

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

1750 Chestnut Street Tower II

February 9, 1983

Mr. James P. O'Reilly, Director
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region II
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

50-327
50-328

Dear Mr. O'Reilly:

TENNESSEE VALLEY AUTHORITY - SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2^e -
SPECIAL REPORT NO. 83-01

The enclosed special report provides details concerning diesel generator problems occurring during surveillance testing.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

J. A. Green
J. A. Green

Director of Nuclear Power

Enclosure

cc (Enclosure):

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

Records Center
Institute of Nuclear Power Operations
Suite 1500
1100 Circle 75 Parkway
Atlanta, Georgia 30339

NRC Inspector, Sequoyah

OFFICIAL COPY

TE 22

8302170182 830209
PDR ADOCK 05000327
S PDR

SEQUOYAH NUCLEAR PLANT

SPECIAL REPORT 83-01

The following events occurred with units 1 and 2 in mode 5.

1. On December 14, 1982, (at 0036C) diesel generator (D/G) 2B-B was started for its 24-hour run which is required by surveillance requirement 4.8.1.1.2.d.8. At 1447C on December 14, 1982, D/G 2B-B tripped on differential overcurrent. Following the trip, smoke was spotted coming from the back of the exciter panel. The initial inspection of the exciter high-voltage panel revealed several burned internal control cables, a damaged saturation transformer, and extensive carbon deposits along with other signs indicating phase-to-phase and phase-to-ground arcing. The initial cause of the fault was attributed to control cable insulation degradation which led to the eventual failure. The routing of several of the control cables placed them in direct contact with an opposing phase bus. Once the cable insulation degraded to the point of failure, a phase-to-phase fault was created. Corona around the control cable is a suspected cause for the insulation degradation. To prevent future failures of this type, the control cables were rerouted so they would not come in contact with the phase bus. All of the damaged cable along with the saturation transformer were replaced.

On December 16, 1982, during troubleshooting following installation to the spare saturation transformer, D/G 2B-B was started but failed to exceed 3000 volts output. Investigation revealed a shorted diode in the field rectifier circuit and a broken solder joint on the "jones plug" to the actuator motor on the 2B1 engine. The solder joint was repaired, the diode was replaced, and the diesel was verified operable. At 1728C on December 16, 1982, D/G 2B-B was again started for its 24-hour run and appeared to be operating correctly. At 2228C D/G 2B-B tripped on differential overcurrent due to the failure of the new saturation transformer. The control cabling was not damaged with this failure. Extensive troubleshooting and testing failed to locate any cause for the failure. This failure appeared to have been caused by an internal short in the transformer. With no spare transformers in stock, new transformers had to be fabricated by the manufacturer with a delivery date of December 24, 1982.

On December 22, 1982, the saturation transformer from D/G 1B-B was placed on D/G 2B-B and the 24-hour run was initiated on D/G 2B-B. This time the test ran successfully with no problems. On December 24, 1982, the saturation transformer was removed from D/G 2B-B and placed back on D/G 1B-B. D/G 1B-B was then tested to verify operability.

On December 25, 1982, the new saturation transformers were received from the manufacturer and installed on D/G 2B-B. At 1530C on December 25, 1982, D/G 2B-B was started, loaded to 4.4 MW and run for one hour. The D/G was declared operable at 1636C on December 25, 1982. No future corrective action is planned for this event.

2. At 1603C on December 19, 1982, after completing 21 hours on its 24-hour run, D/G 1B-B started leaking oil from a tee fitting on the new lube oil system which was installed during the refueling outage. The D/G was shut down and the oil leak was repaired. The leak was caused by bad threads on a $\frac{1}{2}$ -inch stainless pipe at the tee fitting. After repairs, the D/G was restarted on a new 24-hour run. This was completed with no further problems.