



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

January 19, 2011  
LIC-11-0005

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

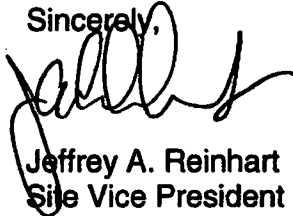
Reference: Docket No. 50-285

**Subject: Licensee Event Report 2010-005, Revision 1, for the Fort Calhoun Station**

Please find attached Licensee Event Report 2010-005, Revision 1, dated January 19, 2011. This supplemental report is being submitted pursuant to 10 CFR 50.73(a)(2)(i)(B).

No regulatory commitments are contained in this submittal. If you should have any questions, please contact me.

Sincerely,



Jeffrey A. Reinhart  
Site Vice President

JAR/rda

Attachment

c: E. E. Collins, 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 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet e-mail to [infocollects@nrc.gov](mailto:infocollects@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

Inoperability of the Emergency Diesel Generator Fuel Oil Transfer System

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
1	6	2010	2010	- 005 -	01	1	26	2011	FACILITY NAME	05000
9. OPERATING MODE  1			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)				
10. POWER LEVEL  100			<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

## 12. LICENSEE CONTACT FOR THIS LER

## FACILITY NAME

Richard Acker

## TELEPHONE NUMBER (include Area Code)

402-533-6561

## 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

## 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)

Diesel Fuel Oil Transfer Pump FO-37 and its credited portable back-up pump were inoperable on January 6-7, 2010. On January 6, 2010, FO-37 was rendered inoperable due to local area flooding caused by the rupture of FP-772, "Service Building Fire Sprinkler Isolation Valve". A function of FO-37 is to transfer diesel fuel between "Diesel Fuel Oil Storage Tanks" FO-10 and FO-1. On June 24, 2010, an engineering evaluation determined that the credited portable back up pump to FO-37 was not the correct pump for the application and would not transfer diesel fuel oil from FO-10 to FO-1 as intended. Since both pumps (FO-37 and the credited portable back-up pump) were inoperable this is reportable in accordance with 10 CFR 50.73(a)(2)(i)(B).

A root cause analysis determined there was a failure to perform an appropriate design change evaluation for maintaining diesel fuel oil transfer system capability as required by Technical Specification Amendment 162, dated March 29, 1994. The originally credited portable back-up pump was replaced with a new portable pump that has the capability to transfer diesel fuel oil between tanks FO-10 and FO-1. The appropriate procedures were revised to address the pump replacement.

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CONTINUATION SHEET

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		2010 -	005	- 01	

## NARRATIVE

## BACKGROUND

On March 29, 1994, Fort Calhoun Station (FCS) received approval (Technical Specification (TS) amendment 162) to revise TS 2.7(1)m that enabled the configuration of the fuel oil system for the emergency diesel generators to meet Institute of Electrical and Electronics Engineers (IEEE) 308, "Standard Criteria for Class 1E Power Systems for Nuclear Power Generating Stations." This provides FCS the capability to provide diesel fuel oil for seven days of diesel generator operation following the most limiting accident condition. The revised TS 2.7(1)m, "Limiting Condition for Operation, Electrical Systems, Applicability, Minimum Requirements (plant greater than 300 degrees F)" states, "One diesel fuel oil storage system containing a minimum volume of 16,000 gallons of diesel fuel in FO-1 and a minimum volume of 10,000 gallons of diesel fuel in FO-10."

The FCS diesel fuel oil system is defined in part as, FO-1, FO-10, FO-37, the credited portable back-up pump, associated piping, other pumps, valves, portable hoses and instrumentation.

The original licensed configuration was to solely use the fuel oil inventory in FO-1, which contains approximately four days supply for the emergency diesel generators. The TS amendment changes included combining the fuel oil inventories of FO-1 and FO-10, "Auxiliary Boiler (AS-1) Fuel Oil Tank" which would extend the operation of the emergency diesel generators to seven days. FO-1 and FO-10 are separate tanks and are not physically connected.

The TS amendment 162 "Discussion, Justification and No Significant Hazards Consideration" section stated that fuel oil make-up to FO-1 could be achieved by manually connecting FO-37 from FO-10 to FO-1 through rubber hose connections. Additionally, a portable pump and hoses were dedicated and stored in an appropriate place as a back-up to FO-37. A preventative maintenance task was developed to periodically verify the pump and hoses are available for use. Since the portable pump is a credited back-up to FO-37, then FO-37 can be out-of-service without violating the TS requirement of having an operable "fuel oil storage system."

FO-37 is a non-Critical Quality Element (CQE) positive displacement pump capable of transferring fuel oil from FO-10 to FO-1, through rubber hose connections, at a rate of 5.8 gpm. The credited portable back-up pump was a non-CQE manual double diaphragm Munster Simms Whale Gusher 30 bilge pump with a nominal rating of 29 gpm.

FCS Procedure EPIP-RR-17A, "TSC Administrative Logistics Coordinator Actions" contains instructions on the use of FO-37 and the portable back-up pump to transfer diesel fuel from FO-10 to FO-1. This procedure also addresses the contingency to have diesel fuel oil delivered via truck from a local vendor. This helps to ensure that there is sufficient diesel fuel oil on site should an accident requiring sustained emergency diesel generator operation.

## EVENT DESCRIPTION

On January 6-7, 2010, due to local area flooding FO-37 was rendered inoperable for approximately 24 hours. In response to NRC Resident Inspector questions an engineering review was performed on June 24, 2010, on the capability of the portable back-up pump. This review revealed that the portable back-up pump was not the correct pump for the application and it could not perform the function of transferring diesel fuel oil from FO-10 to FO-1 in the event that FO-37 was inoperable. Additionally, on August 30, 2010, the portable back-up pump failed a functional test when the pump diaphragm ruptured.

Since FO-37 was inoperable on January 6-7, 2010, and an engineering evaluation determined the portable back-up pump was not capable of transferring diesel fuel oil from FO-10 to FO-1, then these two components, that are part of the diesel fuel oil system required by TS 2.7(1) m were inoperable concurrently, then this condition is reportable in accordance with 10 CFR 73(a)(2)(i)(B).

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## NARRATIVE

## CONCLUSION

The root cause was determined to be the failure to perform an appropriate design change evaluation for maintaining diesel fuel oil transfer system capability which was required by Technical Specification Amendment 162, dated March 29, 1994.

## CORRECTIVE ACTIONS

The non-CQE manual double diaphragm Munster Simms Whale Gusher 30 bilge pump was replaced with a Filterdyne Portable filtration System, Model 757.10.1. Procedure EPIP-RR-17A was revised to address the use of the Filterdyne Portable Filtration System for use as the credited back-up to FO-37. Other actions will be addressed by the FCS corrective action program.

## SAFETY SIGNIFICANCE

The transfer of diesel fuel oil from FO-10 to FO-1 can be accomplished by FO-37, or other portable back-up pumps. FCS procedures also address the delivery of diesel fuel oil on site from a local vendor. Since there are several methods to transfer diesel fuel oil to FO-1, this event has no effect 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 SIMILAR EVENTS

None