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

LIC-12-0065
May 11, 2012

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

Reference: Docket No. 50-285

Subject: Licensee Event Report 2012-003, Revision 0, for the Fort Calhoun Station

Please find attached Licensee Event Report 2012-003, Revision 0, dated May 11, 2012. This report is being submitted pursuant to 10 CFR 50.73(a)(2)(ii)(B).

If you should have any questions, please contact me.

Sincerely,

D. J. Bannister
Site Vice President and CNO

DJB /epm

Attachment
c: E. E. Collins, Jr., NRC Regional Administrator, Region IV
L. E. Wilkins, NRC Project Manager
J. C. Kirkland, NRC Senior Resident Inspector
INPO Records Center

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
Fort Calhoun Station	05000285	1 OF 3

4. TITLE

Non-Conservative Error in Calculation for Alternate Hot Leg Injection Results in Unanalyzed Condition

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
3	12	2012	2012	- 003 -	0	5	11	2012	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)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☒ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ OTHER
☐ 20.2203(a)(2)(vi)	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	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
7	13	2012

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

A non-conservative error was identified in the input calculation for post-LOCA cooling flow (post-RAS (recirculation actuation signal)). The calculation used an incorrect (non-conservative) input for LPSI pump performance. The associated procedure (EOP/AOP Attachment 11) as written does not provide adequate direction during the Alternate Hot Leg Injection mode of operation. Therefore, the procedural guidance may not ensure the completion of the safety function of providing adequate core cooling during the Alternate Hot Leg Injection mode of operation under a worst case scenario.

A cause analysis is in progress and the results will be included in a supplement to this LER.

Corrective actions to address the causes of this condition will be documented in a supplement to this LER.

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REV NO.	
Fort Calhoun Station	05000285	2012	- 003	- 0	2 OF 3

NARRATIVE

BACKGROUND

Fort Calhoun Station (FCS) is a two loop Combustion Engineering, pressurized water reactor. The FCS Safety Injection (SI) system consists of three High Pressure Safety Injection (HPSI) pumps, associated piping and valves; three Containment Spray (CS) pumps, associated piping and valves; and two Low Pressure Safety Injection (LPSI) pumps, associated piping and valves. During accident conditions Emergency Operating Procedures (EOPs) and Abnormal Operating Procedures (AOPs) are used to ensure safe operation of the plant.

The primary function of the LPSI system is to provide emergency core cooling following a loss-of-coolant-accident (LOCA). The LPSI system is designed to achieve this in conjunction with the operation of one HPSI pump and one emergency diesel generator during worst case accident conditions.

Long-term cooling and recirculation are mainly accomplished by the HPSI system. However, the LPSI pumps can be used to obtain increased recirculation cooling flow once the reactor coolant system pressure is reduced to approximately the same as the containment building pressure. The LPSI pumps may be used to inject uncooled water, or a portion of their discharge may be diverted through the shutdown cooling heat exchanges before being injected back into the Reactor Coolant System (RCS). If only one HPSI pump is available, one LPSI pump in conjunction with the available HPSI pump will be used for simultaneous hot and cold leg injection in accordance with EOP/AOP Attachment 11, "Alternate Hot Leg Injection," via the shutdown cooling flow path. Hot leg injection is normally accomplished with two HPSI pumps via a cross tie to the Chemical Volume and Control System (CVCS).

EVENT DESCRIPTION

The minimum analyzed flow for a LPSI pump is 150 gpm. The calculation does not clearly demonstrate that this flow is maintained during some accident conditions. The associated procedure (EOP/AOP Attachment 11) as written does not provide adequate direction during the Alternate Hot Leg Injection mode of operation to ensure this requirement is met.

EOP/AOP Attachment 11 requires that RCS pressure be less than 140 pounds per square inch absolute (psia) as the entry point for the procedure. The LPSI pumps may not be able to meet minimum flow requirements for long term pump operation at this pressure, which could result in pump damage. The minimum required RCS hot leg injection flow is 134 gpm may not be met with current procedural guidance and instrument accuracy limitations. Therefore, procedural guidance may not ensure completion of the safety function of providing adequate core cooling during the Alternate Hot Leg Injection mode of operation under a worst case scenario.

On April 25, 2012, at 1622 Central Daylight Time (CDT) an eight-hour notification per 10 CFR 50.72(b)(3)(ii)(B) was made to the Headquarters Operation Office (HOO) (Event Number 478620). This report is being made per 10 CFR 50.73(a)(2)(ii)(B).

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Fort Calhoun Station	05000285	2012	- 003 -	0	3 OF 3

NARRATIVE

CONCLUSION

A cause analysis is in progress and the results will be included in a supplement to this LER.

CORRECTIVE ACTIONS

The station is currently in a refueling mode. Corrective actions to address the causes of this condition will be documented in a supplement to this LER.

SAFETY SIGNIFICANCE

An evaluation of the safety significance of this issue will be completed following the completion of the cause analysis.

SAFETY SYSTEM FUNCTIONAL FAILURE

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

PREVIOUS EVENTS

No previous qualifications issues with hot leg injection have been identified.

LICENSING CORRESPONDENCE REVIEW FORM

LIC-12-0065

Date Issued: 5/9/12 **Requested Return Date: 5/10/12**

Review/Approval		Information	
Dave Bannister		Lynn Smith	
Susan Baughn		Woody Goodell	
J. Herman			
S. Miller			
C. Cameron			
M. Cooper			
M. Friedman			

Subject LER 2012-003 "Non-Conservative Error in Calculation for Alternate Hot Leg Injection Results in Unanalyzed Condition"

Please review and approve the attached draft correspondence (referenced above). In order to document your review for our records, please sign this form and return it to the Licensing Coordinator. If no notification is received by the requested return date, your concurrence with no comment will be assumed.

_____ E. Matzke 6855
Technical Coordinator (Ext.) Licensing Coordinator (Ext.)

[ ] Approved with no comment. [ ] Approved pending resolution of comments as noted.

Comments: _____

_____ _____
Reviewer's Signature Date

LICENSING CORRESPONDENCE REVIEW FORM SUMMARY

LIC-12-0065

Date Issued: 5/9/12 Requested Return Date: 5/10/12

Name	Date Comments Received	No Comments[1]	Comments - How Resolved[2]
Dave Bannister	5/10/12		Corrected discussed and resolved
J. Herman	none		
Woody Goodell	none		
S. Miller	none		
Susan Baughn	5/10/12		Discussed and corrected
C. Cameron	5/10/12		Discussed and corrected
M. Friedman	5/10/12		Discussed and corrected
Lynn Smith	none		
Mike Cooper	5/10/12		Discussed and corrected

Subject: LER 2012-003 "Non-Conservative Error in Calculation for Alternate Hot Leg Injection Results in Unanalyzed Condition"	
NOTE – This submittal does ____ does not __X__ include documents/files on CD-ROM.[3]	
NL Comment Coordinator Signature E. Matzke	Date 5/10/12
Responsible Dept. Manager (if required)	Date
Review by Nuclear Licensing Supervisor	Date

[1] Attach only signed Licensing Correspondence Review Form.
[2] Attach necessary documentation.
[3] Ensure that the CD-ROM files are formatted properly for electronic information exchange (EIE) to the NRC. (Reference NL-17)