WOLF CREEK
NUCLEAR OPERATING CORPORATION

Russell A. Smith
Plant Manager

February 4, 2011

WO 11-0006

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

Subject: Docket No. 50-482: Licensee Event Report 2010-014-00, "Technical Specification Required Shutdown Due to Inadequate Planning Resulting in Extended Emergency Diesel Generator Inoperability"

Gentlemen:

During planned maintenance on the Train 'A' emergency diesel generator (EDG), Wolf Creek Nuclear Operating Corporation was unable to return the EDG to operable status within the seven-day completion time of Technical Specification 3.8.1. The enclosed Licensee Event Report (LER) is being submitted pursuant to 10 CFR 50.73(a)(2)(i)(A) to document this condition.

This letter contains no commitments. If you have any questions concerning this matter, please contact me at (620) 364-4156, or Mr. Gautam Sen at (620) 364-4175.

Sincerely,

Russell A. Smith

RAS/rlt

Enclosure

cc: E. E. Collins Jr (NRC) w/e
G. B. Miller (NRC) w/e
B. K. Singal (NRC) w/e
Senior Resident Inspector (NRC) w/e



IE22
NRR

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

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 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**
Technical Specification Required Shutdown Due to Inadequate Planning Resulting in Extended Emergency Diesel Generator Inoperability

| 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 |
| 12 | 06 | 2010 | 2010 | - 014 - | 00 | 02 | 04 | 2011 | FACILITY NAME | DOCKET NUMBER 05000 |

**9. OPERATING MODE**
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) |
|---|---|
| Gautam Sen, Manager Regulatory Affairs | (620) 364-4175 |

**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 |
|---|---|---|---|---|---|---|---|---|---|
| A | EK | DG | Fairbanks Morse | Y | | | | | |

**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 December 6, 2010, at 0948 Central Standard Time (CST), Wolf Creek Generating Station (WCGS) entered Mode 3 in accordance with Required Action H.1 of Technical Specification (TS) 3.8.1, "AC Sources – Operating." The TS required shutdown was due to inoperability of the Train 'A' emergency diesel generator (EDG), which was removed from service on November 29, 2010, for planned maintenance.

The cause of the TS required shutdown of WCGS was the inability to return the EDG to operable status within the seven-day completion time of Required Action B.4.2.2 of TS 3.8.1. The extended out-of-service time was due to excessive emergent work activities, including a drop in peak firing pressure in one cylinder during the surveillance run of the EDG.

The Command and Control structure used for seven-day TSEOs was changed to improve management of work delays and effectively control emergent work.

| 1. FACILITY NAME | 2. DOCKET | 6. LER NUMBER | | | 3. PAGE |
|---|---|---|---|---|---|
| | | YEAR | SEQUENTIAL NUMBER | REV NO. | |
| WOLF CREEK GENERATING STATION | 05000 482 | 2010 | -- 014 -- | 00 | 2 OF 3 |

PLANT CONDITIONS PRIOR TO EVENT

Mode 1
100% power

EVENT DESCRIPTION

At 0500 Central Standard Time (CST) on November 29, 2010, the Train 'A' emergency diesel generator (EDG) [EIIS Code: EK-DG] was removed from service for a scheduled seven-day Technical Specification Equipment Outage (TSEO) in accordance with Technical Specification (TS) 3.8.1 Condition B. The Wolf Creek Generating Station EDGs are Fairbanks Morse Pielstick Model 2.5 Diesel Generators. The scope of the TSEO included removal and replacement of the Jacket Water heat exchanger [EIIS Code: LB-HX] and preventative maintenance activities.

During the TSEO, a number of delays occurred and a high number of emergent work activities impacted the schedule. On December 6, 2010, the final surveillance run for declaring the Train 'A' EDG operable was being conducted per procedure STS KJ-015A, "Manual/Auto Fast Start, Sync & Loading Of EDG NE01." During the surveillance run, engine analysis identified that the peak firing pressure for cylinder No. 12 was almost 500 psig less than the data collected during the maintenance run performed on December 5, 2010. This condition occurred with approximately three hours left until the Allowed Outage Time for the TSEO was exceeded. It was determined that the condition could not be fixed within the remaining time in the TSEO.

On December 6, 2010, at 0418 CST, a shutdown of the reactor was commenced. Required Action H.1 of TS 3.8.1 was entered on December 6, 2010, at 0500 CST. As a result, Wolf Creek Generating Station (WCGS) entered Mode 3 on December 6, 2010, at 0948 CST.

The retaining bolt for the fuel injector pump timing adjustment lock plate on the No. 12 cylinder had backed out due to a loose/deformed keeper plate. This affected the timing of the injector pump and caused the reduction in the cylinder pressure. The remaining cylinders were inspected and no other problems were found.

Work on the Train 'A' EDG was completed and the EDG was returned to operable status on December 7, 2010 at 0100 CST. WCGS returned to Mode 1 on December 8, 2010 at 1848 CST.

| 1. FACILITY NAME | 2. DOCKET | 6. LER NUMBER | | | 3. PAGE |
|---|---|---|---|---|---|
| | | YEAR | SEQUENTIAL NUMBER | REV NO. | |
| WOLF CREEK GENERATING STATION | 05000 482 | 2010 | -- 014 -- | 00 | 3 OF 3 |

BASIS FOR REPORTABILITY

10 CFR 50.73(a)(2)(i)(A) requires reporting "the completion of any nuclear plant shutdown required by the plant's Technical Specifications." A shutdown of the plant was completed per TS 3.8.1 when Mode 3 was entered on December 6, 2010. Additionally, a 4-hour notification was made per 10 CFR 50.72(b)(2)(i) when the plant shutdown was initiated on December 6, 2010.

ROOT CAUSE

The cause of the plant shutdown was an excessive number of emergent work items occurred during the Train 'A' EDG TSEO. Each individual emergent work activity could have been managed within the allowed outage time, but the number and sequence of discovery was such that the cumulative effect of these activities precluded EDG recovery within the allowed out-of-service time. As a result, Wolf Creek Nuclear Operating Corporation was unable to restore the Train 'A' EDG within the allowed seven-day completion time of Required Action B.4.2.2 of TS 3.8.1.

CORRECTIVE ACTIONS

Prior to commencing the 'B' EDG TSEO, corrective actions included a re-evaluation of work package content, engineering dispositions, contingencies and workgroup preparations. Additionally, the Command and Control structure used for seven-day TSEOs was changed to improve management of work delays and effectively control emergent work. These actions ensured that a similar TSEO for the Train 'B' EDG in January 2011 was successfully completed.

SAFETY SIGNIFICANCE

This event is of low safety significance. The Train 'B' EDG, the off-site diesel gensets used for peak loading located at the Sharpe Station, and offsite power were available during the inoperability of the Train 'A' EDG.

OPERATING EXPERIENCE/PREVIOUS EVENTS

LER 2010-011-00 details the completion of a required Technical Specification shutdown due to water leakage from a buried portion of the Train 'A' Essential Service Water (ESW) system [EIIS Code: BI]. Subsequent Engineering evaluation of the through-wall leak concluded that the ESW system was capable of performing its design safety function.