

WOLF CREEK

NUCLEAR OPERATING CORPORATION

John A. Bailey
Vice President
Nuclear Operations

July 13, 1990

NO 90-0206

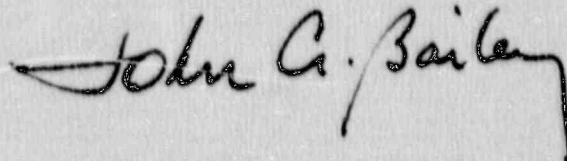
U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Station P1-137
Washington, D. C. 20555

Subject: Docket No. 50-482: Licensee Event Report 90-014-00

Gentlemen:

The attached Licensee Event Report (LER) is being submitted pursuant to 10 CFR 50.73(a)(2)(iv) concerning an Engineered Safety Features actuation.

Very truly yours,



John A. Bailey
Vice President
Nuclear Operations

JAB/jra

Attachment

cc: R. D. Martin (NRC), w/a
D. V. Pickett (NRC), w/a
M. E. Skow (NRC), w/a
J. S. Wiebe (NRC), w/a

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Wolf Creek Generating Station DOCKET NUMBER (2) 0 5 0 0 0 4 8 2 1 OF 0 4

TITLE (4) Potential Transformer Failure Causes Partial Loss of Offsite Power and Shut Down Sequencer Actuation

EVENT DATE (5) MONTH DAY YEAR YEAR LER NUMBER (6) SEQUENTIAL NUMBER REVISION NUMBER REPORT DATE (7) MONTH DAY YEAR OTHER FACILITIES INVOLVED (8) FACILITY NAMES DOCKET NUMBER (5) 0 5 0 0 0 0 0 5 0 0 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11) OPERATING MODE (9) 1 POWER LEVEL (10) 11010 20.402(b) 20.405(e) 50.38(e)(1) 50.73(a)(2)(ix) 73.71(b) 20.405(e)(1)(i) 50.38(e)(2) 50.73(a)(2)(v) 73.71(c) 20.405(e)(1)(ii) 50.73(a)(2)(vi) 50.73(a)(2)(vii) OTHER (Specify in Abstract below and in Text, NRC Form 365A) 20.405(e)(1)(iii) 50.73(a)(2)(i) 50.73(a)(2)(viii)(A) 20.405(e)(1)(iv) 50.73(a)(2)(ii) 50.73(a)(2)(viii)(B) 20.405(e)(1)(v) 50.73(a)(2)(iii) 50.73(a)(2)(ix)

LICENSEE CONTACT FOR THIS LER (12) NAME MERLIN G. WILLIAMS - Manager Plant Support TELEPHONE NUMBER AREA CODE 3 1 6 3 6 4 - 8 8 3 1

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13) CAUSE SYSTEM COMPONENT MANUFACTURER REPORTABLE TO NRCDS CAUSE SYSTEM COMPONENT MANUFACTURER REPORTABLE TO NRCDS X F K X P T N

SUPPLEMENTAL REPORT EXPECTED (14) YES (If yes, complete EXPECTED SUBMISSION DATE) X NO EXPECTED SUBMISSION DATE (15) MONTH DAY YEAR

ABSTRACT (Limit to 1430 spaces, i.e., approximately fifteen single space typewritten lines) (16)

On June 13, 1990, at 0859 CDT, a potential transformer located on switchyard transformer #7 failed causing a partial loss of offsite power resulting in a loss of power to transformer XNB01 and 4160 volt bus NB01. The loss of power to NB01 resulted in automatic starting of Emergency Diesel Generator 'A', shedding of loads from NB01, repowering NB01 from the Emergency Diesel Generator, and sequencing key loads back onto the NB01 bus by the Shut Down Sequencer. As expected, the turbine-driven Auxiliary Feedwater Pump started, and Control Room Ventilation Isolation, Containment Purge Isolation, and Fuel Building Isolation Signals were generated. All operable Engineered Safety Features equipment responded properly to the actuation signals.

Emergency Diesel Generator 'A' supplied power to the NB01 loads until 1125 CDT, when an alternate source of offsite power became available. By 1430 CDT, the potential transformer had been replaced and power to bus NB01 was re-established via the normal offsite power system configuration which is the #7 transformer. Licensee Event Report 87-030-00 discusses a previous similar potential transformer failure. In order to increase reliability, the existing potential transformers will be replaced with oil filled potential transformers with fuse protection.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

INTRODUCTION

On June 13, 1990, at 0859 CDT, a loss of power to Engineered Safety Features (ESF) Transformer XNB01 [EB-XFMR] and the 4160 volt bus NB01 [EB-BUS] occurred, causing an Emergency Diesel Generator [EK-DG] start and a Shut Down Sequencer [JE-STC] actuation. All operable ESF equipment responded properly to the actuation signals. This event is being reported per 10 CFR 50.73(a)(2)(iv) concerning unplanned actuations of ESF equipment.

DESCRIPTION OF EVENT

On June 13, 1990, the unit was operating in Mode 1, Power Operation, at approximately 100 percent rated thermal power. At 0859 CDT, a potential transformer [FK-XPT] located on switchyard transformer #7 [FK-XFMR] failed causing a partial loss of offsite power resulting in a loss of power to transformer XNB01 and bus NB01. The loss of power to NB01 resulted in automatic starting of Emergency Diesel Generator 'A', shedding of loads from NB01, repowering NB01 from the Emergency Diesel Generator, and sequencing key loads back onto the NB01 bus by the Shut Down Sequencer.

The loss of power to several radiation monitors [IL-MON] which sample the Containment Building [NH] atmosphere, Control Building [NA] air intake, and Fuel Building [ND] atmosphere resulted in signals to actuate a Control Room Ventilation Isolation, Containment Purge Isolation, and Fuel Building Isolation.

The undervoltage condition on NB01 also initiated actuation of the turbine-driven Auxiliary Feedwater Pump [BA-P] and a Steam Generator Blowdown and Sample Isolation Signal. Motor-driven Auxiliary Feedwater Pump 'A' [BA-P] and Centrifugal Charging Pump 'A' [BQ-P] were automatically started by the Shut Down Sequencer. The Shut Down Sequencer also separated the Essential Service Water System (ESW) [BI] from the normal Service Water System [KG] and automatically started ESW Pump 'A' [BI-P]. At 0900 CDT, the Control Room operators started ESW Pump 'B' to ensure availability of components served by the 'B' train of the ESW system.

All operable ESF equipment responded properly to the actuation signals. The 'B' train of the Control Room Emergency Ventilation System [VI] had previously been declared inoperable because of an inoperable damper and the appropriate Technical Specification Action Statement was being implemented.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

Following verification of proper functioning of ESF equipment, the turbine-driven Auxiliary Feedwater Pump was secured. The motor-driven Auxiliary Feedwater Pump 'A' and Centrifugal Charging Pump 'A' were secured and placed in pull-to-lock to prevent re-actuation. Entry was also made into the Technical Specification Action Statements for inoperability of these pumps. Entry was also made into the Technical Specification Action Statement for loss of one off-site power source.

At approximately 0914 CDT, System Operations established an alternate source of off-site power to the east switchyard bus from the Athens substation 69 kilovolt line through bus SL-7. By approximately 1052 CDT, the Athens line loading was reduced sufficiently to allow loading of the NB01 loads without a significant voltage drop and XNB01 was re-energized via the Athens line. At approximately 1125 CDT, NB01 loads were transferred to XNB01 and Emergency Diesel Generator 'A' was secured. The Technical Specification Action Statement for loss of one off-site power source was exited at that time.

The Auxiliary Feedwater Pump 'A' and Centrifugal Charging Pump 'A' were returned to "normal-after-stop" at 1127 CDT. The Technical Specification Action Statements for these pumps were exited at this time. The ESW pumps were secured at 1143 CDT, and the ventilation systems were restored to normal configuration shortly thereafter.

By 1307 CDT, the potential transformer in the #7 transformer was replaced and the #7 transformer was re-energized. By 1430 CDT, transformer XNB01 and bus NB01 were transferred back to the #7 transformer, which is the normal system alignment.

ROOT CAUSE AND CORRECTIVE ACTIONS

This event was caused by a failure of a potential transformer located on the #7 switchyard transformer. As an immediate corrective action, the failed potential transformer was replaced with an identical spare. The root cause of its failure is unknown.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20585, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

The failed potential transformer is a 14.4 KV to 120 V GE type transformer, Model JWVS. Licensee Event Report 87-030-00 discusses a previous similar event in which failure of this potential transformer occurred. In order to increase reliability, the existing potential transformers will be replaced with potential transformers of a different design. The replacements will be oil filled potential transformers with fuse protection. Subject to the availability of the new potential transformers and other needed material, the replacement effort will be completed by December 31, 1990.

ADDITIONAL INFORMATION

Because all ESF equipment performed as designed, and because no plant equipment was damaged and there was no release of radioactivity, at no time did conditions develop that posed a threat to the health or safety of the public.