WOLF CREEK
NUCLEAR OPERATING CORPORATION

Matthew W. Sunseri
Vice President Operations and Plant Manager

October 3, 2008
WO 08-0025

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

Subject: Docket No. 50-482: Licensee Event Report 2008-008-00, Potential for Residual Heat Removal Trains to be Inoperable during Mode Change

Gentlemen,

The enclosed Licensee Event Report (LER) 2008-008-00 is being submitted pursuant to 10 CFR 50.73(a)(2)(i)(B) regarding an operation or condition prohibited by Technical Specifications at Wolf Creek Generating Station.

This letter contains no commitments. 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

Enclosure

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

IE22
NRR

NRC FORM 366 (9-2007) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 08/31/2010

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

Potential for Residual Heat Removal Trains to be Inoperable during Mode Change

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	04	2008	2008	- 008 -	00	10	03	2008	FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE

1

10. POWER LEVEL

100

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 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 4, 2008, during a review for potential void formation to address Generic Letter 2008-01, a concern with the Residual Heat Removal (RHR) system during Mode 4 and Mode 3 was identified.

Wolf Creek Generating Station typically will line up one or both of the RHR trains to the Reactor Coolant System (RCS) for shutdown cooling and secure them prior to entering Mode 3 from Mode 4. System procedures require the RHR system to be cooled down, using the mini-flow line through the RHR heat exchanger, when it is lined up to injection mode. The physical location where the mini-flow piping connects to the suction of the RHR system does not adequately cool approximately 140 feet of the RHR suction line. The temperature in the RHR suction line can remain near 350 degrees F for several hours. The saturation pressure for this heated water can prevent the check valve from the Refueling Water Storage Tank (RWST) from opening, preventing flow to the suction of the RHR pumps during a Mode 3 Loss of Coolant Accident (LOCA).

A review of plant conditions during the startup of Wolf Creek from Refuel Outage 16 showed that the condition existed when changing from Mode 4 to Mode 3 on May 10, 2008.

LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
WOLF CREEK GENERATING STATION	05000 482	2008	-- 008	-- 00	2 OF 3

17. NARRATIVE

PLANT CONDITIONS PRIOR TO EVENT:

MODE – 1
Power – 100

EVENT DESCRIPTION:

On August 4, 2008, during a review for potential void formation to address Generic Letter 2008-01, a concern with the Residual Heat Removal (RHR) system [EIIS Code: BP] during Mode 4 and Mode 3 was identified.

Wolf Creek typically will line up one or both of the RHR trains to the Reactor Coolant System (RCS) [EIIS Code: AB] for shutdown cooling and secure them prior to entering Mode 3 from Mode 4. System procedures require the RHR system to be cooled down using the mini-flow recirculation line, following alignment for Emergency Core Cooling System (ECCS) injection mode. The physical location at which the mini-flow piping connects to the suction of the RHR system prevents approximately 140 feet of RHR suction line between the RCS hot leg isolation valve and the mini-flow line location from being adequately cooled.

If the RHR system is aligned to ECCS injection Mode with water temperature near 350 degrees F, the water will remain hot for considerable duration in the RHR suction piping. If a Mode 3 Loss of Coolant Accident (LOCA) were to occur and Safety Injection System (SIS) initiated [EIIS Code: JE], the RHR pump would start, resulting in lowering the pressure in the suction piping. This lowering of pressure will result in flashing the water into steam, depending upon the water temperature. As long as the saturation pressure in the RCS hot leg is higher than the static pressure from the Refueling Water Storage Tank (RWST), the check valve located in the supply line from the RWST, will not open and no injection will occur. As the RHR pump is started, the pressure in the RCS hot leg will decrease which will cause the hot pressurized water to flash, before the pressure reaches low enough to open the check valve. The steam void could extend to the pump suction and steam bind the pump.

A review of plant conditions during the startup of Wolf Creek from Refuel Outage 16 showed that the condition existed when changing from Mode 4 to Mode 3 on May 10, 2008. As a result, RHR was not operable as required per Technical Specification 3.5.2 and 3.5.3.

BASIS FOR REPORTABILITY:

Wolf Creek changed from Mode 4 to Mode 3 without ensuring the RHR system was operable. This event is reportable under 10 CFR 50.73(a)(2)(i)(B) as operation or condition prohibited by Technical Specifications.

ROOT CAUSE:

The root cause was an inadequate evaluation of operating experience. Westinghouse NSAL–93-004 described this concern. Wolf Creek reviewed the NSAL in 1993 and concluded that using the RHR pump discharge temperature was adequate for ensuring the RHR piping was cooled down. Under further review, RHR discharge temperature is not an adequate indication of the suction line conditions since only a portion of the suction line can be forced cooled.

LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
WOLF CREEK GENERATING STATION	05000 482	2008	-- 008	-- 00	3 OF 3

17. NARRATIVE

CORRECTIVE ACTIONS:

Operations procedures were revised to ensure, when RHR is aligned to ECCS injection mode, that the temperature of the RHR suction lines from the RCS isolation valve are within prescribed limits.

SAFETY SIGNIFICANCE:

At the time the condition was discovered, Wolf Creek was in Mode 1, at 100% power, and both RHR systems were operable. The potential existed that during a forced outage, or refueling outage, that the RHR system would not have functioned if a LOCA were to occur in Mode 3, if the water in the RHR suction pipe was not adequately cooled down.

OPERATING EXPERIENCE/PREVIOUS EVENTS:

None.