

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)

South Texas, Unit 1

DOCKET NUMBER (2)

0 5 0 0 0 4 9 8 1 OF 0 3

PAGE (3)

TITLE (4)

ESF Actuation Due to Inverter Failure

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)																																
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES		DOCKET NUMBER(S)																														
0	2	2	8	8	0	2	1	0	0	0	3																														
0	2	2	8	8	0	2	1	0	0	0	3																														
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5 (Check one or more of the following) (11)																																						
3			<table border="1"><tr><td>20.402(b)</td><td>20.408(c)</td><td>X</td><td>50.73(a)(2)(iv)</td><td>73.71(g)</td></tr><tr><td>20.406(a)(1)(i)</td><td>50.36(a)(1)</td><td></td><td>50.73(a)(2)(v)</td><td>73.71(c)</td></tr><tr><td>20.406(a)(1)(ii)</td><td>50.36(a)(2)</td><td></td><td>50.73(a)(2)(vi)</td><td>OTHER (Specify in Abstract below and in Text, NRC Form 366A)</td></tr><tr><td>20.406(a)(1)(iii)</td><td>50.73(a)(2)(i)</td><td></td><td>50.73(a)(2)(vii)(A)</td><td></td></tr><tr><td>20.406(a)(1)(iv)</td><td>50.73(a)(2)(ii)</td><td></td><td>50.73(a)(2)(vii)(B)</td><td></td></tr><tr><td>20.406(a)(1)(v)</td><td>50.73(a)(2)(iii)</td><td></td><td>50.73(a)(2)(ix)</td><td></td></tr></table>									20.402(b)	20.408(c)	X	50.73(a)(2)(iv)	73.71(g)	20.406(a)(1)(i)	50.36(a)(1)		50.73(a)(2)(v)	73.71(c)	20.406(a)(1)(ii)	50.36(a)(2)		50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)	20.406(a)(1)(iii)	50.73(a)(2)(i)		50.73(a)(2)(vii)(A)		20.406(a)(1)(iv)	50.73(a)(2)(ii)		50.73(a)(2)(vii)(B)		20.406(a)(1)(v)	50.73(a)(2)(iii)		50.73(a)(2)(ix)	
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20.406(a)(1)(v)	50.73(a)(2)(iii)		50.73(a)(2)(ix)																																						

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Charles A. Ayala - Supervising Licensing Engineer	511 12 91712 - 181612 18

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPPDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPPDS		
B	E	F	1	N	U	T	E	2	0	9	N

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR			
X			0	6	1	7	8	8

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single space typewritten lines) (16)

At approximately 0624 hours on February 24, 1988 with Unit 1 in Mode 3, prior to initial criticality, a number of control room annunciators alarmed along with ESF actuations of Control Room Envelope HVAC, Fuel Handling Building HVAC, and Containment Ventilation. The actuations were traced to the failure of inverter IV-001. Failed DC to DC converter assemblies from the inverter have been returned to the vendor for failure analysis. A revision to this report will be submitted by June 17, 1988 to incorporate the results of the failure analysis and identify any other corrective actions.

NL.LER88021

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
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South Texas, Unit 1	0 5 0 0 0 4 9 8	8 8	— 0 2 1	— 0 0	0 2	OF	0 3

TEXT (If more space is required, use additional NRC Form 365A's) (17)

I. DESCRIPTION OF EVENT:

At approximately 0624 hours on February 24, 1988 with Unit 1 in Mode 3, prior to initial criticality, a number of annunciators alarmed in the Control Room, along with ESF actuations of Control Room Envelope HVAC, Fuel Handling Building HVAC, and Containment Ventilation. It was discovered that Inverter IV-001 was not operating. The local inverter indications were "DC Fuse" blown and inverter "Low Output". Distribution Panel DP001, which is normally fed by this inverter, was re-energized from its alternate power supply.

The NRC was notified pursuant to 10CFR 50.72(b)(2)(ii) at 1018 on February 24, 1988. There were no adverse safety consequences as a result of this event.

An investigation revealed that the inverter (IV-001) failed when fuse F1 blew. This was caused by failure of the DC to DC converter assembly which acts as a power supply for the inverter electronic control circuits. A replacement DC to DC converter from an operating Unit 2 inverter was installed and performed satisfactorily. The inverter was then energized, load was transferred from the alternate source back to the inverter, and the unit was returned to service.

II. CAUSE OF OCCURRENCE:

The root cause of this problem was a failure of the DC to DC converter assembly. The failed assembly has been returned to the vendor for failure analysis.

NL.LER88021

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
South Texas, Unit 1	0500049888	88	021	00	03	OF 03

TEXT (If more space is required, use additional NRC Form 368A's) (17)

III. ANALYSIS OF EVENTS:

This event is reportable pursuant to 10CFR50.73(a)(2)(iv). The Control Room Envelope HVAC, Fuel Handling Building HVAC and Containment Ventilation ESF actuations occurred as designed. There were no adverse safety or radiological consequences as a result of the event. The plant had not yet been critical and no radioactivity had been produced. The event did not result in any additional risk to the public.

Distribution Panel DPO71 was re-energized from its alternate power supply within two hours, and Inverter IV-001 was returned to service within twenty-four hours as required by Tech Spec 3.8.3.1 Action Statement b.(2).

IV. CORRECTIVE ACTIONS:

The following actions will be taken:

1. Plant Engineering Department will review results of the vendor's failure analysis on the DC to DC converter assembly for other corrective actions by May 16, 1988.
2. Plant Engineering Department will review NPRDS information for similar failures at other operating plants to identify potential generic implications by May 16, 1988.

A revision to this report will be issued by June 17, 1988 to include the results of the investigation and identify any other corrective actions.

V. ADDITIONAL INFORMATION:

The affected inverter was manufactured by Elgar and is identified as model number UPS 253-1-112.

No previous similar events have occurred at STPEGS concerning ESF actuations due to Elgar inverter failures.

NL.LER88021

# The Light company

Houston Lighting & Power

P.O. Box 1700 Houston, Texas 77001 (713) 228-9211

March 25, 1988  
ST-HL-AE-2582  
File No.: G26  
10CFR50.73

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

Licensee Event Report 88-021 Regarding  
ESF Actuation Due to Inverter Failure

On February 24, 1988 Houston Lighting & Power (HL&P) notified the NRC of a reportable event regarding ESF actuations due to failure of an inverter. The event did not have any adverse affect on the health and safety of the public. In accordance with 10CFR50.73, HL&P submits the attached Licensee Event Report (LER 88-021).

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



G. E. Vaughn  
Vice President  
Nuclear Plant Operations

GEV/BEM/pm

Attachment: Licensee Event Report 88-021  
Regarding ESF Actuation Due to  
Inverter Failure

NL.LER88021

A Subsidiary of Houston Industries Incorporated

IE22  
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cc:

Regional Administrator, Region IV  
Nuclear Regulatory Commission  
611 Ryan Plaza Drive, Suite 1000  
Arlington, TX 76011

N. Prasad Kadambi, Project Manager  
U. S. Nuclear Regulatory Commission  
1 White Flint North  
11555 Rockville Pike  
Rockville, MD 20859

Dan R. Carpenter  
Senior Resident Inspector/Operations  
c/o U. S. Nuclear Regulatory Commission  
P. O. Box 910  
Bay City, TX 77414

Don L. Garrison  
Resident Inspector/Construction  
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

R. L. Range/R. P. Verret  
Central Power & Light Company  
P. O. Box 2121  
Corpus Christi, TX 78403

R. John Miner (2 copies)  
Chief Operating Officer  
City of Austin Electric Utility  
721 Barton Springs Road  
Austin, TX 78704

R. J. Costello/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 1700  
Houston, TX 77001

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

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