

# The Light company

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

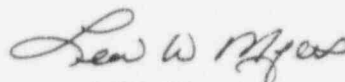
February 29, 1996  
ST-HL-AE-5310  
File No.: G02  
10CFR50

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

South Texas Project  
Unit 1  
Docket No. STN 50-498  
Special Report Regarding  
Standby Diesel Generator 11 Valid Failure

Pursuant to the 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 Standby Diesel Generator 11 valid failure which occurred on January 30, 1996. A revision to this special report will be submitted by June 6, 1996, following evaluation of the failure analysis report.

If you should have any questions on this matter, please contact Mr. S.M. Head at (512) 972-7136 or myself at (512) 972-7239.



L.W. Myers  
Plant Manager,  
Unit 1

MKJ/mj

Attachment: Special Report Regarding Standby Diesel Generator 11 Valid Failure

9603050322 960229  
PDR ADOCK 05000498  
S PDR

050077

Houston Lighting & Power Company  
South Texas Project Electric Generating Station

ST-HL-AE-5310  
File No.: G02  
Page 2

C:

Leonard J. Callan  
Regional Administrator, Region IV  
U. S. Nuclear Regulatory Commission  
611 Ryan Plaza Drive, Suite 400  
Arlington, TX 76011-8064

Thomas W. Alexion  
Project Manager  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555-0001 13H15

David P. Loveless  
Sr. Resident Inspector  
c/o U. S. Nuclear Regulatory Comm.  
P. O. Box 910  
Bay City, TX 77404-0910

J. R. Newman, Esquire  
Morgan, Lewis & Bockius  
1800 M Street, N.W.  
Washington, DC 20036-5869

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

J. C. Lanier/M. B. Lee  
City of Austin  
Electric Utility Department  
721 Barton Springs Road  
Austin, TX 78704

Central Power and Light Company  
ATTN: G. E. Vaughn/C. A. Johnson  
P. O. Box 289, Mail Code: N5012  
Wadsworth, TX 77483

Rufus S. Scott  
Associate General Counsel  
Houston Lighting & Power Company  
P. O. Box 61067  
Houston, TX 77208

Institute of Nuclear Power  
Operations - Records Center  
700 Galleria Parkway  
Atlanta, GA 30339-5957

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

Richard A. Ratliff  
Bureau of Radiation Control  
Texas Department of Health  
1100 West 49th Street  
Austin, TX 78756-3189

U. S. Nuclear Regulatory Comm.  
Attn: Document Control Desk  
Washington, D. C. 20555-0001

J. R. Egan, Esquire  
Egan & Associates, P.C.  
2300 N Street, N.W.  
Washington, D.C. 20037

J. W. Beck  
Little Harbor Consultants, Inc.  
44 Nichols Road  
Cohasset, MA 02025-1166

South Texas Project  
Unit 1  
Docket No. STN 50-498  
Special Report Regarding  
Standby Diesel Generator 11 Valid Failure

DESCRIPTION OF EVENT

On January 30, 1996, at 1811 hours, while Unit 1 was in Mode 1, Standby Diesel Generator 11 was started for performance of a Standby Diesel Generator Operability test surveillance following maintenance activities. Voltage increased to 4600 VAC, exceeding the expected emergency mode setting of 4160 VAC. The diesel was released from the emergency mode to allow for manual control. The operator attempted to lower the voltage with no success, and subsequently secured the diesel.

Static checks performed on the voltage sensing network, the field flash circuit, and the voltage regulator circuit did not reveal an immediate cause for the apparent loss of voltage control. A comprehensive test plan was developed which included installation of recorders for monitoring specific parameters. A malfunctioning voltage regulator module was indicated as the most probable cause of the problem, and was replaced. A test run was then performed. To support this test, justification for limited no-load operation at 4600 VAC for data collection was obtained through Design Engineering in coordination with the vendor, NEI Peebles Inc.

On January 31, 1996, at 1458 hours, Standby Diesel Generator 11 was started in the emergency mode for testing purposes. Voltage indication exceeded 5250 VAC both in the control room and at the local panel meters. The diesel was immediately secured. The troubleshooting team reconvened to evaluate the recorder traces captured during the start and determine the best course of action for repair. Analysis of the symptoms indicated that the instantaneous preposition board was the next most probable cause. The instantaneous preposition board was then replaced.

On January 31, 1996, at 2059 hours, Standby Diesel Generator 11 was started in the test mode for testing purposes. Voltage built to the expected level for the new regulator and preposition board. Adjustments were made satisfactorily to the regulator and the preposition board to bring voltage to design levels. Two subsequent emergency mode starts and a surveillance test were performed with satisfactory voltage response.

DESCRIPTION OF EVENT: (continued)

The removed voltage regulator module and preposition board were sent to the vendor for root cause determination. As of this writing, the root cause for the component failure has not yet been found. The preposition board is considered the faulty part responsible for the failure.

CAUSE OF EVENT:

The cause of this event is indicated as a faulty instantaneous preposition board. Results from failure analysis are pending for root cause determination. Once results from the component root cause failure analysis have been received, a revision to this special report will be submitted.

ANALYSIS OF EVENT:

This event was classified as a Valid Failure. With the mode of failure demonstrated during the maintenance run of the diesel after the voltage regulator replacement, the diesel would not have been able to perform its safety related function if challenged.

CORRECTIVE ACTIONS:

1. Troubleshooting of Standby Diesel Generator 11 was conducted, which resulted in the replacement of the voltage regulator and the preposition board.
2. The failed voltage regulator and preposition board have been sent offsite for failure analysis. A revision to this special report will be submitted by June 6, 1996, following evaluation of the failure analysis report from the vendor.

ADDITIONAL INFORMATION:

The instantaneous preposition circuit is a discrete board consisting of five resistors, a potentiometer, an operational amplifier, and a relay. Its function is to allow use of an adjustable voltage reference for test-mode parallel operation, and an instantaneous set voltage reference for emergency mode operation.

Standby Diesel Generator 11 has a previous Valid Failure classification that was attributed to a failure of the preposition board (reference Special Report ST-HL-AE-4604). On September 19, 1993, Standby Diesel Generator 11 was started in the emergency mode for surveillance testing, and generator voltage built to only 2900 VAC. Subsequent troubleshooting isolated the preposition board as the root cause. The preposition board was replaced and the diesel was tested satisfactorily and returned to service. Failure analysis conducted by the vendor confirmed that the faulty component was the preposition board op-amp.

Previous to this Valid Failure, there had been no Valid Failures in the past 20 valid tests, and 3 failures in the past 100 valid tests for Standby Diesel Generator 11. Therefore, the testing frequency of Standby Diesel Generator 11 continues to be monthly.