

The Light company

Houston Lighting & Power

South Texas Project Electric Generating Station P. O. Box 289 Wadsworth, Texas 77483

June 18, 1992
ST-HL-AE-4125
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 92-004
Regarding Shunt Trip Contacts for Manual
Reactor Trip Breakers Not Tested per Technical Specifications

Pursuant to 10CFR50.73, Houston Lighting & Power (HL&P) submits the attached Licensee Event Report 92-004 regarding shunt trip contacts for manual reactor trip breakers not tested per Technical Specifications. This event did not have an adverse impact on the health and safety of the public.

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

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

JMP/ag

Attachment: LER 92-004 (South Texas, Unit 1)

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A Subsidiary of Houston Industries Incorporated

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Houston Lighting & Power Company
South Texas Project Electric Generating Station

ST-HL-AE-4125
File No.: G26
Page 2

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Revised 10/11/91

L4/NRC/

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 600 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3155-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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

On May 19, 1992, Units 1 and 2 were in Mode 1 and at 100% power. A system engineer performing a biennial review of a surveillance test procedure used to test the manual reactor trip function, identified that the test did not adequately test all contacts associated with the handswitches used to initiate a manual reactor trip via the shunt trip device. The lack of this testing rendered both channels of the manual reactor trip function inoperable. Technical Specification 3.0.3 was entered and an Unusual Event was declared. The Unusual Event was terminated following verbal authorization from the NRC through a Temporary Waiver of Compliance. The cause of the event was unfamiliarity of the individual responsible for developing the original procedure with the reactor trip feature. A contributing cause was inadequate review of the procedure during various review cycles. Corrective actions include: developing a temporary procedure to test the manual reactor trip via the shunt trip device, revising the permanent procedure to address the necessary testing, and reviewing surveillance procedures to ensure that they meet Technical Specification requirements.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 600 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555. ALSO 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

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NUMBERREVISION
NUMBER

South Texas, Unit 1

0500049892-064-0002 OF 06

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

DESCRIPTION OF EVENT:

On May 19, 1992, Unit 1 and Unit 2 were in Mode 1 at 100 percent power. A biennial review of a surveillance test procedure used to test the manual reactor trip function was being conducted. The system engineer performing the review identified that the procedure did not adequately test all contacts associated with the handswitch used to initiate a manual reactor trip via the shunt trip device. This applied to both the reactor trip and bypass breakers which rendered both channels of the manual reactor trip function inoperable. Technical Specification 3.0.3 was entered for both units. Technical Specifications required shutdowns were initiated and an Unusual Event was declared. The Unusual Event was terminated following verbal authorization from the NRC temporarily waiving compliance to the Technical Specification requirement. A written waiver of compliance was received from the NRC on May 21, 1992.

The reactor trip breakers can be tripped by de-energizing the undervoltage (UV) device or energizing the shunt trip device. During performance of the test, the reactor trip handswitch is taken to the trip position. One set of contacts associated with the handswitch opens, which de-energizes the UV device and the auto shunt trip relay. De-energizing the auto shunt trip relay closes other contacts which completes a path to energize the shunt trip device and trip the breaker. This pathway is also energized during an automatic reactor breaker trip and is referred to as the automatic shunt trip feature. A second set of contacts associated with the handswitch if closed, completes a direct path to energize the shunt trip device and trip the breaker. This pathway would only function in the event of a manual reactor trip. The surveillance test procedure, as written, does not conclusively test the manual reactor trip pathway. The test procedure currently places the handswitch in the tripped position and then verifies that the UV device is de-energized and the shunt trip device is energized by taking voltage measurements across specified terminal blocks. To test the manual reactor trip pathway, the "Block Auto Shunt Trip" pushbutton in series with the contacts closed by the shunt trip relay must be depressed while holding the handswitch in the tripped position. This blocks the actuation signal initiated via the auto shunt trip relay and ensures that the continuity of the handswitch contacts, which directly energize the shunt trip device, is verified. This portion of the test was omitted in the original and subsequent revisions of the test procedure. (See attached figure)

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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)	DOC/LET NUMBER (2)	LER NUMBER (6)				PAGE (3)	
		YEAR	SEQUENCE NUMBER	IL	REVISION NUMBER		
South Texas, Unit 1	0 5 0 0 0	4 9 8 9 2	0 0 4	0 0 0 3	OF	0 6	

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

A review of the initial and subsequent revision of the procedure indicates that Generic Letter (GL) 83-28 was included as a reference. The GL 85-09, which specified the Technical Specification changes for GL 83-28, states that if testing is performed using voltage measurements, two precautions must be taken to ensure accurate results. First, the "Block Auto Shunt Trip" switch needs to be used to preclude energizing the shunt trip coil via the automatic shunt trip feature. In addition, the red indicating light in parallel with the handswitch contacts would need to be removed to prevent ambiguous measurements. Neither of these precautions were included in the original procedure or revisions to the procedure. GL 85-09 was not referenced in the procedure, although it was available for review when the procedure was developed. A similar omission exists with testing associated with the Safety Injection (SI) handswitches.

Testing of the manual shunt trip feature was adequately performed in the preoperational test prior to licensing of the units.

The original and two subsequent revisions of the surveillance procedure had been reviewed during the development process by personnel in Plant Operations, Plant Engineering and Nuclear Assurance. Three previous biennial reviews have been performed by Maintenance or Plant Engineering personnel. The last biennial review, performed in November, 1990, was done by the same individual who identified the problem during this biennial review cycle. An independent technical review instituted due to previous problems with surveillance test procedures, was also performed on the latest revision. The technical review, which has subsequently been incorporated into a surveillance test review checklist, and the biennial review both contain review criteria to verify Technical Specification compliance. References to other generic review of surveillance test procedures to verify Technical Specification compliance have been included in previously reported LERs or Notices of Violation. This procedure was also reviewed by the NRC and was determined to meet the operability test requirements to verify contacts and wiring of the manual trip circuit as documented in Inspection Report 87-08.

CAUSE OF EVENT:

The cause of this event is due to unfamiliarity of the individual responsible for developing the original procedure with the manual reactor trip feature. A contributing cause was the inadequate review of the procedure during various review cycles.

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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 (F-30), 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 (3)

PAGE (3)

South Texas, Unit 1

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TEXT (If more space is required, use additional NRC Form 355A's) (17)

ANALYSIS OF EVENT:

Failure to completely test the manual shunt trip function is reportable pursuant to 10CFR50.73(a)(2)(i)(B) since both units operated in an untested condition in violation of Technical Specification 4.3.1.1. The partial testing of the shunt trip feature performed under the current surveillance program as well as the testing of the manual shunt trip under the preoperational test program provide confidence in the operability of the shunt trip device. Previous manual reactor trips have also provided confidence. In the event that the handswitch would fail to initiate a manual reactor trip, redundancy is available in the manual handswitches and in the automatic trip feature. Also, operator action can be taken to de-energize the motor-generator sets which provides power to the control rod drive mechanism causing the control rods to drop into the core. This event did not result in additional risk to the public or adversely affect the ability to safely shutdown the plant.

CORRECTIVE ACTIONS:

1. A temporary procedure has been initiated to test the manual shunt trip initiated by the reactor trip handswitch. Testing shall be performed during the next scheduled or unscheduled outage where the plant is in Mode 3 or lower for each unit.
2. The existing permanent plant procedure will be revised to test the manual reactor trip pathway of the reactor trip and SI handswitches. The test will be completed during the next refueling outage for each unit.
3. A verbal Temporary Waiver of Compliance to Technical Specification 4.3.1.1 was granted by the NRC on May 19, 1992, followed by a written authorization on May 21, 1992. An amendment to Technical Specification 4.3.1.1, Table 4.3-1 was approved by the NRC on June 2, 1992.

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LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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)

DOCKET NUMBER (2)

LER NUMBER (6)

PAGE (3)

South Texas, Unit 1

0 5 0 0 0 4 9 8 9 2 - 0 0 4 - 0 0 0 5 OF 0 6

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

4. The surveillance procedures for the manual reactor trip function, SI input from the Engineered Safety Feature Actuation System (ESFAS), automatic trip and interlock logic and reactor trip bypass breakers were reviewed for similar deficiencies with no adverse findings. An indepth review of the ESFAS and reactor trip surveillance procedures for one train of one unit will be performed to ensure they adequately meet Technical Specification requirements. Since the procedures for each train are similar, by selecting procedures from one train of one unit an adequate verification can be achieved for that particular surveillance. This review will be completed by November 3, 1992. Based on the results of this review HL&P will determine if further review is necessary.

ADDITIONAL INFORMATION:

Several LERs have previously been submitted documenting inadequate surveillance test procedures. These include 1-87-009, 1-87-019, 1-87-026, 1-88-006, 1-88-007, 1-88-013, 1-88-034 and 1-88-065.

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LICENSEE EVENT REPORT (LER)
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FACILITY NAME (1)

DOCKET NUMBER (2)

LER NUMBER (6)

PAGE (3)

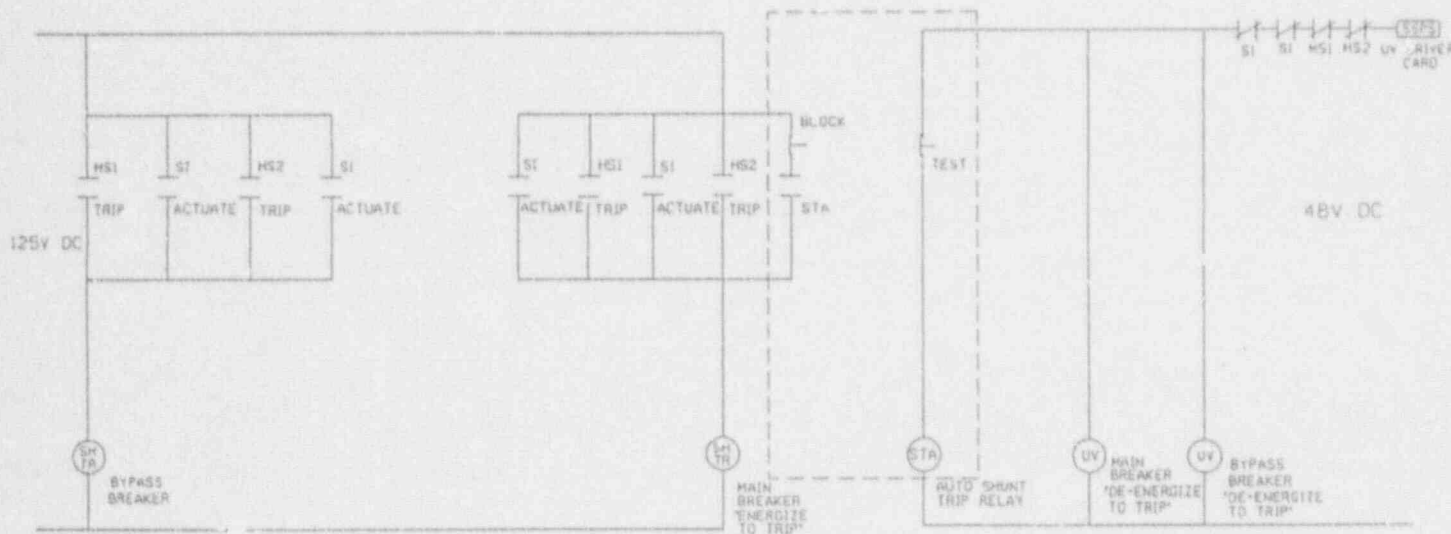
South Texas, Unit 1

0 5 0 0 0 4 9 8 9 2 - 0 0 4 - 0 0 0 6 OF 0 6

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

AUTO/MANUAL REACTOR TRIP CIRCUIT
TYPICAL TRAIN'S

SALEM H00/QL 83-28



UV = UNDERVOLTAGE
STA = SHUNT TRIP RELAY COIL

NOTE:

ALL HS1 CONTACTS OPERATE SIMULTANEOUSLY
ALL HS2 CONTACTS OPERATE SIMULTANEOUSLY
CONTACT 'STA' CLOSING WHEN RELAY 'STA' DE-ENERGIZES.

THIS SKETCH HAS BEEN VERIFIED TO BE AN ACCURATE REPRESENTATION OF THE ACTUAL CIRCUIT

Gang W. Halen 5/20/92

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