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

January 14, 1993
ST-HL-AE-4308
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 92-021
Main Steam Isolation Response Time Testing Not Being
Correctly Tested As Required per Technical Specifications

Pursuant to 10CFR50.73, Houston Lighting & Power (HL&P) submits the attached Unit 1 Licensee Event Report (LER 92-021) regarding Main Steam Isolation response time testing not being correctly tested as required per Technical Specifications. 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. C. A. Ayala at (512) 972-8628 or me at (512) 972-7921.

W. H. Kinsey, Jr.
Vice President,
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JMP/nl

Attachment: LER 92-021 (South Texas, Unit 1)

130019

IE22 1/1

cc:

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L4/NRC/

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 06

TITLE (4): Main Steam Isolation Response Time Testing Not Being Correctly Tested As Required per Technical Specifications

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
12	15	92	92	021	00	01	14	93	South Texas Unit 2	05000 499
									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)	000	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
		20.403(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)	X 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)
Charles Ayala - Supervising Licensing Engineer	(512) 972-8628

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 December 15, 1992, at 1600 hours, Unit 1 was in Mode 5 and Unit 2 was in Mode 1 at 100% power. The Surveillance Review Task Force identified that the Main Steam Line Isolation Actuation and Response Time Test did not satisfy the requirements for time response testing because it did not include the closing time of the Main Steam Isolation Bypass Valves. The cause of this event was that it was not recognized by the individuals developing the surveillance test procedures that time response testing of the Main Steam isolation required testing of the Isolation Bypass Valve. No specific guidance exists stating that the testing of the Isolation Bypass Valve is required. Corrective actions included revising the Main Steam Line Isolation and Response Time Test procedure to include an acceptance criteria of less than or equal to five seconds for the Main Steam Isolation Bypass Valve closure and successfully completing response time testing on the Unit 1 Main Steam Isolation Bypass Valves. Additionally, HL&P will perform a review of other components which are "normally closed" to develop necessary corrective actions.

REQUIRED NUMBER OF DIGITS/CHARACTERS
FOR EACH BLOCK

BLOCK NUMBER	NUMBER OF DIGITS/CHARACTERS	TITLE
1	UP YO 46	FACILITY NAME
2	8 TOTAL 3 IN ADDITION TO 05000	DOCKET NUMBER
3	VARIES	PAGE NUMBER
4	UP TO 76	TITLE
5	6 TOTAL 2 PER BLOCK	EVENT DATE
6	7 TOTAL 2 FOR YEAR 3 FOR SEQUENTIAL NUMBER 2 FOR REVISION NUMBER	LER NUMBER
7	6 TOTAL 2 PER BLOCK	REPORT DATE
8	UP TO 18 -- FACILITY NAME 8 TOTAL -- DOCKET NUMBER 3 IN ADDITION TO 05000	OTHER FACILITIES INVOLVED
9	1	OPERATING MODE
10	3	POWER LEVEL
11	1 CHECK BOX THAT APPLIES	REQUIREMENTS OF 10 CFR
12	UP TO 50 FOR NAME 14 FOR TELEPHONE	LICENSEE CONTACT
13	CAUSE VARIES 2 FOR SYSTEM 4 FOR COMPONENT 4 FOR MANUFACTURER NPRDS VARIES	EACH COMPONENT FAILURE
14	1 CHECK BOX THAT APPLIES	SUPPLEMENTAL REPORT EXPECTED
15	6 TOTAL 2 PER BLOCK	EXPECTED SUBMISSION DATE

DESCRIPTION OF EVENT:

On December 15, 1992, at 1600 hours, Unit 1 was in Mode 5 and Unit 2 was in Mode 1 at 100% power. The Surveillance Review Task Force identified that the Main Steam Line Isolation Actuation and Response Time Test did not satisfy the requirements for time response testing because it did not include the closing time of the Main Steam Isolation Bypass valves. Technical Specification 4.3.2.2, Table 3.3-5, items 5.b and 7, define the requirements for response time testing.

An operability review conducted the following day concluded that the Main Steam Isolation Valve Operability Surveillance Test procedure does provide the proper methodology to assure completeness regarding response time testing of the transmitters and other related instrumentation for the bypass valves. However, the stroke time acceptance criterion of the surveillance test procedure was greater than that required for time response testing. An evaluation was conducted to verify the actual closing times. The evaluation confirmed that the closing times for the four Unit 2 valves were sufficient to meet both time response criteria but two of the four Unit 1 valves did not meet the criteria and a third Unit 1 valve was marginal.

Following postulated accidents, safety considerations with respect to the Main Steam System are directed toward maintaining the capability of controlled reactor cooldown, minimizing release of radioactive material to the environment, and limiting the release of steam to the containment. A steam line break inside containment may result in a significant pressure rise in the Reactor Containment Building (RCB), so reverse flow protection is necessary to prevent uncontrolled blowdown of more than one Steam Generator in the RCB. Allowance is made for a single failure of an active component since all four Main Steam Isolation Valves (MSIVs) are designed to prevent reverse flow and are automatically closed by the protection system following a Main Steam line break. Reverse flow must be interrupted within ten seconds to limit the RCB pressure rise to the acceptable percentage of design pressure. To achieve this in the case of a double-ended break, the closure signal is generated and must reach the valve actuator within five seconds following the incident. The valve must fully close within five seconds from receipt of the initiating signal. For a

DESCRIPTION OF EVENT: (Con't)

Main Steam line break outside containment the 10 second closure time is sufficient to prevent excessive cooldown of the Reactor Coolant System.

A portion of the design basis for the Main Steam System includes the capability to provide isolation of the secondary side of the Steam Generators in the event of an accident. Main Stea Isolation and Isolation Bypass Valves are provided to achieve this. Automatic signals which close the MSIVs and the Main Steam Isolation Bypass valves are the High-2 Containment Pressure, low steam line pressure, and high negative steam line pressure rate signals.

A teleconference with Westinghouse personnel was held to determine (1) if the Westinghouse analysis regarding a Main Steam Line Break considered the Main Steam Isolation Bypass Valves and (2) the design basis for the Main Steam Isolation Bypass valves requiring a ten second closure as opposed to the five second closure designed into the MSIV. Westinghouse stated that the issue of whether an isolation valve and/or a bypass isolation valve is open is not relevant to the analysis. The analysis merely requires steam isolation within 10 seconds. There was no available information to explain the difference in designed closure times between the Main Steam Isolation and the Main Steam Isolation Bypass Valves.

The Westinghouse Project Information Manual (PIP) Volume 10-1, Tab A, and the STPEGS Main Steam Bypass Valve data sheet states that the Main Steam Isolation Bypass Valve are required to close within 10 seconds. There is no documented evidence that the Main Steam Isolation Bypass valves are required to close in less than 10 seconds nor was there a specific requirement to evaluate the valves as part of the Main Steam Line Break (MSLB) analysis.

The NRC was notified of this event on December 16, 1992, at 1600 hours as a violation of the Plant Operating License.

CAUSE OF EVENT:

The cause of this event was the failure of the individuals developing the surveillance test procedures to recognize that time response testing of the Main Steam isolation required testing of the Isolation Bypass Valve. The Main Steam Isolation Bypass Valves were not included within the time response test nor the Main Steam Line Break analysis because the design documents indicate the valves are normally closed and that the valves were designed to meet a 10 second closure time.

During development of time response procedures, numerous design documents are used to ensure compliance with the Technical Specifications. Technical Specifications define the requirements for response time of Main Steam Line Isolation from a Compensated Steam Line Pressure-low signal and a Containment pressure High-2 signal. This requirement is vague in that it does not specifically include or exclude the Main Steam Isolation Bypass Valves.

ANALYSIS OF EVENT:

Failure to properly perform the testing of the time responses of the Main Steam Isolation Bypass Valves is reportable pursuant to 10CFR50.73(a)(2)(i)(b). Failure to include the closing time of the Main Steam Isolation Bypass valves is in violation of Technical Specification 4.3.2.2, Table 3.3-5, items 5.b and 7. The testing recently completed as a result of this event has shown that these valves will operate correctly.

CORRECTIVE ACTIONS

1. A preliminary Containment Pressure and Temperature Analysis was conducted using a conservative Main Steam Isolation Bypass Valve closure time of 20 seconds. Results indicated that Containment temperature would still remain below the Equipment Qualification (EQ) limits of the Updated Final Safety Analysis Report (UFSAR).

2. Adjustments of the Unit 1 Main Steam Isolation Bypass Valves have been completed to obtain less than or equal to a five second closure time.

CORRECTIVE ACTIONS (Con't)

3. The Unit 1 Main Steam Line Isolation and Response Time Test procedure was revised to include an acceptance criteria of less than or equal to five seconds for the Main Steam Isolation Bypass closure. Response Time Testing was then successfully completed on the Unit 1 Main Steam Isolation Bypass Valves. The Unit 2 Main Steam Line Isolation and Response Time Test procedure will be revised by February 15, 1993.

4. The Main Steam Valve Operability Test procedure will be revised to include an acceptance criteria of less than or equal to five seconds for the Main Steam Isolation Bypass closure. This procedure will be revised by February 15, 1993.

5. HL&P will revise the applicable portions of the UFSAR and the valve data sheets to require a less than or equal to five second valve closure time.

6. HL&P will perform a review of other ESF actuated components which are "normally closed" to determine if they provide unanalyzed conditions when they are open. Based upon the results of this review, corrective actions will be taken as deemed necessary. This review will be completed by February 28, 1993.

ADDITIONAL INFORMATION:

Previous events involving incomplete Technical Specification surveillance requirements due to inadequate procedures that were reported to the NRC within the last three years were:

- Unit 1 LER 90-003; Failure to perform a Technical Specification required surveillance due to a deficient procedure

- Unit 1 LER 92-004; Shunt trip contacts for manual reactor trip breakers not tested per Technical Specifications

ADDITIONAL INFORMATION: (Con't)

- Unit 1 LER 92-011; Reactor Coolant Pump undervoltage and underfrequency surveillance not performed completely per Technical Specifications
- Unit 1 LER 92-013; Containment Spray Channels not being completely verified as required per Technical Specifications
- Unit 1 LER 92-017; Feedwater Isolation response time not being correctly tested as required per Technical Specifications

The Surveillance Review Task Force effort which identified this LER condition is a corrective action from Licensee Event Report (LER) 92-004. An in-depth review of the ESFAS and reactor trip surveillance procedures for one train of one unit has been performed to ensure they adequately meet Technical Specification requirements. As a result of this review, the scope of the task force was revised to review the time response testing for the Reactor Protection System and ESFAS system using the same criteria as the completed review.