

The Light company

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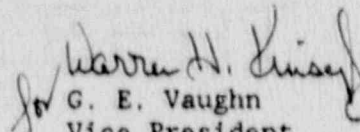
July 12, 1990
ST-HL-AE-3504
File No.: G02
10CFR50.36(c)(5)

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

South Texas Project Electric Generating Station
Unit 1
Docket No. STN 50-498
Special Report
Regarding Three Nonvalid Failures of #13
Standby Diesel Generator on June 12 and 13, 1990

Pursuant to the South Texas Project Electric Generating Station Technical Specifications 4.8.1.1.3 and 6.9.2, Houston Lighting & Power (HL&P) submits the attached Special Report regarding three diesel generator nonvalid failures which occurred on June 12 and 13, 1990. Prior to the submittal of this report, a similar failure on #13 Standby Diesel Generator occurred. As such, HL&P is reevaluating the root cause associated with these failures. The results of this evaluation, including the appropriate corrective actions will be provided in the next special report on a nonvalid failure of Standby Diesel Generator #13. This report will be submitted by August 10, 1990.

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


G. E. Vaughn
Vice President
Nuclear Generation

SMH/nl

Attachment: Special Report Regarding
Three Nonvalid Failures of
#13 Standby Diesel Generator
on June 12 and 13, 1990

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South Texas Project Electric Generating Station
Unit 1
Docket No. STN 50-498
Special Report
Regarding Three Nonvalid Failures of #13
Standby Diesel Generator on June 12 and 13, 1990

DESCRIPTION OF EVENT:

On June 12, 1990, Unit 1 was in Mode 3 at 0% reactor power. At approximately 1032 hours on June 12 Standby Diesel Generator (SDG) #13 was started for its monthly surveillance. The SDG tripped (Nonvalid Failure #1 [NVF #1]) when it was released from the emergency mode. The trip was presumed to be due to a low lube oil pressure trip caused by high differential pressure present across the lube oil strainer and filter.

The high differential pressure condition was cleared and at 1041 hours the SDG was again started in the emergency mode. After releasing the SDG from the emergency mode, voltage and frequency were being adjusted for synchronization when the diesel again tripped (NVF #2). No alarms were registered on the local control panel or at the control room. In an effort to determine the cause of the problem, the SDG was started again at 1218 hours (Maintenance Test #1) [MT #1]. The SDG was paralleled with offsite power at 1225 hours and loaded to approximately 1000 KW. At 1226 hours the diesel again tripped. As before, no alarms were received at the local panel or in the control room. However, it was noted that a green light on the local control panel was lit, indicating a tripped condition existed.

The green light indicates that a 86S non 1E relay has dropped out and tripped the diesel. The relay is held energized by a series of nonessential protective relays and shutdown push buttons. Each of the protective relays has an alarm on the local panel. Each alarm was verified to be operable. Since no individual alarms were received during the SDG starts, concern was focused on the 86S relay. The 86S relay was pulled out and passed a bench test for dropout and pickup voltage and contact resistance.

The 86S relay was reinstalled and a maintenance start (MT #2) was performed at 0236 hours on June 13. The SDG was released from emergency, paralleled, and fully loaded to 5500 KW. The SDG was subsequently manually shutdown.

DESCRIPTION OF EVENT Cont'd.:

AT 0518 hours the SDG was started in an attempt to satisfy the monthly surveillance. Following the successful paralleling and loading of the diesel to 5500 KW, the SDG tripped at 0617 hours (NVF #3). No alarm annunciation was received. The original 86S relay was replaced and the surveillance test was recommenced at 0904. This test proved satisfactory.

CAUSE OF EVENT:

As indicated above, the cause of these failures was thought to be associated with 86S relay. The relay was replaced and a successful test of the diesel was concluded leading HL&P to believe that the problem has been corrected. However, on July 11, 1990 SDG #13 experienced a similar failure. Preliminary investigation has lead to the conclusion that the failures were caused by the circuitry associated with the 86S relay. However, the exact cause has not been determined at this time. Since this subsequent failure was associated with the 86S circuitry, which is not in effect in the emergency mode, it has been categorized as a nonvalid failure. The results of our evaluations to identify the cause of these nonvalid failures, as well as identify the appropriate corrective actions, will be provided in a special report to be submitted by August 10, 1990.

ANALYSIS OF EVENT:

The evaluation of these failures is still ongoing. However, HL&P is convinced that the failures are associated with the 86S circuitry. The 86S circuitry is only operative in the test mode. As such, its failure would not prevent the SDG from operating in the emergency mode. In accordance with section C.2.e(2) of Regulatory Guide 1.108, these events are classified as nonvalid failures of SDG #13 since they are attributed to spurious trips that would be bypassed in the emergency mode.

CORRECTIVE ACTION:

Corrective action will be identified in the special report to be submitted by August 10, 1990.

ADDITIONAL INFORMATION:

As of July 12, 1990, there have been 55 valid tests performed on SDG #13 since completion of the 100-hour run on August 6, 1987. There have been no valid failures. The test interval for SDG #13 remains at 31 days.