



10 CFR 50.73

LIC-15-0012  
January 21, 2015

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

**Subject: Licensee Event Report 2014-004, Revision 1, for the Fort Calhoun Station**

Please find attached Licensee Event Report 2014-004, Revision 1. This report is being submitted pursuant to 10 CFR 50.73(a)(2)(v), 10 CFR 50.73(a)(2)(vii), 10 CFR 50.73(a)(2)(i)(B) and 10 CFR 50.73(a)(2)(ix)(A). This revision is to update the discovery date only. There are no new commitments being made in this letter.

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

Sincerely,

Louis P. Cortopassi  
Site Vice President and CNO

LPC/epm

**Attachment**

c: M. L. Dapas, NRC Regional Administrator, Region IV  
J. K. Rankin, NRC Project Manager  
S.M. Schneider, NRC Senior Resident Inspector

**LICENSEE EVENT REPORT (LER)**(See Page 2 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 and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to [Infocollects.Resource@nrc.gov](mailto: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 4

**4. TITLE**

Unqualified Limit Switches Render Safety Equipment Inoperable

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	
5	3	2012	2014	004	- 1	1	21	2015	FACILITY NAME	DOCKET NUMBER	
										05000	
										05000	
<b>9. OPERATING MODE</b>			<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)</b>								
1			<input type="checkbox"/> 20.2201(b)			<input type="checkbox"/> 20.2203(a)(3)(i)			<input type="checkbox"/> 50.73(a)(2)(i)(C)		<input checked="" 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 checked="" type="checkbox"/> 50.73(a)(2)(ix)(A)
10. POWER LEVEL  100			<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 checked="" 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 checked="" 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 checked="" type="checkbox"/> 50.73(a)(2)(v)(C)		<input type="checkbox"/> OTHER
			<input type="checkbox"/> 20.2203(a)(2)(vi)			<input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)			<input checked="" type="checkbox"/> 50.73(a)(2)(v)(D)		Specify in Abstract below or in NRC Form 366A

**12. LICENSEE CONTACT FOR THIS LER**

LICENSEE CONTACT

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

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

MONTH	DAY	YEAR

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

On April 24, 2014, during a review of previous conditions affecting equipment qualification it was identified that the environmental qualification of Namco EA180 series limit switches were not being properly maintained per vendor requirements. This condition was not verbally reported at the time of discovery as the condition was identified and resolved while the plant was in an extended shutdown.

A cause evaluation was completed and determined that technical requirements from the vendor manual for maintaining environmental qualification of the Namco EA180 series limit switches were not captured in the applicable plant procedure.

The applicable plant procedure has been revised to include vendor information for maintaining environmental qualification of the limit switches. The limit switch top cover gasket and screw assemblies for all environmentally qualified Namco EA180 series limit switches were installed in the plant per vendor requirements.

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

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 internet e-mail to [Infocollections.Resource@nrc.gov](mailto:Infocollections.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	2. DOCKET	6. LER NUMBER			3. PAGE
Fort Calhoun Station	05000285	YEAR	SEQUENTIAL NUMBER	REV NO.	2      OF      4
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**NARRATIVE****BACKGROUND**

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

**EVENT DESCRIPTION**

On April 24, 2014, during a review of previous conditions affecting equipment qualification it was determined that a condition repaired in 2012 and 2013 may need additional review for reporting. During a comparison of vendor manual requirements in applicable plant procedures associated with the Fort Calhoun recovery efforts on May 3, 2012, it was identified that the environmental qualification of Namco EA180 series limit switches were not being properly maintained per vendor requirements in that revision 6 of maintenance procedure EM-RR-VX-0410, "Maintenance of Limit Switch Type EA-180 to Maintain EEQ Qualification," did not require the replacement of the limit switch top cover gasket and screw assemblies and torqueing of the top cover screws to 20 to 25 inch-pounds each time the top cover was removed. Instead, EM-RR-VX-0410 called for torqueing the limit switch top cover screws to 19 to 21 inch-pounds and did not call for the replacement of the limit switch top cover gasket and screw assemblies each time the top cover was removed.

The following components are within the scope of this issue:

FCV-326 - Shutdown Cooling Heat Exchanger Low Pressure Safety Injection (LPSI) bypass flow control valve

HCV-1041A/1042A - Main Steam Isolation Valves

HCV-1107/1108A/B - Steam Generator Auxiliary Feedwater inlet valves

HCV-1387/1388 - Steam Generator Blowdown Isolation Valves

HCV-238/239 - Reactor Coolant System Charging Line stop valves

HCV-240 - Pressurizer Spray inlet valve

HCV-241 - Reactor Coolant Pumps Controlled Bleed-Off Inboard isolation valve

HCV-2504/2506/2507 A/B - Steam Generator Sample Line inboard and outboard isolation valves

HCV-2603A/B - Safety Injection (SI) Tank SI-6A/D supply isolation valves

HCV-2604A/B - Reactor Coolant Drain Tank (RCDT) supply isolation valves

HCV-2898/2899A/B - Control Room Ventilation Unit Component Cooling Water (CCW) inlet/outlet valves

HCV-2907/2908/2917/2918/2927/2928 - High Pressure Safety Injection (HPSI) suction/discharge valves

HCV-2937/2938/2947/2948 - Low Pressure Safety Injection (LPSI) suction/discharge valves

HCV-2957/2958/2967/2968/2977/2978 - Containment Spray (CS) suction/discharge Valves

HCV-2916/2936/2956/2976 - SI Tank SI-6A/D fill/drain valves

HCV-2987 - HPSI Alternate Header isolation valve

HCV-304/305/306/307 - HPSI Header cross connect and isolation valves

HCV-335 - Shutdown Cooling Heat Exchanger inlet header isolation valve

HCV-425A/425C - SI Leakage Cooler combined CCW inlet/outlet header inboard isolation valve

HCV-438A/438C - Reactor Coolant Pump (RCP) lube oil and seal coolers CCW inlet/outlet inboard isolation valve

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**NARRATIVE**

HCV-467A/467C - Nuclear Detector Well Cooling Coolers combined CCW inlet/outlet header inboard isolation valve  
HCV-545 - SI Leakage to Waste Disposal System isolation valve  
HCV-746A/B - Containment Pressure Relief isolation valves  
HCV-864/865 - Containment Fan Cooler Charcoal Bed Fire Protection valves  
HCV-881/882/883A/884A - Hydrogen Analyzer Sample Containment Isolation valves  
MS-291/292 - Power Operated Main Steam Relief valves  
PCV-1849A - Containment Instrument Air inboard isolation valve  
PCV-2909/2929/2949/2969 - SI Leakage Cooler pressure control valves  
PCV-6680/6681A/B - Control Room Heating Ventilation and Air Conditioning (HVAC) filter control valves  
PCV-742A/B/C/D/E/G - Containment Purge isolation valves  
TCV-202 - RCS Letdown temperature control valve  
YCV-1045A/B - Turbine Driven Auxiliary Feed Water Pump (FW-10) steam supply valves

This report is being submitted pursuant to 10 CFR 50.73(a)(2)(v), 10 CFR 50.73(a)(2)(vii), 10 CFR 50.73(a)(2)(i)(B) and 10 CFR 50.73(a)(2)(ix)(A). A verbal report was not required as this event is of a historical nature.

**CONCLUSION**

A cause evaluation was completed and determined that technical information from the vendor manual for maintaining environmental qualification of the Namco EA180 series limit switches was not captured in procedure EM-RR-VX-0410.

**CORRECTIVE ACTIONS**

Procedure EM-RR-VX-0410 was revised to include vendor information for maintaining environmental qualification of the Namco EA180 limit switches.

The limit switch top cover gasket and screw assemblies for affected environmentally qualified Namco EA180 series limit switches installed in the plant have been replaced and the associated top cover screws properly torqued to 20 to 25 inch-pounds.

**SAFETY SIGNIFICANCE**

With the exceptions noted below, the affected limit switches provide component position indication only; they do not impact the automatic operation of the affected safety systems. In some accidents, the operators would use supplemental indication to validate proper operation of safety system function. Validation of proper system operation is a normal part of the station emergency and abnormal operating procedures and operator training.

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**NARRATIVE**

Limit switches on MS-291/292 will initiate the filtered air mode on Control Room Ventilation whenever either safety valve is opened. Design basis accidents that could affect these switches would not impact the dose to the operators. The operations staff is provided with self-contained breathing equipment should conditions indicate that it is necessary to minimize dose to the operators.

**SAFETY SYSTEM FUNCTIONAL FAILURE**

This does not represent a safety system functional failure in accordance with NEI 99-02, revision 7 as the limit switches will not prevent the automatic safety functions of the impacted safety systems.

**PREVIOUS EVENTS**

LERs 2012-015, 2012-017, 2013-011 and 2013-016 also report issues with environmental qualification.