WOLF CREEK
NUCLEAR OPERATING CORPORATION

Donna Jacobs
Vice President Operations and Plant Manager

December 10, 2004

WO 04-0054

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

Subject: Docket No. 50-482: Licensee Event Report 2004-006-00, Automatic Start of "B" Emergency Diesel Generator Due To Start-Up Transformer Fault

Gentlemen:

The enclosed Licensee Event Report (LER) 2004-006-00 is being submitted pursuant to 10 CFR 50.73(a)(2)(iv)(A) regarding an Engineered Safety Features Actuation at Wolf Creek Generating Station.

Wolf Creek Nuclear Operating Corporation has made no commitments in the enclosed LER.

If you should have any questions regarding this submittal, please contact me at (620) 364-4246 or Mr. Kevin Moles at (620) 364-4126.

Sincerely,

Donna Jacobs

DJ/rlg

Enclosure

cc: J. N. Donohew (NRC), w/e
D. N. Graves (NRC), w/e
B. S. Mallett (NRC), w/e
Senior Resident Inspector (NRC), w/e

IE22

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)

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4. TITLE

Automatic Start of "B" Emergency Diesel Generator Due to Start-Up Transformer Fault

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	11	2004	2004	- 006 -	00	12	10	2004		05000
									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)
- ☐ 20.2201(d)
- ☐ 20.2203(a)(1)
- ☐ 20.2203(a)(2)(i)
- ☐ 20.2203(a)(2)(ii)
- ☐ 20.2203(a)(2)(iii)
- ☐ 20.2203(a)(2)(iv)
- ☐ 20.2203(a)(2)(v)
- ☐ 20.2203(a)(2)(vi)
- ☐ 20.2203(a)(3)(i)
- ☐ 20.2203(a)(3)(ii)
- ☐ 20.2203(a)(4)
- ☐ 50.36(c)(1)(i)(A)
- ☐ 50.36(c)(1)(ii)(A)
- ☐ 50.36(c)(2)
- ☐ 50.46(a)(3)(ii)
- ☐ 50.73(a)(2)(i)(A)
- ☐ 50.73(a)(2)(i)(B)
- ☐ 50.73(a)(2)(i)(C)
- ☐ 50.73(a)(2)(ii)(A)
- ☐ 50.73(a)(2)(ii)(B)
- ☐ 50.73(a)(2)(iii)
- ☑ 50.73(a)(2)(iv)(A)
- ☐ 50.73(a)(2)(v)(A)
- ☐ 50.73(a)(2)(v)(B)
- ☐ 50.73(a)(2)(v)(C)
- ☐ 50.73(a)(2)(v)(D)
- ☐ 50.73(a)(2)(vii)
- ☐ 50.73(a)(2)(viii)(A)
- ☐ 50.73(a)(2)(viii)(B)
- ☐ 50.73(a)(2)(ix)(A)
- ☐ 50.73(a)(2)(x)
- ☐ 73.71(a)(4)
- ☐ 73.71(a)(5)
- ☐ OTHER

Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER *(Include Area Code)*
Kevin J. Moles, Manager Regulatory Affairs	(620) 364-4126

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
B	EA	LIS	W120	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 October 11, 2004, Wolf Creek Generating Station (WCGS) was operating at 100 percent steady power. At 7:25 A.M. Central Daylight Time, the Low-Low Oil Level trip activated on the startup transformer, tripping the transformer and resulting in a loss of power to the Engineered Safeguards Feature (ESF) bus NB02. The loss of power to the transformer that normally powers this bus resulted in the automatic start and subsequent loading of the "B" Emergency Diesel Generator (EDG). In addition, an Auxiliary Feedwater Actuation Signal (AFAS) started the Turbine Driven Auxiliary Feedwater Pump (TDAFP) per the plant design.

The cause of the transformer trip was due to a ground on the Low-Low Oil Level trip transmitter device, caused by degraded and cracked cable insulation immersed in moist insect debris.

The safety significance of this event is low. This event is bounded by the current licensing basis analysis as reported in WCGS Updated Safety Analysis Report (USAR) section 15.2.6 "Loss of Non Emergency AC Power to the Station Auxiliaries." All safety-related equipment operated as expected. There were no adverse effects to the health and safety of the public.

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

Background:

The startup transformer (XMR01) [EIIS Code: EA] provides electrical power from the switchyard and is the normal power source to the safety-related, Engineered Safeguards Feature (ESF) 4KV NB02 bus [EIIS Code: ED]. This transformer is a 345 kilovolt (kV) to 13.8 kV transformer with two windings ("X" winding and "Y" winding) on the low voltage (13.8 kV) side. Each winding has an "A", "B", and "C" phase bushing. The NB02 bus is protected by undervoltage relays which detect a loss of power condition to the XMR01 transformer and in turn de-energize the NB02 bus. The ESF Load Shedder and Emergency Load Sequencer (LSELS) [EIIS Code: EK] then initiates a signal to start the "B" Emergency Diesel Generator (EDG) [EIIS Code: EK] and restores the necessary loads to NB02.

Plant Conditions Prior to the Event:
MODE – 1
Power – 100 percent
Normal Operating Temperature and Pressure

Event Description:

On October 11, 2004, Wolf Creek Generating Station (WCGS) was operating at 100 percent steady state power. At 07:25 Central Standard Time, the XMR01 Low-Low Oil Level actuated which tripped the startup transformer. Following the loss of power to safety bus NB02, the Load Shedder and Emergency Load Sequencer (LSELS) initiated a signal to start the "B" Emergency Diesel Generator (EDG). LSELS then sequenced the necessary loads back onto the safety bus NB02. In addition, an Auxiliary Feedwater Actuation Signal (AFAS) started the Turbine Driven Auxiliary Feedwater Pump (TDAFP) [EIIS Code: BA] per the plant design. The control room operators lowered Main Generator load and Reactor power to account for the additional auxiliary feedwater flow to the steam generators. The TDAFP was secured at 07:48. At 08:04, the "B" Motor Driven Auxiliary Feedwater Pump (MDAFP) [EIIS Code: BA] was placed in pull-to-lock per procedure OFN NB-030 "LOSS OF AC EMERGENCY BUS NB01 (NBO2)" to prevent inadvertent automatic addition of feedwater to the steam generators.

At 11:25, the Turbine Driven Auxiliary Feedwater Pump trip and throttle valve was found to be in the latched position versus unlatched as it should be in the standby condition. After engineering review, the TDAFP was declared inoperable at 16:02. The "B" MDAFP was in the pull-to-lock position, per OFN NB-030, and was technically inoperable. With two auxiliary feedwater pumps inoperable, Technical Specification requires the plant to be in Mode 3 within six (6) hours. The "B" MDAFP control switch was returned to its normal position and the pump automatically started from the "B" train load sequencer. The "B" MDAFP was declared operable at 16:04.

At approximately 07:40, a cooling water leak on the condenser inlet end bell of the "B" train Control Room Air Conditioning Unit was discovered. The Shift Manager (SM) determined that the leakage did not prevent the 'B' ESW train from performing its safety function. Control Room air conditioning was shifted to the "A" train unit. The "B" train air conditioning unit was secured and its ESW supply isolated. The gasket on the condenser end bell was found to be leaking and the gasket was replaced. The "B" train air conditioning unit was restored to service at approximately 22:52 on October 11, 2004.

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

The startup transformer was returned to service at approximately 18:17 on October 12, 2004.

Basis for Reportability:

The actuation of the "B" EDG due to the loss of power to the NB02 ESF bus described in this event is reportable per 10 CFR 50.73(a)(2)(iv)(A), which requires reporting of "Any event or condition that resulted in manual or automatic actuation of any of the systems listed in paragraph (a)(2)(iv)(B) of this section."

Paragraph (B)(8) of 10 CFR 50.73(a)(2)(iv) includes "Emergency ac electrical power systems, including: emergency diesel generators (EDGs)."

Root Cause:

The grounding and activation of the XMR01 transformer Low-Low Oil Level protective device was caused by insect intrusion through the weep hole in the cable junction box located just below the protective device. Since plant construction, insect residue had built up and encased the connection wiring coming from the protective device. The insect debris caused failure of the wiring insulation.

Corrective Actions:

The Low-Low Oil Level protective device and faulted wiring were replaced. Other similar terminal boxes and inspection covers, seventeen in all, on XMR01 were checked for similar conditions with none being found. A complete walkdown of the switchyard west bus was performed, no additional equipment concerns were identified.

Safety Significance:

The safety significance of this event is low. This event is bounded by the current licensing basis analyses as reported in WCGS Updated Safety Analysis Report (USAR) section 15.2.6 "Loss of Non Emergency AC Power to the Station Auxiliaries." The "B" MDAFP was secured to minimize the addition of unnecessary heat to secondary makeup water. This event resulted in no adverse effects on the health and safety of the public.

Operating Experience/Previous Events:

A review of WCNOC License Event Reports submitted over the last 5 years revealed one instance where the root cause was from intrusion of foreign material in a weep hole or inspection hole. Though similar, the corrective actions are not applicable to this event.