

WOLF CREEK

NUCLEAR OPERATING CORPORATION

Bart D. Withers
President and
Chief Executive Officer

January 14, 1988

WM 88-0015

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

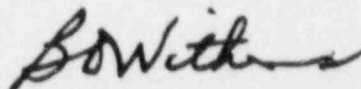
Subject: Docket No. 50-482: Special Report 87-016

Gentlemen:

The attached Special Report is being submitted pursuant to Technical Specifications 4.8.1.1.3 and 6.9.2. This report concerns a failure of Emergency Diesel Generator "B" which occurred when the diesel generator could not be synchronized to the bus.

If you have any questions concerning this matter, please contact me or Mr. O. L. Maynard of my staff.

Very truly yours,



Bart D. Withers
President and
Chief Executive Officer

BDW/lik

Attachment

cc: B. L. Bartlett (NRC), w/a
R. D. Martin (NRC), w/a
P. W. O'Connor (NRC), 2 w/a

IE 22
11

**WOLF CREEK GENERATING STATION
SPECIAL REPORT 87-016**

DIESEL GENERATOR 'B' FAILURE

INTRODUCTION

On December 19, 1987, at approximately 1442 CST, a failure of Diesel Generator (D/G) 'B' occurred when the D/G could not be synchronized to the bus. The D/G was unavailable for approximately 34 hours and 44 minutes while the problem was corrected. This Special Report is being submitted pursuant Technical Specifications 4.8.1.1.3 and 6.9.2.

ANALYSIS OF EVENT

The D/G was at speed and attempting to be synchronized during the yearly 24 hour run when the anomaly occurred. Maintenance was notified by Control Room personnel to investigate the problem. The cause was determined to be a bent stab on the potential transformer. The stab was adjusted back into place. The D/G was returned to service and the 24 hour run recommenced at approximately 0126 CST on December 21. The 24 hour run and associated testing was completed successfully at approximately 0915 CST on December 22.

ROOT CAUSE AND CORRECTIVE ACTIONS

The bent stab was caused by repeated opening and closing of the roll-out potential transformer (PT). As the PT is rolled back into place and if the stab does not realign properly, the stab could be bent and thus not allowing proper contact. It is not possible to visually detect this problem, as it is not visible with the PT closed. The first indication that this problem exists is when the PT does not function properly. An engineering evaluation is in progress to either preclude the stabs from being bent or to allow a visual examination of the stabs after the PT is closed. A supplement to this report will be issued upon completion of this evaluation.

ADDITIONAL INFORMATION

The output of the failed PT provides control power to the static exciter/voltage regulator and to the Woodward Governor control box.

The function of the static exciter/voltage regulator is to control the electrical output of the diesel generator through direct static excitation of the generator field winding. The subject PT provides the control voltage required for automatic voltage regulation.

The function of the Woodward Governor control box is to electrically control the speed of the diesel generator. The Woodward Governor also provides a mechanical governor system that will maintain speed control after a loss of control power to the electrical governor system.

January 14, 1988

Regulatory Guide 1.108 requires that diesel generator testing be performed to "demonstrate proper startup operation by simulating loss of all a.c. voltage and to demonstrate that the diesel generator can start automatically and attain the required voltage and frequency within acceptable limits and time" at least once every 18 months. Because the subject potential transformer could not provide the control voltage required to maintain automatic voltage regulation, the D/G could not be synchronized to the bus and, thus could not be successfully loaded after a successful start attempt. This event is therefore considered to be a valid test and failure in accordance with Regulatory Position C.2.e.(5) of Regulatory Guide 1.108, Revision 1.

As of January 5, 1988, there have been forty-one (41) valid successful tests of D/G 'B'. This is the first valid failure in the last 20 valid tests and therefore does not affect the current testing frequency of once per 31 days as required by Technical Specification Table 4.8-1.