

# The Light company

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

April 15, 1991  
ST-HL-AE-3744  
File No.: G02  
10CFR50.71

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

South Texas Project Electric Generating Station  
Units 1 & 2  
Docket Nos. STN 50-498 & 50-499  
Monthly Operating Reports for March, 1991

Pursuant to 10CFR50.71(a) and South Texas Project Electric Generating Station (STPEGS) Technical Specification 6.9.1.5, attached are the Monthly Operating Reports for March, 1991.

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

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

NKJ/kmd

Attachments: 1) STPEGS Unit 1 Monthly Operating Report - March, 1991  
2) STPEGS Unit 2 Monthly Operating Report - March, 1991

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FDR ADOCK 05000498  
R /DR

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A Subsidiary of Houston Industries Incorporated

*TEEA*  
*1/1*

Houston Lighting & Power Company  
South Texas Project Electric Generating Station

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Revised 01/29/91

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SOUTH TEXAS PROJECT  
ELECTRIC GENERATING STATION  
UNIT 1  
MONTHLY OPERATING REPORT  
MARCH 1991  
HOUSTON LIGHTING AND POWER CO.  
NRC DOCKET NO. 50-498  
LICENSE NO. NPF-76

Reviewed By:

CL 79/4  
Supervisor

4-9-91

Date

Reviewed By:

D.C. Logan MD30  
Plant Engineering Manager

4-9-91

Date

Approved By:

[Signature]  
Plant Manager

4/11/91

Date

Monthly Summary

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STPEGS Unit 1 remained shutdown during the reporting period for refueling and scheduled maintenance.

OPERATING DATA REPORT

DOCKET NO. 50-498  
UNIT 1  
DATE Apr. 4, 1991  
COMPLETED BY A.P. Kent  
TELEPHONE 512/972-7786

OPERATING STATUS

1. REPORTING PERIOD: 03/01-03/31 GROSS HOURS IN REPORTING PERIOD: 744
  2. CURRENTLY AUTHORIZED POWER LEVEL (MWt): 3800  
MAX. DEPEND. CAPACITY (MWe-Net): 1250.6  
DESIGN ELECTRICAL RATING (MWe-Net): 1250.6
  3. POWER LEVEL TO WHICH RESTRICTED (IF ANY) (MWe-Net): None
  4. REASONS FOR RESTRICTION (IF ANY): N/A
- |   | THIS MONTH | YR TO DATE | CUMULATIVE |
|---|------------|------------|------------|
| 5. NUMBER OF HOURS REACTOR WAS CRITICAL.....  | 8.6        | 8.6        | 13789.7    |
| 6. REACTOR RESERVE SHUTDOWN HOURS.....  | 0          | 0          | 0          |
| 7. HOURS GENERATOR ON LINE.....   | 0          | 0          | 13141.5    |
| 8. UNIT RESERVE SHUTDOWN HOURS.....   | 0          | 0          | 0          |
| 9. GROSS THERMAL ENERGY GENERATED (MWt).....  | 0          | 0          | 47678208   |
| 10. GROSS ELECTRICAL ENERGY GENERATED (MWH).....                                      | 0          | 0          | 16097490   |
| 11. NET ELECTRICAL ENERGY GENERATED (MWH).....  | -18877     | -35893     | 15088590   |
| 12. REACTOR SERVICE FACTOR.....   | 1.2%       | 0.4%       | 60.5%      |
| 13. REACTOR AVAILABILITY FACTOR.....  | 1.2%       | 0.4%       | 60.5%      |
| 14. UNIT SERVICE FACTOR.....  | 0.0%       | 0.0%       | 57.7%      |
| 15. UNIT AVAILABILITY FACTOR.....   | 0.0%       | 0.0%       | 57.7%      |
| 16. UNIT CAPACITY FACTOR (Using MDC).....   | -2.0%      | -1.3%      | 53.0%      |
| 17. UNIT CAPACITY FACTOR (Using Design MWe).....                                      | -2.0%      | -1.3%      | 53.0%      |
| 18. UNIT FORCED OUTAGE RATE.....  | 0%         | 100.0%     | 17.3%      |
| 19. SHUTDOWNS SCHEDULED OVER NEXT 6 MONTHS (TYPE, DATE, AND DURATION OF EACH):<br>N/A |            |            |            |
| 20. IF SHUT DOWN AT END OF REPORT PERIOD, ESTIMATED DATE OF STARTUP: <u>04/07/91</u>  |            |            |            |

AVERAGE DAILY UNIT POWER LEVEL

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DOCKET NO. 50-498  
UNIT 1  
DATE Apr. 4, 1991  
COMPLETED BY A.P. Kent  
TELEPHONE 512/972-7786

MONTH MARCH

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	0

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
17	0
18	0
19	0
20	0
21	0
22	0
23	0
24	0
25	0
26	0
27	0
28	0
29	0
30	0
31	0

# UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-498  
 UNIT 1  
 DATE Apr. 4, 1991  
 COMPLETED BY A.P. Kent  
 TELEPHONE 512/972-7786

REPORT MONTH MARCH

No.	Date	Type <sup>1</sup>	Duration (Hours)	Reason <sup>2</sup>	Method of Shutting Down Reactor <sup>3</sup>	Licensee Event Report #	System Code <sup>4</sup>	Component Code <sup>5</sup>	Cause & Corrective Action to Prevent Recurrence
91-01	910115	S	744.0	C	4	N/A	N/A	N/A	Refueling and scheduled maintenance outage.

<sup>1</sup>F: Forced  
 S: Scheduled

<sup>2</sup>Reason:  
 A-Equipment Failure (Explain)  
 B-Maintenance or Test  
 C-Refueling  
 D-Regulatory Restriction  
 E-Operator Training & License Exam  
 F-Administrative  
 G-Operational Error (Explain)  
 H-Other (Explain)

<sup>3</sup>Method:  
 1-Manual  
 2-Manual Scram  
 3-Automatic Scram  
 4-Cent. of Existing  
 Outage  
 5-Reduction  
 9-Other

<sup>4</sup>IEEE 805-1983

<sup>5</sup>IEEE 803A-1983

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PORVs and Safety Valves Summary

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There were no PORV or Safety Valves challenged during the reporting period.



SOUTH TEXAS PROJECT  
ELECTRIC GENERATING STATION  
UNIT 2  
MONTHLY OPERATING REPORT  
MARCH 1991  
HOUSTON LIGHTING AND POWER CO.  
NRC DOCKET NO. 50-499  
LICENSE NO. NPF-80

Reviewed By:	<u>CC P. J. H.</u>	<u>4-10-91</u>
	Supervisor	Date
Reviewed By:	<u>D. A. Logan for J. J. W.</u>	<u>4/10/91</u>
	Plant Engineering Manager	Date
Approved By:	<u>W. J. J. J.</u>	<u>4/10/91</u>
	Plant Manager	Date

Monthly Summary

STPEGS Unit 2 began the reporting period at 100% reactor power.

On 3/14/91 at 1816 the unit tripped from 100% reactor power due to a Main Generator lockout. The lockout was associated with the actuation of a high speed differential relay circuit across the Main Generator Isophase Bus and Main Generator breaker. Troubleshooting efforts indicated no faults on the Main Generator or Isophase Bus. The differential relay was replaced and no problems which could have caused the trip were identified on other protective relay circuitry. The unit was returned to service on 3/18/91 at 0917.

On 3/30/91 at 1932 the unit tripped on actuation of the Generator Lockout relay via the Main Generator Isophase Bus differential relay. A turbine and reactor trip followed. The sequence of events was similar to those that preceded the unit trip on 3/14/91. The actuation of the Main Generator Isophase Bus relay and subsequent Main Generator Lockout was caused by a difference in the saturation rates of the Current Transformers associated with the Isophase Bus.

The unit concluded the reporting period with analysis efforts ongoing.

OPERATING DATA REPORT

DOCKET NO. 50-499  
UNIT 2  
DATE Apr. 10, 1991  
COMPLETED BY A.P. Kenc  
TELEPHONE 512/972-7786

OPERATING STATUS

1. REPORTING PERIOD: 03/01-03/31 GROSS HOURS IN REPORTING PERIOD: 744
  2. CURRENTLY AUTHORIZED POWER LEVEL (MWt): 3800  
MAX. DEPEND. CAPACITY (MWe-Net): 1250.6  
DESIGN ELECTRICAL RATING (MWe-Net): 1250.6
  3. POWER LEVEL TO WHICH RESTRICTED (IF ANY) (MWe-Net): None
  4. REASONS FOR RESTRICTION (IF ANY): N/A
- |  | THIS MONTH     | YR TO DATE     | CUMULATIVE      |
|--|----------------|----------------|-----------------|
| 5. NUMBER OF HOURS REACTOR WAS CRITICAL.....   | <u>682.3</u>   | <u>2065.5</u>  | <u>11046.8</u>  |
| 6. REACTOR RESERVE SHUTDOWN HOURS.....   | <u>0</u>       | <u>0</u>       | <u>0</u>        |
| 7. HOURS GENERATOR ON LINE.....  | <u>628.5</u>   | <u>2002.9</u>  | <u>10348.5</u>  |
| 8. UNIT RESERVE SHUTDOWN HOURS.....  | <u>0</u>       | <u>0</u>       | <u>0</u>        |
| 9. GROSS THERMAL ENERGY GENERATED (MWt).....   | <u>2372189</u> | <u>7406782</u> | <u>37112049</u> |
| 10. GROSS ELECTRICAL ENERGY GENERATED (MWH)...   | <u>803590</u>  | <u>2517310</u> | <u>12539780</u> |
| 11. NET ELECTRICAL ENERGY GENERATED (MWH)....  | <u>764028</u>  | <u>2403929</u> | <u>11852697</u> |
| 12. REACTOR SERVICE FACTOR.....  | <u>91.7%</u>   | <u>95.6%</u>   | <u>70.7%</u>    |
| 13. REACTOR AVAILABILITY FACTOR.....   | <u>91.7%</u>   | <u>95.6%</u>   | <u>70.7%</u>    |
| 14. UNIT SERVICE FACTOR.....   | <u>84.5%</u>   | <u>92.7%</u>   | <u>66.2%</u>    |
| 15. UNIT AVAILABILITY FACTOR.....  | <u>84.5%</u>   | <u>92.7%</u>   | <u>66.2%</u>    |
| 16. UNIT CAPACITY FACTOR (Using MDC).....  | <u>82.1%</u>   | <u>89.0%</u>   | <u>60.7%</u>    |
| 17. UNIT CAPACITY FACTOR (Using Design MWe)...   | <u>82.1%</u>   | <u>89.0%</u>   | <u>60.7%</u>    |
| 18. UNIT FORCED OUTAGE RATE.....   | <u>15.5%</u>   | <u>7.3%</u>    | <u>8.7%</u>     |
| 19. SHUTDOWNS SCHEDULED OVER NEXT 6 MONTHS (TYPE, DATE AND DURATION OF EACH):<br>Refueling and scheduled maintenance outage to begin September 28, 1991. |                |                |                 |
| 20. IF SHUT DOWN AT END OF REPORT PERIOD, ESTIMATED DATE OF STARTUP: <u>04/02/91</u>   |                |                |                 |

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-499  
UNIT 2  
DATE Apr. 10, 1991  
COMPLETED BY A.P. Kent  
TELEPHONE 512/972-7786

MONTH MARCH

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	1241
2	1242
3	1243
4	1241
5	1242
6	1243
7	1243
8	1244
9	1245
10	1245
11	1246
12	1244
13	1246
14	936
15	0
16	0

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
17	0
18	290
19	1139
20	1243
21	1250
22	1251
23	1249
24	1251
25	1247
26	1243
27	1234
28	1231
29	1245
30	998
31	0

## UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-499UNIT 2DATE Apr. 10, 1991COMPLETED BY A.P. KentTELEPHONE 512/972-7786REPORT MONTH MARCH

No.	Date	Type <sup>1</sup>	Duration (Hours)	Reason <sup>2</sup>	Method of Shutting Down Reactor <sup>3</sup>	Licensee Event Report #	System <sup>4</sup> Code	Component <sup>5</sup> Code	Cause & Corrective Action to Prevent Recurrence
91-04	910314	F	87.0	A	3	2-91-003	EL	RLY-86	<p>Reactor/Turbine trip from 100% reactor power due to a Main Generator Lockout. The lockout was associated with the actuation of a high speed differential relay circuit across the Main Generator Isophase Bus and Generator Breaker.</p> <p>Troubleshooting efforts indicated no faults on the Main Generator or Isophase Bus. The differential relay was replaced and no problems which could have caused the trip were identified on other protective relay circuitry. Causes and corrective actions are addressed in event 91-05.</p>

<sup>1</sup>F: Forced  
S: Scheduled

<sup>2</sup>Reason:  
A-Equipment Failure (Explain)  
B-Maintenance or Test  
C-Refueling  
D-Regulatory Restriction  
E-Operator Training & License Exam  
F-Administrative  
G-Operational Error (Explain)  
H-Other (Explain)

<sup>3</sup>Method:  
1-Manual  
2-Manual Scram  
3-Automatic Scram  
4-Cont. of Existing  
Outage  
5-Reduction  
9-Other

<sup>4</sup>IEEE 805-1983

<sup>5</sup>IEEE 803A-1983

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## UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-499  
 UNIT 2  
 DATE Apr. 10, 1991  
 COMPLETED BY A.P. Kent  
 TELEPHONE 512/972-7786

REPORT MONTH MARCH

No.	Date	Type <sup>1</sup>	Duration (Hours)	Reason <sup>2</sup>	Method of Shutting Down Reactor <sup>3</sup>	Licensee Event Report #	System Code <sup>4</sup>	Component Code <sup>5</sup>	Cause & Corrective Action to Prevent Recurrence
91-05	910330	F	28.5	A	3	2-91-004	EL	RLY- 6	<p>Reactor/Turbine trip due to Main Generator Lockout. The lockout occurred at the same time Unit 1 closed switchyard breaker Y510. The actuation of the Main Generator Isophase Bus relay and subsequent Main Generator Lockout was caused by a difference in the saturation rates of the Current Transformers associated with the Isophase Bus Relay.</p> <p>The evaluation of the test data collected for the Main Generator Isophase Bus relay and the associated Current Transformers continues. Corrective actions associated with the Current Transformer are being addressed in the LER.</p>

<sup>1</sup>F: Forced  
 S: Scheduled

<sup>2</sup>Reason:  
 A-Equipment Failure (Explain)  
 B-Maintenance or Test  
 C-Refueling  
 D-Regulatory Restriction  
 E-Operator Training & License Exam  
 F-Administrative  
 G-Operational Error (Explain)  
 H-Other (Explain)

<sup>3</sup>Method:  
 1-Manual  
 2-Manual Scram  
 3-Automatic Scram  
 4-Cont. of Existing  
 Outage  
 5-Reduction  
 9-Other

<sup>4</sup>IEEE 805-1983

<sup>5</sup>IEEE 803A-1983

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 ST-HL-AE-3744  
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PORVs and Safety Valves Summary

There were no PORV or Safety Valves challenged during the reporting period.