

# The Light company

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

October 13, 1992

ST-HL-LE-4226

File No.: G26

10CFR50.73

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

South Texas Project  
Unit 2  
Docket No. STN 50-499  
Licensee Event Report 92-008 Regarding  
Control Room Ventilation Actuation to  
Recirculation Mode Due to Failure of A Toxic Gas Analyzer

Pursuant to 10CFR50.73, Houston Lighting & Power Company (HL&P) submits the attached Licensee Event Report 92-008 regarding a control room ventilation actuation to the recirculation mode due to a failure of a toxic gas analyzer. The safety systems performed as designed and the event did not have any adverse impact on the health and safety of the public.

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

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

MKJ/ag

Attachment: LER 92-008 (South Texas, Unit 2)

190164

LE92273001.U2

9210200003 921013  
PDR ADOCK 05000499  
S PDR

A Subsidiary of Houston Industries Incorporated

*JE22*

Houston Lighting & Power Company  
South Texas Project Electric Generating Station

ST-HL-AE-42.6  
File No.: G26  
Page 2

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. J. 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

Revised 10/11/91

L4/NRC/

## LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

South Texas, Unit 2

DOCKET NUMBER (2)

05000499

PAGE (3)

1 OF 4

TITLE (4)

Control Room Ventilation Actuation to Recirculation  
Mode Due to a Failure of a Toxic Gas Analyzer

EVENT DATE (5)

LER NUMBER (6)

REPORT DATE (7)

OTHER FACILITIES INVOLVED (8)

MONTH

DAY

YEAR

YEAR

SEQUENTIAL  
NUMBERREVISION  
NUMBER

MONTH

DAY

YEAR

FACILITY NAMES

DOCKET NUMBER(S)

09

15

92

29

29

00

08

00

10

10

13

92

05

00

00

00

OPERATING  
MODE (9)

1

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)

20.402(b)

20.405(c)

50.73(a)(2)(iv)

73.71(b)

POWER  
LEVEL  
(10)

100

20.406(a)(1)(i)

50.36(a)(1)

50.72(a)(2)(v)

73.71(c)

20.406(a)(1)(ii)

50.36(a)(2)

50.73(a)(4)(iii)

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)(viii)

LICENSEE CONTACT FOR THIS LER (12)

NAME

Charles Ayala - Supervising Licensing Engineer

TELEPHONE NUMBER

AREA CODE

512972-186218

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

CAUSE

SYSTEM

COMPONENT

MANUFACTURER

REPORTABLE  
TO NRC

CAUSE

SYSTEM

COMPONENT

MANUFACTURER

REPORTABLE  
TO NRC

SUPPLEMENTAL REPORT F'LETED (14)

EXPECTED  
SUBMISSION  
DATE (15)

MONTH

DAY

YEAR

YES (If yes, complete EXPECTED SUBMISSION DATE)

NO

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

On September 15, 1992, Unit 2 was in Mode 1 at 100% power. At 0834 hours a control room toxic gas non-ESF alarm was received. Control room personnel were in the process of verifying the validity of the alarm when the control room envelope Heating Ventilation and Air Conditioning system actuated to the recirculation mode on a high toxic gas ESF actuation signal. The redundant analyzer did not actuate. Testing of the analyzer indicated the cause to be a failed infrared source. The analyzer has been repaired and returned to service. The existing toxic gas analyzers are to be replaced with state-of-the-art models. These changes will be made during the current outage for Unit 1 and during the next scheduled refueling outage for Unit 2.

LER\92273001.U2

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
South Texas, Unit 2	05000499	92	000	000	02	OF 04

TEXT *If more space is required, use additional NRC Form 305A's (17)*

On September 15, 1992, Unit 2 was in Mode 1 at 100% power. At 0834 hours a control room toxic gas non-ESF alarm was received. Control room personnel were in the process of verifying the validity of the alarm when the control room envelope Heating Ventilation and Air Conditioning (HVAC) system actuated to the recirculation mode on a high toxic gas ESF actuation signal. The NRC was notified pursuant to 10CFR50.72 at 0922 hours.

Two redundant toxic gas analyzers monitor five chemical channels. High concentrations of chemicals, Hydrogen Chloride (HCl), Acetic Acid, and Naptha, will result in an alarm but no actuation. High concentrations of the remaining chemicals, Anhydrous Ammonia/Ammonia Hydroxide, and Vinyl Acetate, on one of the two analyzers will result in the actuation of the control room envelope HVAC to the recirculation mode.

A review of the Emergency Response Facilities Data Acquisition and Display System (ERFDADS) indicated that prior to receiving the non-ESF alarm HCl concentrations had been trending upward on one of the two toxic gas analyzers. The redundant analyzer did not indicate the presence of HCl. The HCl concentration later spiked upward, giving the non-ESF alarm. The concentrations for the remaining monitored chemicals spiked to above their setpoints resulting in the ESF actuation. Readings on the redundant analyzer, remained unchanged and did not indicate the presence of high concentrations of any of the monitored gases.

The toxic gas analyzer was repaired and successfully tested on September 16, 1992. The infrared source, part of the optical system used to perform infrared analysis of the gases, was replaced.

The cause of this event was due to a spurious signal generated from a toxic gas analyzer. Due to a failed infrared source the toxic gas analyzer erroneously registered chemical concentrations above the alarm setpoint.



LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (5)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
South Texas, Unit 2	0500049992	-000	-000	03	OF	4

TEXT (If more space is required, use additional NRC Form 366A's) (17)

ANALYSIS OF EVENT:

As of the date of this event, unplanned actuation of any Engineered Safety Feature was reportable pursuant to 10CFR50.73(a)(2)(iv). Effective October 13, 1992, 10CFR50.72 and 50.73 were revised to eliminate reporting of invalid actuations of Control Room Ventilation systems. As such, this event would no longer be reportable under the existing rules since this was a spurious actuation which is considered to be invalid per the revised rulemaking. All equipment actuated as required on receipt of the high toxic gas ESF actuation signal. Since there was no threat of actual toxic gas exposure, this event did not adversely impact the safe operation of the plant or safety of plant personnel.

While any unnecessary challenge to an Engineered Safety Feature is undesirable, actuation of the control room ventilation system to the recirculation mode represents a minimal hazard since it could not cause, worsen, or prevent mitigation of any accident.

CORRECTIVE ACTIONS:

1. The toxic gas analyzer was repaired by replacing the infrared source and returned to service.
2. The existing toxic gas analyzers will be replaced with new model analyzers. In addition, a third analyzer will be added. This will allow 2/3 logic, vice the current 1/2 logic, on high concentrations of the monitored gases. This will reduce the number of spurious actuations attributed to the toxic gas analyzers. These changes will be made during the current outage for Unit 1 and during the next refueling outage for Unit 2. While the third analyzer will be installed, it will remain inoperable pending approval by the NRC of the necessary Technical Specification changes that were submitted on June 2, 1992.

ADDITIONAL INFORMATION:

Prior to this event, the most recent ESF actuations that were caused by a failed toxic gas analyzer occurred on May 26, 1991 for Unit 1 (LER 91-017) and on May 19, 1991 for Unit 2 (LER 91-006).

LER\92273001.U2

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)  South Texas, Unit 2	DOCKET NUMBER (2)  0500049992	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		90	00	0	04	OF	4

TEXT (If more space is required, use additional NRC Form 386A's) (17)

ADDITIONAL INFORMATION: (con't)

Unit 2 LER 90-006 documents another instance of an ESF actuation due to a toxic gas analyzer failure which resulted in replacement of the analyzer including the infrared source.

Several other events involving the toxic gas analyzers have been reported and numerous corrective actions have been implemented to improve the reliability of the Foxboro Miran 981 Analyzers.

LER\92273001.U2