your energy partner
OPPD
Omaha Public Power District
444 South 16th Street Mall
Omaha, NE 68102-2247

LIC-13-0062
May 14, 2013

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

Reference: Docket No. 50-285

Subject: Licensee Event Report 2012-019, Revision 1, for the Fort Calhoun Station

Please find attached Licensee Event Report 2012-019, Revision 1, dated May 14, 2013. This report is being submitted pursuant to 10 CFR 50.73(a)(2)(v)(B).

No commitments are being made in this letter.

I 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
L. E. Wilkins, NRC Project Manager
J. M. Sebrosky, NRC Project Manager
J. C. Kirkland, NRC Senior Resident Inspector

NRC FORM 366 (10-2010) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 10/31/2013

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 205 55-0001, 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.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
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4. TITLE

Traveling Screen Sluice Gates Found with Dual Indication

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
										05000
08	14	2012	2012	- 019 -	1	05	14	2013	FACILITY NAME	DOCKET NUMBER 05000

9. OPERATING MODE

5

10. POWER LEVEL

0

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*

- ☐ 20.2201(b)
- ☐ 20.2201(d)
- ☐ 20.2203(a)(1)
- ☐ 20.2203(a)(2)(i)
- ☐ 20.2203(a)(2)(ii)
- ☐ 20.2203(a)(2)(iii)
- ☐ 20.2203(a)(2)(iv)
- ☐ 20.2203(a)(2)(v)
- ☐ 20.2203(a)(2)(vi)
- ☐ 20.2203(a)(3)(i)
- ☐ 20.2203(a)(3)(ii)
- ☐ 20.2203(a)(4)
- ☐ 50.36(c)(1)(i)(A)
- ☐ 50.36(c)(1)(ii)(A)
- ☐ 50.36(c)(2)
- ☐ 50.46(a)(3)(ii)
- ☐ 50.73(a)(2)(i)(A)
- ☐ 50.73(a)(2)(i)(B)
- ☐ 50.73(a)(2)(i)(C)
- ☐ 50.73(a)(2)(ii)(A)
- ☐ 50.73(a)(2)(ii)(B)
- ☐ 50.73(a)(2)(iii)
- ☐ 50.73(a)(2)(iv)(A)
- ☐ 50.73(a)(2)(v)(A)
- ☒ 50.73(a)(2)(v)(B)
- ☐ 50.73(a)(2)(v)(C)
- ☐ 50.73(a)(2)(v)(D)
- ☐ 50.73(a)(2)(vii)
- ☐ 50.73(a)(2)(viii)(A)
- ☐ 50.73(a)(2)(viii)(B)
- ☐ 50.73(a)(2)(ix)(A)
- ☐ 50.73(a)(2)(x)
- ☐ 73.71(a)(4)
- ☐ 73.71(a)(5)
- ☐ OTHER

Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER *(Include Area Code)*
Erick Matzke	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 August 14, 2012, at approximately 2100 hours Central Daylight Time, Operations was cycling all 6 traveling screen sluice gates when it was identified that traveling screen sluice gate CW-14E motor was stopping on high torque and provided indication that the gate was approximately 8 inches open. Traveling screen sluice gate CW-14C was also stopping on high torque and providing indication the gate was not fully closed. During a flooding event, these sluice gates are credited to fully close allowing control of the intake structure cell level with the raw water pumps. Cell level is maintained below elevation 1007-foot 6-inches. This is the point at which the raw water pump bay could become flooded causing a loss of raw water to the component cooling water heat exchangers. On August 25, 2012, divers removed the sediment and debris from all sluice gate bottoms returning the sluice gates' capability to be fully closed in the event of a design basis flood. The condition was entered into the station's corrective action program as condition report (CR) 2012-10206.

The cause of the failure of the sluice gates to fully close was debris under the gates. The Apparent Cause is the process for closing the Sluice gates within OI CW-2 did not adequately account for river debris obstructions.

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NARRATIVE

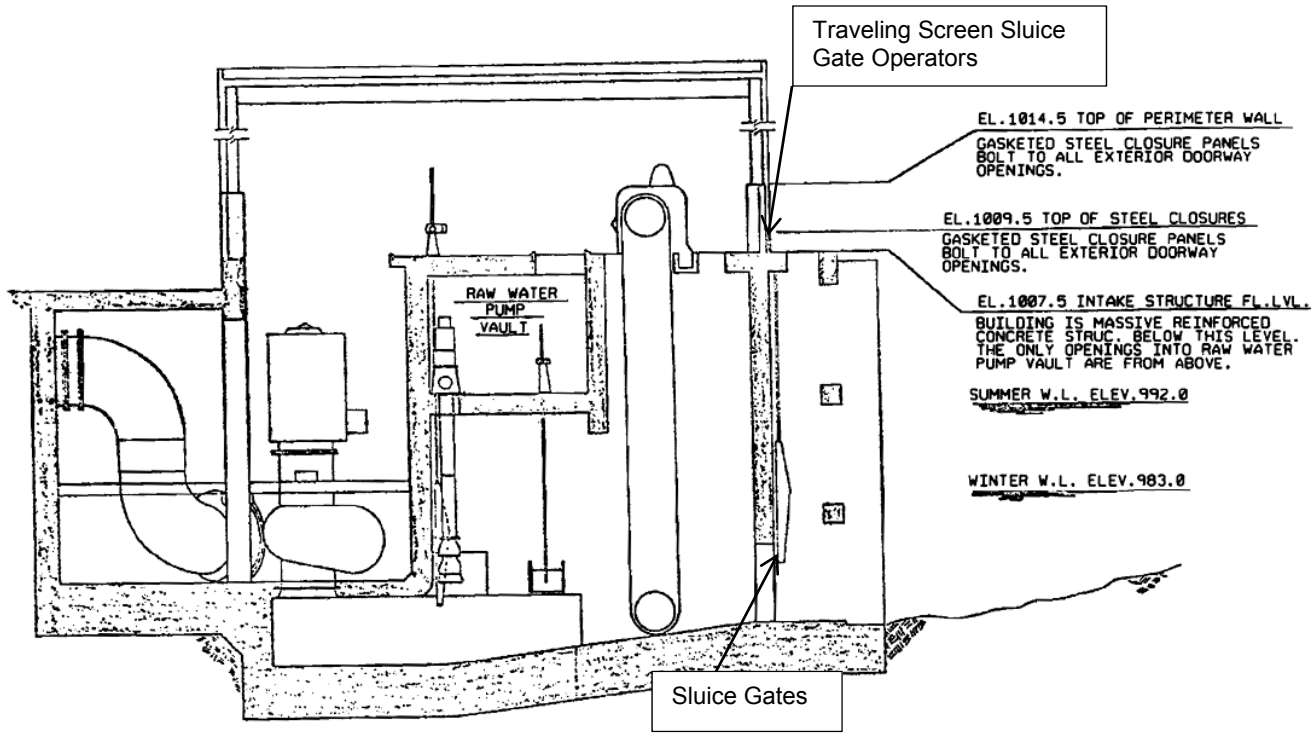
BACKGROUND

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

Four raw water pumps are installed in the intake structure pump house to provide screened river water to the component cooling heat exchangers.

Protection for the raw water pumps and their drives against floods is provided at three elevations. The pumps are permanently protected against any water level up to elevation 1,007.5 feet by the Class I concrete substructure of the intake building. Protection against the 1,009.5-foot and 1,014-foot floods is provided by gasketed steel closures at exterior doorway openings and the screen wash discharge trough. The water level inside the intake cells can be controlled by pre-positioning the exterior sluice gates (i.e., before floodwater reaches the elevation that prevents access to the sluice gate manual actuators) to severely restrict the inflow into the cells. Intake cell level is then controlled by varying the raw water pump(s) output to remove the inlet flow.

USAR Figure 9.8-1 is provided below for reference.



The basic safety related function of the raw water system is to provide a cooling medium for the component cooling water system. The raw water system also provides direct cooling for the following safety related components in the event that the component cooling water system is unavailable: the shutdown cooling heat exchangers, the high/low pressure safety injection pump bearing oil and seal coolers, the containment spray pump bearing oil and seal coolers, and the control room air conditioners.

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The circulating water pumps, which take suction from the intake cells, have been secured for approximately 18 months, in part, creating a low flow condition and may be causing additional sediment to build-up.

Technical Specification (TS), Limiting Condition for Operation (LCO) 2.4, Containment Cooling, defines the minimum requirements for reactor criticality (except for low-temperature physics tests). The reactor may be made critical with one inoperable raw water pump; however, LCO action statements shall apply.

TS LCO, 2.16, River Level, provides the maximum river level, as measured at the intake structure, as 1009 feet for reactor shutdown and 1004.2 feet and rising as the level to institute the emergency plan to protect the plant.

EVENT DESCRIPTION

On August 14, 2012, at approximately 2100 hours Central Daylight Time, Operations was cycling all 6 traveling screen sluice gates when it was identified that traveling screen sluice gate (CW-14E) motor was stopping on high torque and provided indication that the gate was approximately 8 inches open. Traveling screen sluice gate (CW-14C) was also stopping on high torque and providing indication the gate was not fully closed. During a flooding event, these sluice gates are credited to fully close allowing control of the intake structure cell level with the raw water pumps. Cell level is maintained below elevation 1007-foot 6-inches. This is the point at which the raw water pump bay could become flooded causing a loss of raw water to the component cooling water heat exchangers. At the time of discovery, FCS was shutdown in Mode 5. In addition to the raw water pumps, the circulating water pumps take suction from the intake cells. These pumps have been secured for approximately 18 months, creating a low flow condition which may, in-part, be causing additional sediment to build-up where the sluice gates rest when closed. The condition was entered into the station's corrective action program as condition report (CR) 2012-10206.

On August 15, 2012, FCS engineers provided reasonable assurance that the indication was incorrect and that the sluice gates were closed. FCS does not have a TS delineating sluice gate operability. The functionality determination required that divers confirm that the sluice gates were closed. On August 25, 2012, divers documented the following gaps between the sluice gate bottom edge and the concrete resting floor:

CW-14A: 1.5 inches
CW-14B: 1 inch
CW-14C: 1 inch
CW-14D: 1 inch
CW-14E: 3 inches
CW-14F: 2.5 inches

On August 25, 2012, divers removed the sediment from all sluice gate bottoms and a 3-inch tree branch from CW-14E, returning the sluice gates' capability to be fully closed in the event of a design basis flood.

On September 17, 2012, this event was determined to be reportable under 10 CFR 50.73(a)(2)(v)(B), any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to remove residual heat. It was later determined that the condition should have also been reported under 10 CFR 50.72(b)(3)(v)(B), any event or condition that at the time of discovery could have prevented the fulfillment of the safety function of structures or systems that are

NARRATIVE

needed to remove residual heat. The failure to make the required 8-hour notification has been entered in to the station's corrective action program as CR 2013-01073.

CONCLUSION

The cause of the failure of the sluice gates to fully close was debris under the gates. The Apparent Cause is the process for closing the Sluice gates within OI CW-2 did not adequately account for river debris obstructions.

CORRECTIVE ACTIONS

The debris was removed from under the gates and the gates were fully closed.

A preventive maintenance activity was created to cycle CW-14A/B/C/D/E/F through their full range of travel in ensure availability for flood mitigation (CR 2012-10206-013 AI, completed February 22, 2012). This activity is currently performed monthly and is performed to ensure the sluice gates perform their safety function.

A flood impairment has been placed in the control room to provide direction for verifying full closure and flushing sediment and debris that could prevent the gates from fully closing during a design flooding event and a procedure change to OI-CW-2 has been initiated.

SAFETY SIGNIFICANCE

The loss of the ability to close the intake structure sluice gates during flood conditions could lead to the loss of the raw water pumps which supply cooling water component cooling water heat exchangers. The raw water system also provides direct cooling for the following safety related components in the event that the component cooling water system is unavailable: the shutdown cooling heat exchangers, the high/low pressure safety injection pump bearing oil and seal coolers, the containment spray pump bearing oil and seal coolers, and the control room air conditioners.

In the event of a design basis accident, the component cooling water system is designed to provide sufficient cooling water to the engineered safeguards equipment.

SAFETY SYSTEM FUNCTIONAL FAILURE

This event does result in a safety system functional failure in accordance with NEI-99-02, Regulatory Assessment Performance Indicator Guideline.

PREVIOUS EVENTS

Five LERs with event dates since March 1, 2010, were identified with the same reporting criteria;

One LER, 2012-001-0, Inadequate Flooding Protection Procedure, is directly related to this event.

The compensatory actions that were identified and were implemented for LER 2012-001-0 were:

1. The station revised AOP-01, Acts of Nature, Section I – Flood, and Attachment D, Flooding Protective Actions, and the Floating Step Monitoring Index. Corrections were made to add steps to provide alternate filling capability for maintaining Intake cell level.

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2. Changes were also made to Operating Instruction CW-1, “Circulating Water System Normal Operation,” to address deficiencies in controlling the circulating water system during design basis conditions.

However, the changes that were made to the procedures identified in 1 and 2 above did not address the prevention of fouling during the closing function of the six external sluice gates or the changes needing to be made to Operating Instruction CW-2. Until the event in this LER (2012-019-0), fouling was corrected by issuing a flood impairment and then having divers clear the fouling. Step 4.1.3 of SO-G-124, Flood Barrier Impairment, Revision 4a, states the following:

> If a degraded flood barrier is identified, a Condition Report shall be generated as required per Standing Order SO-R-2 (Condition Reporting and Corrective Action). Within 24 hours, a Flood Barrier Impairment Permit (FC-1411) shall be implemented until the degraded condition has been resolved.

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