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

April 13, 1992
ST-HL-AE-4068
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 92-003
Reactor Trip Due to Failure to Follow
Procedures During RCS Flow Transmitter Restoration

Pursuant to 10CFR50.73, Houston Lighting & Power (HL&P) submits the attached Licensee Event Report 92-003 regarding a reactor trip due to failure to follow procedures during RCS flow transmitter restoration. This event did not have 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 me at (512) 972-7205.

Warren H. Kinsey, Jr.
for William J. Jump
Manager,
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MAC/nl

Attachment: LER 92-003 (South Texas, Unit 1)

210027





IE22

cc:

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Revised 10/11/91

L4/NRC/

NRC FORM 366 (6-89) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92
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.

# LICENSEE EVENT REPORT (LER)

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

TITLE (4): Reactor Trip Due to Failure to Follow Procedures During RCS Flow Transmitter Restoration

| 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 3 | 1 4 | 9 2 | 9 2 | 0 0 3 | 0 0 | 0 4 | 1 3 | 9 2 | | 0 5 0 0 0 |
| | | | | | | | | | | 0 5 0 0 0 |

| OPERATING MODE (9) | | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11) | | | |
|---|---|---|---|---|---|
| 1 | | 20.402(b) | 20.405(c) | X 50.73(a)(2)(iv) | 73.71(b) |
| POWER LEVEL (10) | | 20.405(a)(1)(i) | 50.36(c)(1) | 50.73(a)(2)(v) | 73.71(c) |
| 1 0 0 | | 20.405(a)(1)(ii) | 50.36(c)(2) | 50.73(a)(2)(vii) | OTHER (Specify in Abstract below and in Text, NRC Form 366A) |
| | | 20.405(a)(1)(iii) | 50.73(a)(2)(i) | 50.73(a)(2)(viii)(A) | |
| | | 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 |
|---|---|
| | AREA CODE |
| Charles Ayala - Supervising Licensing Engineer | 5 1 2 9 7 2 - 8 6 2 8 |

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 fifteen single-space typewritten lines) (16)

On March 14, 1992, Unit 1 was in Mode 1 at 100% power. A reactor trip occurred at approximately 1108 hours from a momentary false reactor coolant low flow trip signal. Instrumentation & Control Technicians calibrating the Reactor Coolant flow transmitter reversed the procedural sequence of restoring the transmitter causing a momentary low (below setpoint) differential pressure to be detected by the two adjacent flow transmitters. This event completed the logic in the Solid State Protection System to trip the reactor. The cause of this event was failure to follow procedures which resulted from insufficient supervisory and management emphasis on the risk associated with the task, and a limited sense of responsibility by the technicians to ensure proper task completion. The actions being taken to correct this event are: supervision is required to be present to ensure emphasis is placed on completing the activity correctly when a potential reactor trip could occur; clear direction for use and physical presence of procedures has been provided to maintenance craftsmen; and a memorandum from management was issued emphasizing the self-checking principle.

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DESCKIPTION OF EVENT:

On March 14, 1992, Unit 1 was in Mode 1 at 100 percent power. A reactor trip occurred at approximately 1108 hours from a momentary false reactor coolant low flow trip signal. At that time, Instrumentation and Control Technicians were calibrating a flow transmitter for Reactor Coolant Flow Loop 2 Protection Set 2. The work document to perform the calibration was initiated on March 13, 1992, due to an evaluation of the previous two transmitter data and channel comparisons rendering the transmitter calibration suspect. The work document instructions directed the technicians to use a surveillance procedure. The transmitter was removed from service and as found data was recorded. An adjustment was made to the transmitter to bring it within tolerance. While returning the transmitter to service, the transmitters high pressure side valve was opened first instead of the low pressure side valve to pressurize the transmitter which was contrary to the procedure. A momentary low (below setpoint) differential pressure was detected by two adjacent flow transmitters. This completed the two-out-of-three coincidence logic in the Solid State Protection System and with the Nuclear Instrumentation System permissive P-8 being satisfied (Reactor Power above 40% Power), the reactor tripped on reactor coolant low flow. The plant was stabilized in Mode 3. The main steam isolation valves were closed to limit Reactor Coolant System cooldown. The NRC was notified on March 14, 1992 at 1327 hours.

The three transmitters, that measure reactor coolant flow, are connected to the process line by a common tap on the high pressure side. This is a unique piping arrangement. The opening of the high pressure valve first results in the two adjacent flow transmitters momentarily supplying the pressure needed to pressurize the transmitter being returned to service. A momentary pressure drop of approximately three pounds per square inch is all that is required to exceed the differential pressure setpoint.

CAUSE OF EVENT:

The cause of this event was failure to follow procedures which resulted from insufficient supervisory and management emphasis on the risk associated with the task, and a limited sense of responsibility by the technicians to ensure proper task completion. In addition, management controls over procedure usage were not clearly stated resulting in confusion over requirements for having procedures present during task performance.

CAUSE OF EVENT: (Continued)

The technician in the Reactor Containment Building (RCB) performing the work to return the transmitter to service did not have a copy of the procedure in his possession, but rather was following verbal instructions from a technician in the relay rack area of the Electrical Auxiliary Building who did possess the procedure. The technician providing verbal direction failed to read and communicate specific steps for return to service. The technician in the RCB valved in the flow transmitter in the reverse order.

ANALYSIS OF EVENT:

The event is reportable pursuant to 10CFR50.73(a)(2)(iv). There were no adverse radiological or safety consequences as a result of this event. Engineered Safety Systems functioned as designed and no unexpected post-trip transients occurred.

CORRECTIVE ACTIONS:

1. Shift and Unit supervisors are being briefed and it is being emphasized that they will be held accountable for taking conservative action, including power reduction or other actions that will increase the safety margin and/or reduce the risk of a plant transient or trip when evaluating the safety impact of work or testing and to monitor these activities to ensure that they are controlled. This activity will be completed by May 1, 1992.

2. Plant Management has established a reactor trip prevention policy which adds administrative controls to work activities that have a potential to cause a reactor trip. These activities are required to be under direct control of an on-the-scene supervisory individual to ensure the job is completed correctly and within safety margins.

3. A Maintenance Department Standing Order was issued requiring that performers of a procedure will have a copy of the procedure or, at the minimum, a copy of the portion of the procedure that is to be performed by those personnel who are working at locations other than where the controlling procedure is maintained.

CORRECTIVE ACTIONS: (Continued)

4. Department training sessions will be conducted for appropriate maintenance personnel. The session will discuss the lessons learned from this event and the training will be completed by May 28, 1992.

5. Management has issued a memorandum to emphasize the importance of the self-checking principle and to request line management to reinforce these principles with their personnel.

ADDITIONAL INFORMATION:

Similar events have been reported regarding reactor trips due to failure to follow procedure which are LER 89-011 (Unit 2) "Inadvertent Safety Injection and Reactor Trip System Actuations Due to Personnel Error", LER 90-013 (Unit 2) "Reactor Trip Caused by Manipulation of the Incorrect Reactor Trip Breaker Test Pushbutton" and LER 91-022 (Unit 1) "Reactor Trip During Performance of SSPS Logic Functional Test".