

# WOLF CREEK

NUCLEAR OPERATING CORPORATION

Matthew W. Sunseri  
Vice President Operations and Plant Manager

December 19 , 2008

WO 08-0028

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

Subject: Docket No. 50-482: Licensee Event Report 2008-009-00,  
Inadequate Compensatory Actions for a Fire Area

Gentlemen,

The enclosed Licensee Event Report (LER) 2008-009-00 is being submitted pursuant to 10 CFR 50.73(a)(2)(ii)(B) regarding an unanalyzed condition that could potentially affect post fire 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,



Matthew W. Sunseri

MWS/rit

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.

<b>REGULATORY COMMITMENT</b>	<b>DUE DATE</b>
A review of all manual actions credited for fires outside the control room will be conducted, to ensure the manual action does not result in a secondary impact that could adversely impact the ability to achieve and maintain safe shutdown.	December 31, 2009
A modification will be made to ensure the pressurizer PORVs can be closed from the control room.	Prior to Startup following Refueling Outage 18

# 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: 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.

<b>1. FACILITY NAME</b> WOLF CREEK GENERATING STATION	<b>2. DOCKET NUMBER</b> 05000 482	<b>3. PAGE</b> 1 OF 4
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**4. TITLE**  
Inadequate Compensatory Actions for a Fire Area

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
10	21	2008	2008	009	00	12	19	2008		05000
									FACILITY NAME	DOCKET NUMBER
										05000

<b>9. OPERATING MODE</b> 1	<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§:</b> <i>(Check all that apply)</i>			
<b>10. POWER LEVEL</b> 100	<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 checked="" 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 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 D Flannigan, Manager Regulatory Affairs	TELEPHONE NUMBER <i>(Include Area Code)</i> (620) 364-4117
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**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
A	AB	RV	W351	N					

<b>14. SUPPLEMENTAL REPORT EXPECTED</b> <input type="checkbox"/> YES <i>(If yes, complete 15. EXPECTED SUBMISSION DATE)</i> <input checked="" type="checkbox"/> NO	<b>15. EXPECTED SUBMISSION DATE</b>	MONTH	DAY	YEAR

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

Wolf Creek Nuclear Operating Corporation (WCNOC) did not establish compensatory measures as required by its' License and by procedure, when it was discovered that post-fire safe shutdown capability could be adversely affected if a fire occurs in the Control Rod Drive/Motor-Generator Set Room located in the Auxiliary Building (fire area A-27). A fire in area A-27 could cause a pressurizer power operated relief valve to spuriously open. The manual actions established to mitigate this condition would cause a loss of Class 1E 125 VDC power to a number of Train B components that are required for safe shutdown if a fire occurs in area A-27. The compensatory measure that should have been taken was the establishment of an hourly fire watch. This condition was self identified by WCNOC but no compensatory measures were established at that time due to the misapplication of RIS 2004-03.

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**17. NARRATIVE**

**PLANT CONDITIONS PRIOR TO EVENT:**

MODE – 1  
Power – 100

**EVENT DESCRIPTION:**

Wolf Creek Nuclear Operating Corporation (WCNOC) conducted a self assessment of the WCNOC Post-Fire Safe Shutdown Analysis (PFSSDA). As a result of this self assessment, in August 2008, WCNOC identified a concern with the mitigation strategy for fire induced spurious opening of a pressurizer power operated relief valve (PORV) [EIS Code: AB RV] in the event of a fire outside the control room. The mitigation strategy is to de-energize DC power to the valve to close the valve. In addition, since the Wolf Creek Generating Station (WCGS) license requirements require WCNOC to consider proper polarity cable-to-cable hot shorts when analyzing the PORV circuits, it is necessary to fail DC power to all potential sources running in a common raceway with the PORV circuits. Therefore, it is necessary to de-energize DC control power to the entire DC bus. This causes a loss of DC control power to several components.

The corrective action evaluation, from the self assessment, stated that this mitigation strategy is used in 15 fire areas where one pressurizer PORV could open. In 14 of the 15 areas, the Train of DC power that is being de-energized is the same Train that is affected by the fire and the credited Train of equipment remains available. However, in 1 fire area (area A-27) the Train of DC power [EIS Code: EJ] that is being de-energized is the same Train that is credited to achieve safe shutdown. The evaluation further explained that spurious opening of a PORV is not likely based on the regulatory position in Regulatory Issue Summary (RIS) 2004-03, Rev. 1 which states that cable-to-cable hot shorts involving thermoset cables is substantially less likely than intra cable shorting.

During the Triennial Fire Protection Inspection, it was discovered that the evaluation inappropriately used RIS 2004-03 to consider risk insights in the decision to not establish compensatory measures. RIS 2004-03 is not a licensing document. Therefore, the WCGS license basis that requires consideration of all possible hot shorts, open circuits, and shorts to ground should have been applied to establish compensatory measures.

A concern was also raised that the mitigation strategy to close a failed open PORV could lead to unwanted consequences. These consequences include loss of breaker function due to the loss of 125 VDC control power to a number of 4,160 VAC switchgear breakers and 480 VDC load center feeder breakers. This would both prevent operation of the associated equipment from the control room and prevent the breaker from opening if a fault occurred on an energized conductor. In addition, since Wolf Creek credits primarily Train B components if a fire occurs in area A-27, isolation of Train B Class 1E 125 VDC power could result in a number of credited components not operating.

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**17. NARRATIVE**

**BASIS FOR REPORTABILITY:**

Appendix R to 10 CFR 50, Section II.B states: "A fire hazards analysis shall be performed by qualified fire protection and reactor systems engineers to ... (2) determine the consequences of fire in any location in the plant on the ability to safely shut down the reactor ...". In addition, Section III.G of Appendix R provides the requirements for fire protection of safe shutdown capability and provides options deemed acceptable to the NRC for protecting redundant post-fire safe shutdown cables or equipment. In addition, Section III.G of Appendix R provides the requirements for fire protection of safe shutdown capability and provides options deemed acceptable to the NRC for protecting redundant post-fire safe shutdown cables or equipment.

A fire in area A-27 could cause a pressurizer power operated relief valve to spuriously open. The manual actions established to mitigate this condition would cause a loss of Class 1E 125 VDC power to a number of Train B components that are required for safe shutdown if a fire occurs in area A-27. This condition was self identified by Wolf Creek but no compensatory measures were established at that time.

Because compensatory measures were not established, Wolf Creek 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 of condition that resulted in the nuclear power plant being in an unanalyzed condition that significantly degraded plant safety.

**ROOT CAUSE:**

An action from an evaluation in 2002 was to proceduralize operator manual actions credited for fires outside the control room. WCNOG did not have a detailed analysis of the design basis for all of the Fire Areas at that time. The manual action to de-energize the bus was added to the procedure without being sufficiently evaluated to identify the unwanted consequences. When the information for Fire Area A-27 was formalized and issued through a Design Change Package, the thought process of the workers was already established to de-energize DC control power to the entire DC bus. Therefore the action to establish an hourly fire watch was not performed.

**CORRECTIVE ACTIONS:**

An hourly fire watch is in place in fire area A-27 and will remain in place until this condition is resolved.

WCNOG's design change process was verified to be sufficiently robust. Engineering personnel were counseled against having a preconceived mind-set when performing a design change.

A review of all manual actions credited for fires outside the control room will be conducted, to ensure the manual action does not result in a secondary impact that could adversely impact the ability to achieve and maintain safe shutdown. This review will be completed by December 31, 2009.

A modification will be made to ensure the pressurizer PORVs can be closed from the control room. This modification will be completed prior to plant startup following Refueling Outage 18.

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**17. NARRATIVE**

**SAFETY SIGNIFICANCE:**

This condition is considered low safety significance because a fire of sufficient magnitude to cause the postulated damage is not considered to be credible due to the low combustible loading in fire area A-27. This condition causes no equipment operability or plant reliability problems. There are no nuclear safety, environmental stewardship or reactivity management issues associated with this condition.

**OPERATING EXPERIENCE/PREVIOUS EVENTS:**

None.