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

March 26, 1993
ST-HL-AE-4379
File No.: G26
10CFR50.73

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

South Texas Project
Unit 1
Docket No. STN 50-498
Licensee Event Report 93-010
Unplanned Actuation of an ESF Damper due to the Presence of Halon

Pursuant to 10CFR50.73, Houston Lighting & Power (HL&P) submits the attached Unit 1 License Event Report 93-010 regarding an unplanned actuation of an Engineered Safety Features (ESF) Damper due to the presence of halon. This event did not have an adverse effect on the health and safety of the public.

If you should have any questions on this matter, please contact Mr. J. M. Pinzon at (512) 972-8027 or me at (512) 972-7921.

W. H. Kinsey, Jr.
Vice President,
Nuclear Generation

JMP/pa

Attachment: LER 93-010 (South Texas, Unit 1)

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LER\93071002.U1

c:

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NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

# LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

| FACILITY NAME (1) | DOCKET NUMBER (2) | PAGE (3) |
|---|---|---|
| South Texas, Unit 1 | 05000 498 | 1 OF 04 |

TITLE (4)
Unplanned Actuation of an ESF Damper due to the Presence of Halon

| EVENT DATE (5) | | | LER NUMBER (6) | | | REPORT NUMBER (7) | | | OTHER FACILITIES INVOLVED (8) | |
|---|---|---|---|---|---|---|---|---|---|---|
| MONTH | DAY | YEAR | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | MONTH | DAY | YEAR | FACILITY NAME | DOCKET NUMBER |
| 0 2 | 2 3 | 9 3 | 9 3 | 0 1 0 | 0 0 | 0 3 | 2 6 | 9 3 | | 05000 |
| | | | | | | | | | FACILITY NAME | DOCKET NUMBER 05000 |

| OPERATING MODE (9) | 5 | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| POWER LEVEL (10) | 0 | | 20.402(b) | | 20.405(c) | X | 50.73(a)(2)(iv) | | 73.71(b) |
| | | | 20.405(a)(1)(i) | | 50.36(c)(1) | | 50.73(a)(2)(v) | | 73.71(c) |
| | | | 20.405(a)(1)(ii) | | 50.36(c)(2) | | 50.73(a)(2)(vii) | | OTHER |
| | | | 20.405(a)(1)(iii) | | 50.73(a)(2)(i) | | 50.73(a)(2)(viii)(A) | | (Specify in Abstract below and in Text, NRC Form 366A) |
| | | | 20.405(a)(1)(iv) | | 50.73(a)(2)(ii) | | 50.73(a)(2)(viii)(B) | | |
| | | | 20.405(a)(1)(v) | | 50.73(a)(2)(iii) | | 50.73(a)(2)(x) | | |

LICENSEE CONTACT FOR THIS LER (12)

| NAME | TELEPHONE NUMBER (Include Area Code) |
|---|---|
| Jairo Pinzon - Senior Engineer | (5 1 2) 9 7 2 - 8 0 2 7 |

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

| CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NPRDS | | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NPRDS |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |

| SUPPLEMENTAL REPORT EXPECTED (14) | | | | EXPECTED SUBMISSION DATE (15) | MONTH | DAY | YEAR |
|---|---|---|---|---|---|---|---|
| | YES (If yes, complete EXPECTED SUBMISSION DATE) | X | NO | | | | |


ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On February 24, 1993, Unit 1 was in Mode 5 at 0% power. At 0000 hours, a halon actuation occurred in the plant computer room, associated distribution room and associated battery room. Subsequently, an Engineered Safety Features (ESF) automatic isolation of the plant computer room damper (HE-FV-9603) occurred due to the presence of a halon actuation signal. Operators then manually closed the main supply damper to the computer and relay room (HE-9699). Automatic closure of the dampers associated with the distribution and battery rooms also occurred to isolate these rooms due to the presence of the halon actuation signal. The cause of this event was that the effects of an electrical load test on the Fire Protection System were not considered prior to the performance of the test. A contributing cause was less than adequate guidance on the use of load cells. Corrective actions include revising the Fire Hazards Evaluations procedure to include examples of activities which require performance of a Fire Hazard Evaluation, and performing an evaluation to determine if additional measures can be taken to prevent future inadvertent actuations of the fire protection system. Additionally, the Planners Guide will be revised to add precautions for the use of load cells.


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DESCRIPTION OF EVENT:

On February 24, 1993, Unit 1 was in Mode 5 at 0% power. At 0000 hours, a halon actuation occurred in the plant computer room, associated distribution room and associated battery room. Subsequently, an Engineered Safety Features (ESF) automatic isolation of the plant computer room damper (HE-FV-9603) occurred due to the presence of a halon actuation signal. Operators then manually closed the main supply to the computer and relay room (HE-9699). Automatic closure of the fire dampers associated with the distribution and battery rooms also occurred to isolate these rooms due to the presence of the halon actuation signal.

On February 23, 1993, at 2356 hours, maintenance personnel were performing a load test on a voltage regulating transformer associated with the plant computer when an Electrical Auxiliary Building (EAB) Ion Detector computer point alarmed in the main control room indicating an alarm condition in the Plant Computer Battery Room. At 2357 hours, the alarm from the detector was acknowledged by main control room personnel and a non-licensed operator was sent to investigate the fire alarm. At 0000 hours, on February 24, 1993, a second EAB Ion Detector computer point associated with the Plant Computer Battery Room alarmed. In accordance with design, a halon actuation occurred in the plant computer room, associated distribution room, and associated battery room due to the presence of both alarm signals. An ESF automatic isolation of the plant computer room via closure of supply damper HE-FV-9603 occurred due to the presence of the actuation signal. Operators then manually closed dampers HE-FV-9699, the main supply to the computer and relay room, and HE-FV-9700, the relay room exhaust damper, which isolated the relay room in an effort to isolate the control room envelope HVAC boundary. Automatic closing of dampers associated with the distribution and battery rooms also occurred to isolate these rooms due to the presence of the halon actuation signal. The control room emergency ventilation system was being operated in the recirculation mode due to the inoperability of both of the toxic gas analyzers. Upon hearing actuation of the fire dampers, maintenance personnel, who were in the area performing the load test, unloaded the transformer by disconnecting the load cell output breakers, left the area, and informed the control room of the cause for the actuation. The Fire Protection Coordinator responded to the actuation and coordinated activities associated with the purging of halon from the affected rooms. Purging of the area was concluded at 0642 hours on February 24, 1993.

DESCRIPTION OF EVENT: (Con't)

The distribution room where the load test was being performed is a room which measures approximately 16' x 21'. This relatively small room did not have adequate area to dissipate the combustion by-products generated by the load cells. Discussion with personnel revealed that, generally, load cells are placed in larger areas, (i.e., hallways) during the performance of the load test. It is also noted that some load cells utilized are equipped with cooling fans.

The HVAC isolation of the relay room during this event did not cause the room temperature to exceed 78°F as required by Technical Specification 3.7.13.

CAUSE OF EVENT:

The immediate cause of the actuation of the ESF Damper was the actuation of the halon protection system. The halon actuation was due to generation of combustion by-products during the performance of a load test on the voltage regulating transformer associated with the plant computer. Additionally, the room in which the work was being performed is relatively small making it difficult to dissipate the combustion by-products generated by the load cell. The load test was being performed to verify operability of the transformer after the performance of a maintenance activity to test/replace the tank capacitors. When heated during the performance of the load test, dust inside the load cell created particulates which triggered the actuation of the halon protection system.

The cause of this event was that the effects of the load test on the fire protection system were not considered prior to the performance of the test. No Fire Hazards Evaluation was performed or considered prior to the performance of the load test. A contributing cause was less than adequate guidance on the use of load cells. The work instruction did not provide sufficient guidance or precautions for the test.

ANALYSIS OF EVENT:

The event is reportable pursuant to 10CFR50.73(a)(2)(iv). This did not pose a threat to the safety of plant personnel. The halon protection system responded properly in response to the alarm actuation of both zones of the ion detectors. The halon actuation did not adversely affect the operability of any equipment.

CORRECTIVE ACTIONS:

1. The area was purged of halon and a continuous fire watch was posted for the area after the actuation.

2. After the halon was purged from the affected rooms, the load cell was removed from the transformer after the transformer was verified to be operating properly by the system engineer.

3. The dampers were restored to the required configuration. Additionally, the halon which was utilized during the actuations was replaced.

4. HL&P will revise the Fire Hazards Evaluations procedure to include examples of activities which require performance of a Fire Hazard Evaluation. This action will be completed by June 30, 1993.

5. The Planners Guide will be revised to add precautions for the use of load cells. The Planners Guide will be revised by June 24, 1993.

6. HL&P will perform an evaluation of all types of suppression devices (i.e., deluge, foam, halon) to determine if other potential sources for inadvertent fire protection system actuations exist. This evaluation will be completed by June 30, 1993. Corrective actions will be developed as necessary.

ADDITIONAL INFORMATION:

There have been no previously reported events which involved an unplanned actuation as a result of a release of halon.