEM FUNCTIONAL FAILURE**

This does not represent a safety system functional failure in accordance with NEI 99-02, Revision 7.

**PREVIOUS EVENTS**

LER 2014-001