WOLF CREEK
NUCLEAR OPERATING CORPORATION

Matthew W. Sunseri
Vice President Operations and Plant Manager

June 23, 2008

WO 08-0015

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Subject: Docket No. 50-482: Licensee Event Report 2008-005-00, Unanalyzed Condition Discovered Due To Improperly Installed Fuse In Class 1E Electrical Equipment Room Cooler

Gentlemen,

The enclosed Licensee Event Report (LER) 2008-005-00 is being submitted pursuant to 10 CFR 50.73(a)(2)(ii)(B) regarding an unanalyzed condition that could potentially affect postfire safe shutdown equipment availability at Wolf Creek Generating Station.

Commitments made by Wolf Creek Nuclear Operating Corporation in the enclosed LER are identified in the Attachment to this letter.

If you have any questions concerning this matter, please contact me at (620) 364-4008, or Mr. Richard D. Flannigan, Manager Regulatory Affairs at (620) 364-4117.

Sincerely,

M W Sunseri

Matthew W. Sunseri

MWS/rlt

Attachment
Enclosure

cc: E. E. Collins (NRC), w/a, w/e
V. G. Gaddy (NRC), w/a, w/e
B. K. Singal (NRC), w/a, w/e
Senior Resident Inspector (NRC), w/a, w/e

IE22
NRR

LIST OF COMMITMENTS

The following table identifies those actions committed to by Wolf Creek Nuclear Operating Corporation in this document. Any other statements in this letter are provided for information purposes and are not considered regulatory commitments. Please direct questions regarding these commitments to Mr. Richard Flannigan, Manager Regulatory Affairs at Wolf Creek Generating Station, (620) 364-4117.

REGULATORY COMMITMENT	DUE DATE
The remaining twenty circuits in the plant with redundant post fire safe shutdown fusing will be examined to verify that the fuses are wired correctly.	Prior to plant startup following Refueling Outage 17.
Procedure AP 16E-002, 'Post Maintence Testing Development,' will be revised to ensure equipment with redundant fusing are properly wired.	December 19, 2008

NRC FORM 366 (6-2004) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 06/30/2007

Estimated burden per response to comply with this mandatory collection request: 50 hours. 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, 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
WOLF CREEK GENERATING STATION	05000 482	1 OF 3

4. TITLE

Unanalyzed Condition Discovered Due To Improperly Installed Fuse In Class 1E Electrical Equipment Room Cooler

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
04	26	2008	2008	- 005 -	00	06	23	2008	FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE

6

10. POWER LEVEL

000

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)*
Richard D Flannigan, Manager Regulatory Affairs	(620) 364-4117

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REORT

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 26, 2008, while trouble shooting a loss of the 'B' train Class 1E electrical equipment room cooler, it was discovered that the redundant fuse used to ensure the cooler can be started after a control room fire was installed in series with the control power transformer secondary side fuse, not in parallel as per design. In the series configuration, if an electrical short occurs on the Control Room side of the circuit and blows the fuse, the "isolated" portion of the circuit, fed from the redundant fuse, would also lose power. Therefore, the circuit could not be re-energized and the air conditioning unit could not be re-started in the event of a Control Room Fire.

At the time of the discovery, Wolf Creek Generating Station was in a refueling outage in Mode 6.

The room cooler unit had been replaced in 2003. The vendor incorrectly wired the fuses in series. There were no compensatory measures required since the plant was in Mode 6. The configuration was corrected prior to entering Mode 4.

LICENSEE EVENT REPORT (LER)

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17. NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)*

PLANT CONDITIONS PRIOR TO EVENT:

MODE – 6
Power – 000

BACKGROUND:

Selected plant equipment is required for shutting down the plant and maintaining it in a hot standby conditon in the event of a temporary evacuation of the control room due to a fire. Switches and redundant fuses are provided to isolate the equipment from the control room to ensure the equipment can be operated from outside the control room. The redundant fuses are provided to ensure control power is available after the control room has been isolated.

The Class 1E electrical equipment room cooler units [EIIS Code: VI-ACU] are included in the post fire safe shutdown design to ensure adequate room cooling for the operating train of safety related electrical equipment. The air conditioning units provide a support function for Class 1E electrical equipment required for safe shutdown. If an electrical short occurs on the control room side of the circuit and blows the fuse, the "isolated" portion of the circuit, fed from a fuse in parallel, would allow the air conditioning units to be re-started and continue to provide room cooling.

EVENT DESCRIPTION:

On April 26, 2008, while trouble shooting a loss of the 'B' train Class 1E electrical equipment room cooler, it was discovered that the redundant fuse used to ensure the cooler can be started after a control room fire was installed in series with the control power transformer secondary side fuse, not in parallel as per design. In the series configuration, if an electrical short occurs on the control room side of the circuit and blows the fuse, the "isolated" portion of the circuit, fed from the redundant fuse, would also lose power. Therefore, the circuit could not be re-energized and the air conditioning unit could not be re-started in the event of postulated damage to the circuit as a result of a control room fire.

The loss of the Class 1E electrical equipment room cooler does not directly result in loss of capability to achieve and maintain safe shutdown in the event of a fire. Rather, room heating beyond design limits could reduce the life of electrical components within the electrical equipment rooms.

Qualification data exists to show that some components in the electrical equipment rooms will survive the expected room temperatures and be functional following a loss of room cooling. Data does not exist for each and every component within the electrical equipment rooms, so it is indeteminate if all equipment would be functional following a loss of room cooling. Therefore, this condition resulted in an unanalyzed condition that could potentially affect post-fire safe shutdown equipment availability.

The Wolf Creek Generating Station (WCGS) was in Mode 6 during refueling outage 16, at the time of the discovery. There were no compensatory measures required since the plant was in Mode 6. The configuration was corrected prior to entering Mode 4.

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17. NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)*

BASIS FOR REPORTABILITY:

10CFR50 Appendix R Section III.L.7 requires "The safe shutdown equipment and systems for each fire area shall be known to be isolated from associated non-safety circuits in the fire area such that hot shorts, open circuits, or shorts to ground in the associated circuits will not prevent operation of the safe shutdown equipment." Based on this information, WCNOC made an eight hour Emergency Notification System call in accordance with 10 CFR 50.72(b)(3)(ii)(B).

This condition is also reportable pursuant to 10 CFR 50.73(a)(2)(ii)(B) for any event or condition that resulted in the nuclear power plant being in an unanalyzed condition that significantly degraded plant safety.

ROOT CAUSE:

The 'B' train Class 1E electrical equipment room cooler, power and control cabinets, were replaced in the fall of 2003. The vendor incorrectly wired the line side of the dedicated post fire safe shutdown control power transformer isolation fuse to the load side of the control room supply fuse. This placed both the isolate and remote power supply fuses of the control power transformer in series instead of the required parallel configuration. The termination error rendered the post fire safe shutdown redundant isolation fuse incapable of performing its intended design function to supply independent isolated control power to the circuit in the event of a control circuit fault due to a fire in the control room. Normal testing of the circuit did not catch the error.

CORRECTIVE ACTIONS:

The wiring for the fuses was corrected to place them in parallel prior to entering Mode 4.

Over the 23 years of plant operation no other redundant fuse incorrect wiring issues are known to have been found. As a precaution, the additional twenty circuits in the plant with redundant post fire safe shutdown fusing will be examined to verify that the fuses are wired correctly. This will be accomplished prior to plant startup following Refuel Outage 17.

Procedure AP 16E-002, 'Post Maintence Testing Development,' will be revised by December 19, 2008, to ensure equipment with redundant fusing are properly wired.

SAFETY SIGNIFICANCE:

This issue is of low safety significance. Loss of the Class 1E electrical equipment room cooler units does not automatically cause inoperability of the associated Class 1E electrical equipment. There is reasonable assurance that safe shutdown would be achieved if a fire occurred in the control room that resulted in a loss of Class 1E electrical equipment room cooling.

OPERATING EXPERIENCE/PREVIOUS EVENTS:

None.