The Light company
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U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

South Texas Project
Unit 1
Docket No. STN 50-498
Special Report Regarding a Valid Failure of
Standby Diesel Generator 13 on March 12, 1997

Pursuant to South Texas Project Technical Specifications 4.8.1.1.3 and 6.9.2, the South Texas Project submits the attached Special Report regarding a valid failure of Standby Diesel Generator 13 on March 12, 1997.

If you should have any questions on this matter, please contact either Mr. S. M. Head at (512) 972-7136 or me at (512) 972-7800.

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Plant Manager,
Unit 1

DNB/

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Standby Diesel Generator 13 on March 12, 1997

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Special Report Regarding a Valid Failure of
Standby Diesel Generator 13 on March 12, 1997

Description of Event:

On March 12, 1997, at 1029 hours, Unit 1 was in Mode 1. While performing an operability test, Standby Diesel Generator 13 failed to obtain normal voltage and frequency during an emergency mode start. The engine attained rated speed, but there was no indication of generator output voltage in the control room or locally. The engine was secured and declared inoperable.

Troubleshooting determined that the K1 relay failed to reset on start as designed. As part of an equipment upgrade, the K1 relay had been recently replaced with a new model relay. The new relay had been satisfactorily bench tested, in-circuit tested, and operationally tested. The failed relay was replaced with the original K1 relay.

Upon restoring power to the circuit, it was found that the redundant rated-speed/field flash slave-relay 14FFX1, which actuates the K1 relay as engine speed reaches a given setpoint, had also failed, apparently as a result of the K1 relay failure. The 14FFX1 relay was replaced.

Following replacement of the K1 and 14FFX1 relays, Standby Diesel Generator 13 was test started in both the test and emergency modes. A satisfactory loaded run surveillance test was performed, and Standby Diesel Generator 13 was declared operable on March 13, 1997, at 0400 hours.

Cause of the Event:

The apparent cause of this event is an inoperative reset coil on the K1 relay, which prevented the relay from operating during engine start. This disabled the generator exciter field, preventing the generator from developing voltage. The failed K1 relay has been returned to the vendor to perform a failure analysis.

Event Analysis:

The diesel start was classified as a Valid Failure, because it could not perform its design function with this condition present. Including this Valid Failure, Standby Diesel Generator 13 has had one Valid Failure in the last 20 Valid Tests and three Valid Failures in the last 100 Valid Tests. The surveillance testing frequency remains monthly because no trigger values have been exceeded.

Corrective Actions:

The original K1 relay was reinstalled in Standby Diesel Generator 13 and tested satisfactorily. With the replacement of the original (old version) K1 relay in Standby Diesel Generator 13, all of the Standby Diesel Generators at the South Texas Project have the original version K1 relay installed.

The failed K1 relay has been sent to the relay vendor to perform a failure analysis. The effort to replace the existing K1 relays with the upgraded model relays has been suspended until the root cause of this failure has been determined. Following root cause determination, the South Texas Project will re-evaluate replacement of the existing K1 relays with the upgraded versions.

Additional Information:

The failed K1 relay (upgrade relay) is a Square D Part Number LP1D8011GD contactor with an LA6DK3G latch.

The original K1 relay is a Telemechanique Part number A143E12-X3 contactor.

The 14FFX1 relay is an Agastat EGPDRC2015003.