



Omaha Public Power District

444 South 16<sup>th</sup> Street Mall

Omaha, NE 68102-2247

LIC-13-0012

May 08, 2013

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

Reference: Docket No. 50-285

**Subject: Licensee Event Report 2012-018, Revision 1, for the Fort Calhoun Station**

Please find attached Licensee Event Report 2012-018, Revision 1, dated May 08, 2013. This report is being submitted pursuant to 10 CFR 50.73(a)(2)(i)(B).

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/rjr

**Attachment**

- c: A. T. Howell, NRC Regional Administrator, Region IV  
J. M. Sebrosky, NRC Project Manager  
L. E. Wilkins, NRC Project Manager  
J. C. Kirkland, NRC Senior 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](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**

Containment Air Cooling Units Not Properly Tested during Cycle 26

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																																				
07	27	2012	2012	018 - 1		05	08	2013	FACILITY NAME	DOCKET NUMBER 05000																																				
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 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 checked="" 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 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 checked="" 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

**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 July 27, 2012, while performing NRC Inspection Manual Chapter 0350 checklist reviews, the Recovery Engineering Team identified that the containment air cooling and filtering system (CACFS) was not properly tested during cycle 26. It was discovered that surveillance test (ST) IC-ST-VA-0013, as written and performed, did not maintain train separation of the system components during single train surveillance testing as required by Technical Specifications (TS) 2.4.1.a.i, 2.4.1.a.ii, and 3.6(3)g. This resulted in Fort Calhoun Station being in a condition prohibited by TS during operating cycle 26.

Amendment No. 255 changed how pressure is to be controlled during a loss of coolant accident; from the containment spray system to the CACFS. The revision to the ST, required by this change, failed to incorporate the train separation required by the TS. The ST procedure has been revised and CACFS will be tested prior to being required by TS.

**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.	2 OF 4
		2012	- 018	- 1	

**NARRATIVE**

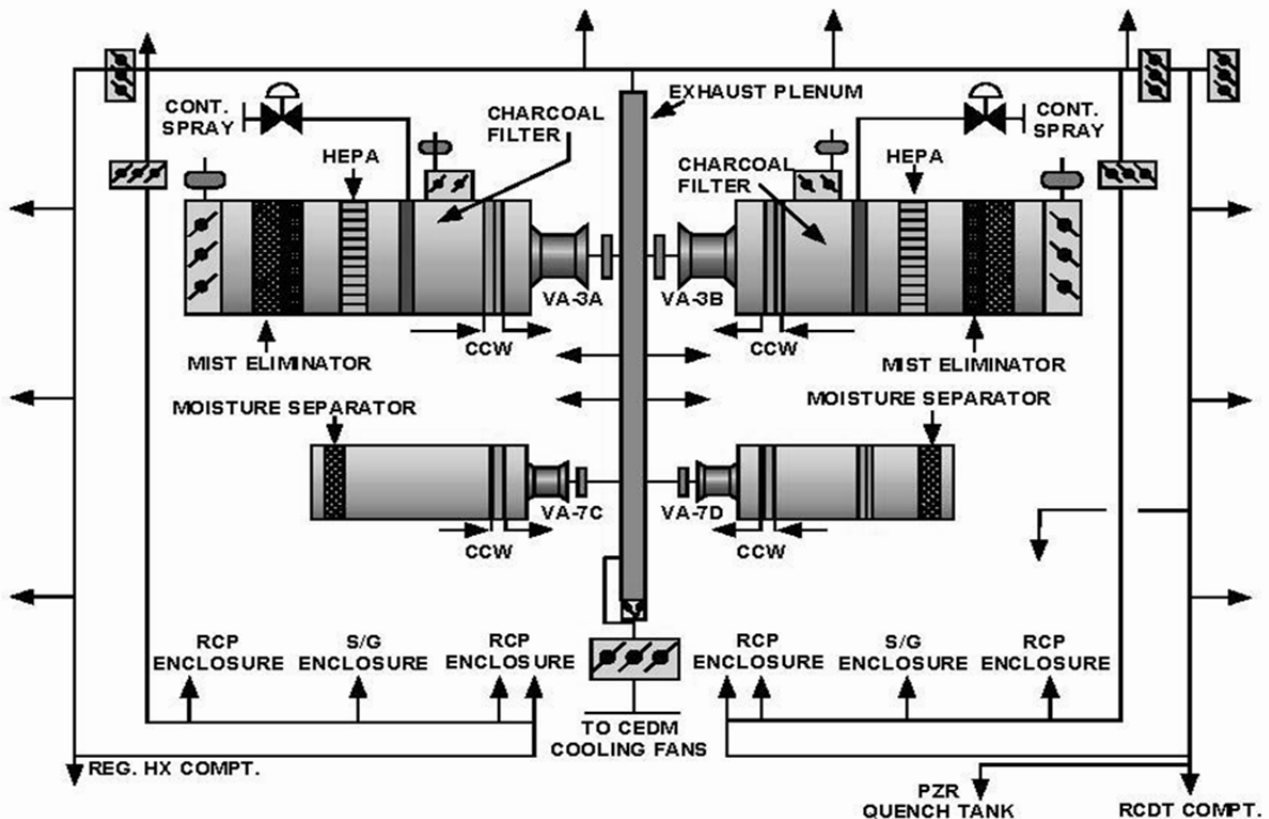
**BACKGROUND**

**System Description**

The containment air cooling and filtering system (CACFS) is designed to perform a nuclear safety function of filtering and cooling the containment building atmosphere during normal plant operation and accident conditions. During accident conditions, the CACFS is designed to limit the leakage of airborne activity from the containment and reduce containment pressures in the event of a loss of coolant accident (LOCA). During normal plant operations, CACFS cools the containment atmosphere and provides filtration required prior to personnel access. The CACFS is independent from the containment spray system for the containment cooling function.

The CACFS consists of four air handling units each with a fan and heat exchanger. They discharge to a common plenum. There are two types of units. Two units (VA-3A, VA-3B) have filtering capacity while the other two air cooling units (VA-7C, VA-7D) do not have filtering capacity. The air cooling units are similar in design to the cooling and filtering units but do not include mist eliminators, HEPA filters, or charcoal filters. License Amendment No. 255 approved the change where the CACFS components are combined into a train consisting of one containment air filtering and cooling unit, and one containment cooling unit that are associated to the same emergency diesel generator. Therefore, the two trains of containment air cooling and filtering components are: (VA-3A and VA-7C) which are associated with diesel generator DG-1 and (VA-3B and VA-7D) which are associated with diesel generator DG-2.

Below is a partial plant drawing of the CACFS components discussed in the Event Description.



**LICENSEE EVENT REPORT (LER)  
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**NARRATIVE**

Technical Specifications (TS) 2.4 and 3.6(3)g divide the four air handling units into two independent trains, each with 100% capacity that are to be shown to operate within +/- 10% of design flow on a refueling surveillance interval.

**EVENT DESCRIPTION**

On July 27, 2012, while performing NRC Inspection Manual Chapter 0350 checklist reviews, the Recovery Engineering Team identified that the containment air cooling and filtering system (CACFS) was not properly tested during cycle 26. It was discovered that surveillance test (ST) IC-ST-VA-0013, as written and performed, did not maintain train separation of the system components during single train surveillance testing as required by the USAR and TS 2.4.1.a.i, 2.4.1.a.ii, and 3.6(3)g. This resulted in Fort Calhoun Station (FCS) being in a condition prohibited by Technical Specifications during operating cycle 26.

A review of Condition Report (CR) 2009-6610 identified that on the previous day, VA-7C and VA-7D failed the acceptable pressure drop range of 3.3 to 5.0 inches water column (WC) as specified in ST IC-ST-VA-0013.

Under Steps 7.3 and 7.4 of the referenced ST is a note which states "It is desired to have one fan in the ON position to minimize back pressure during VA-7C/D test". The following step (7.3.1 or 7.4.1) has Operations place fan combinations in service with desired and actual fan combinations. The desired position category allows Operations to interpret the note found above the step (3.4.1 or 7.4.1).

The test was re-performed a day later and during the re-test, during the 2009 refueling outage, the note was interpreted incorrectly and both VA-3A and VA-3C were left running during the individual testing of the VA-7C and VA-7D units. Running this fan configuration increases backpressure, reducing measured flow, resulting in what appeared to be a successful test. What was not recognized at the time was that the test violated train separation of the containment cooling fans, therefore, the FCS failed to meet the surveillance testing requirements.

This condition is being submitted pursuant to: 10 CFR 50.73(a)(2)(i)(B), Any operation or condition which was prohibited by the plant's Technical Specifications.

**CONCLUSION**

Amendment No. 255 changed how containment pressure is controlled during a loss of cooling accident; CACFS versus containment spray. The revision to the ST, required by this change, failed to incorporate the train separation required by the change to TS.

**CORRECTIVE ACTIONS**

Procedure IC-ST-VA-0013 has been revised to implement independent train testing (CR 2012-08675-010 AI Completed March 28, 2013).

CACFS will be tested prior to being required by TS (CR 2012-08675-011 AI).

A review of other procedures that may have been affected by EC 40070 was conducted to verify segregation of independent train testing (CR 2012-08675-015 AI Completed April 19, 2013).

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

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**NARRATIVE**

**SAFETY SIGNIFICANCE**

For the limiting loss of coolant accident, one of the two CACFS trains, comprised of one containment air cooling and filtering unit and one containment air cooling unit, would limit the containment pressure to below the design value without taking credit for the cooling capacity of the containment spray system. For the limiting main steam line break accident, a heat removal contribution is credited from the air coolers and the containment spray system in the mitigation of containment peak pressure.

License Amendment No. 255 did not result in any physical changes to, or accident response of, the system. The testing performed in 2009 demonstrated that more than the minimum air flow would be developed and that adequate cooling flow would have resulted. Excessive air flow could result in increased diesel generator loading and increased fuel consumption affecting the mission time due to increased motor amps. Several performances of OP-ST-VA-008, Containment Ventilation System Containment Fans Exercise Test, performed during cycle 26 were reviewed to verify acceptable motor amps. As stated in the corrective actions, an acceptable test performance is a Mode restraint for the next start-up.

**SAFETY SYSTEM FUNCTIONAL FAILURE**

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

**PREVIOUS EVENTS**

Eight LERs with event dates since January 1, 2010, were identified with the same reporting criteria;

- 10 CFR 50.73(a)(2)(i)(B), Any operation or condition which was prohibited by the plant's Technical Specifications,

None of the LERs reviewed contained the same underlying concern or reason of this event, such as the same root cause, failure, or sequence of events.