

# The Light company

Houston Lighting & Power South Texas Project Electric Generating Station P. O. Box 289 Wadsworth, Texas 77483

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

South Texas Project  
Unit 2  
Docket No. STN 50-499  
Special Report Regarding a Nonvalid Failure of  
Standby Diesel Generator 22 on June 10, 1992

Pursuant to the South Texas Project Electric Generating Station (STPEGS) Technical Specifications 4.8.1.1.3 and 6.9.2, Houston Lighting & Power submits the attached Special Report regarding a nonvalid failure of Standby Diesel Generator 22 which occurred on June 10, 1992.

If you should have any questions on this matter, please contact Mr. C. A. Ayala at (512) 972-8628 or me at (512) 972-7205.

*William J. Jump*  
William J. Jump  
Manager,  
Nuclear Licensing

JMP/ag

Attachment: Special Report Regarding a Nonvalid  
Failure of SDG 22 on June 10, 1992

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A Subsidiary of Houston Industries Incorporated

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PDR ADDCK 05000499  
S PDR

*JE22*

cc:

Regional Administrator, Region IV  
Nuclear Regulatory Commission  
611 Ryan Plaza Drive, Suite 400  
Arlington, TX 76011

George Dick, Project Manager  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

J. I. Tapia  
Senior Resident Inspector  
c/o U. S. Nuclear Regulatory  
Commission  
P. O. Box 910  
Bay City, TX 77414

J. R. Newman, Esquire  
Newman & Holtzinger, P.C.  
1615 L Street, N.W.  
Washington, DC 20036

D. E. Ward/T. M. Puckett  
Central Power and Light Company  
P. O. Box 2121  
Corpus Christi, TX 78403

J. C. Lanier/M. B. Lee  
City of Austin  
Electric Utility Department  
P.O. Box 1088  
Austin, TX 78767

K. J. Fiedler/M. T. Hardt  
City Public Service Board  
P. O. Box 1771  
San Antonio, TX 78296

Rufus S. Scott  
Associate General Counsel  
Houston Lighting & Power Company  
P. O. Box 61867  
Houston, TX 77208

INPO  
Records Center  
1100 Circle 75 Parkway  
Atlanta, GA 30339-3064

Dr. Joseph M. Hendrie  
50 Bellport Lane  
Bellport, NY 11713

D. K. Lacker  
Bureau of Radiation Control  
Texas Department of Health  
1100 West 49th Street  
Austin, TX 78756-3189

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South Texas Project  
Unit 2  
Docket No. STN 50-499  
Special Report Regarding a Nonvalid Failure of  
Standby Diesel Generator 22 on June 10, 1992

DESCRIPTION OF EVENT:

On June 10, 1992, Unit 2 was in Mode 1 at 100% power. At 0130 hours, during a scheduled performance of 2PSP03-DC-0002, Standby Diesel 22 Operability Test, Standby Diesel Generator (SDG) 22 tripped when it was released from the emergency mode. No alarms were observed on the annunciator alarm panel. However, a green light had illuminated for the Master Trip Circuit when the engine was started. The green light signifies the presence of a nonemergency engine trip. Plant operators tested the annunciator lights and all were functional but when an auxiliary switch was transferred from automatic, no alarm was received although one was expected. This was an indication that the annunciator was not working although the lights were functional.

At 0221 hours, plant operators suspected the trip was related to an annunciation problem and reset all the nonemergency trips on SDG 22 for an engine start. When the engine was started, the amber light (signifies reset) deenergized and the green light energized indicating a nonemergency trip. Attempts to reset the Master Trip Relay were unsuccessful and the engine was subsequently shut down.

Troubleshooting on June 11, 1992 found a bad logic card at the annunciator alarm panel. The logic card was replaced and the annunciator appeared to be functioning satisfactorily.

Troubleshooting continued on SDG 22 and included verifying tightness of terminations for circuits associated with the 86S relay. Any nonemergency trip which occurs will deenergize the 86S relay. Resistance across the contacts at the 86S relay was also verified. Voltage measurements were performed on electrical circuits associated with the nonemergency trip system with the engine running. All circuits were found satisfactory. The SDG 22 was released from the emergency mode and subsequently tripped. All trip alarms were observed on the annunciator which indicated a problem with the shutdown air supply. The shutdown air system provides air pressure to reset all trip alarms and provides a permissive for starting air pressure when the engine is in the test mode.

DESCRIPTION OF EVENT: (Con't)

Troubleshooting on the pneumatic shutdown system found that the reset air regulator valve would not regulate air pressure to greater than 10 psig when starting the engine. Normal shutdown air pressure is 30 psig. The reset air regulator was replaced. On June 12, 1992, at 0123 hours, post maintenance testing was completed and SDG 22 was subsequently returned to service.

CAUSE OF EVENT:

The cause of this event was a reset air regulator valve not providing sufficient air pressure to reset the SDG 22 nonemergency trip alarms.

ANALYSIS OF EVENT:

In the subject failure, SDG 22 was started in the emergency mode and accelerated to rated speed, voltage, and frequency within the required ten seconds. The SDG 22 tripped when it was released from the emergency mode. This indicates that the cause of the trip is in a nonemergency component and/or circuit. SDG 22 operated satisfactorily in the emergency mode and, if challenged, would have performed its design function. This event was classified as a nonvalid failure.

CORRECTIVE ACTIONS:

1. Troubleshooting and repair on the annunciator alarm panel was performed.
2. Troubleshooting on SDG 22 consisted of verifying tightness of electrical connections, verifying contact resistance on the 86S relay, obtaining voltage measurements, and replacing an air regulator.
3. A design change will be evaluated for all SDGs to improve the reliability/performance of the reset air regulator valve and provide additional instrumentation to allow monitoring air pressure. This evaluation will be completed by July 30, 1992. Additional corrective actions will be determined as necessary.

ADDITIONAL INFORMATION:

There have been no valid failures in the last 20 valid tests of SDG 22. The number of valid failures in the last 100 valid tests is less than four. Therefore, the testing frequency for SDG 22 remains at once per 31 days.

The regulator that failed is a Parker Model 07R Valve.