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

February 6, 1997
ST-HL-AE-5569
File No.: G02.04.02
10CFR2.201

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

South Texas Project
Units 1 and 2
Docket Nos. STN 50-498; STN 50-499
Response to Apparent Violations in Inspection Report 50-498/96-25; 50-499/96-25

The South Texas Project has reviewed the apparent violations identified in Special Inspection Report 50-498/96-25; 50-499/96-25, dated December 11, 1996, and submits the attached reply. The event described in the inspection report did not have an adverse effect on the health and safety of the public.

We recognize that this situation is a failure of the corrective action process and it does not meet our expectations. This situation occurred because we did not recognize the design basis significance of an identified issue. We have taken actions to address the deficiency.

South Texas Project is submitting this response to the apparent violations in lieu of attending an enforcement conference. As these issues are being considered for escalated enforcement, we offer the following comments relative to the factors that affect enforcement decisions.

No Level III or higher violations have been identified at South Texas Project for events in the last two years. We recognize that several old issues which resulted in escalated violations were recently resolved following lengthy Department of Labor deliberations; however, the events that led to these violations occurred more than two years ago.

South Texas Project took prompt and aggressive corrective actions once the significance of the issue was understood.

IE01

Project Manager on Behalf of the Participants in the South Texas Project

9625-1.WPW

South Texas Project has demonstrated by analysis that the C Train of Safety Injection was operable throughout the time frame in question (February through October, 1996). Although this analysis was performed after the condition was reported to NRC, we do not consider analysis of this nature to be extensive.

On January 23, 1997, South Texas Project rescinded our request for a Predecisional Enforcement Conference and agreed to provide this response by February 6, 1997 (ST-HL-AE-5558). If there are any questions regarding this, please contact Mr. S. M. Head at (512) 972-7136 or me at (512) 972-8787.

T. H. Cloninger
Vice President,
Nuclear Engineering

DBS/dbs

Attachments: (1) Affidavit
(2) Response to Apparent Violation Regarding Failure to Take Prompt Corrective Action
(3) Response to Apparent Violation Regarding Failure to Evaluate the Deficiency in Accordance with 10 CFR 50.59

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	)		
	)		
Houston Lighting & Power	)	Docket Nos.	50-498
Company, et al.,	)		50-499
	)		
South Texas Project	)		
Units 1 and 2	)		

AFFIDAVIT

I, T. H. Cloninger, being duly sworn, hereby depose and say that I am Vice President, Nuclear Engineering, of Houston Lighting & Power Company; that I am duly authorized to sign and file with the Nuclear Regulatory Commission the attached Response to Apparent Violations in Inspection Report 50-498/96-25; 50-499/96-25; that I am familiar with the content thereof; and that the matters set forth therein are true and correct to the best of my knowledge and belief.

T.H. Cloninger
Vice President,
Nuclear Engineering

STATE OF TEXAS)
)
COUNTY OF MATAGORDA)

Subscribed and sworn to before me, a Notary Public in and for the State of Texas, this 6th day of February, 1997.

Notary Public in and for the
State of Texas

Response to Apparent Violation Regarding Failure to Take Prompt Corrective Action

I. Statement of Apparent Violation

As described in NRC letter from J. E. Dyer to W. T. Cottle dated December 11, 1996, the failure to take timely action regarding the Safety Injection system leakage into the Fuel Handling Building sump represents an apparent violation of 10 CFR Part 50, Appendix B, Criterion XVI.

II. South Texas Project Position

The South Texas Project concurs that the noted violation occurred.

III. Reason for the Apparent Violation

The reason for this violation was unfamiliarity with the relative contributions of all potential source terms and release pathways (i.e., containment leakage, Safety Injection system leakage, Fuel Handling Building exhaust) assumed in the analysis of post design-basis loss of coolant accident control room doses.

On February 22, 1996, leakage was identified from the Unit 2 C Train of Safety Injection to the Fuel Handling Building sump. The leakage was believed to be coming from a suction relief valve on the high head safety injection pump. Further investigation, including samples taken to identify boron in the Fuel Handling Building sump, confirmed that the leakage path was from Safety Injection to the sump. An operability assessment determined that the observed conditions did not affect the ability of the Safety Injection system to perform its design function of cooling the core and removing decay heat. The potential for this condition to affect control room dose was not recognized. Since no operability concern was identified, the condition was processed as a material deficiency to be repaired in accordance with station procedures.

Work process planning determined that investigating the suspected leaking component would require draining the associated piping. The next scheduled window for a draining evolution was associated with a leak rate test scheduled in June 1997, however, the activity was moved up to July 1996. When the July date approached, because no other maintenance warranted draining the piping, the work was rescheduled for September, 1996. This decision was made to avoid unnecessarily lengthening the time spent in a Limiting Condition for Operation for what was understood to be a minor deficiency. In September the activity was again rescheduled for the same reason.

On September 24, 1996, after responding to relevant questions from the NRC resident inspector, it was recognized that the dose implications of this condition had not been addressed. Although analysis showed that the dose limits would not be exceeded for the apparent suction side leak, the decision was made to repair the valve. Disassembly of the relief valve piping resulted in the conclusion that it was not the source of the leakage. On October 4, 1996 it was determined that the leakage was coming from the high pressure side of the system. An initial, conservative, dose analysis concluded that the design basis margins would be exceeded and as a consequence, the train of Safety Injection was declared inoperable. The source of the leakage was determined to be a leaking flush valve (2-SI-0120C), which was repaired. The train was returned to operable status on October 6, 1996.

If the relationship between Safety Injection system leakage and control room dose had been recognized, two courses of action would have been available:

- the Safety Injection train could have been immediately declared inoperable and repaired, or,
- an operability review could have been requested. If the leakage had been such that the train remained operable, procedural requirements dictate performance of a formal evaluation pursuant to 10 CFR 50.59.

However, the unfamiliarity with the relative contributions of potential source terms and release pathways assumed in the post design-basis loss of coolant accident control room doses precluded appropriate disposition of the situation.

IV. Corrective Actions

1. The leaking flush valve has been repaired.

2. All other trains in both units were tested to confirm that no additional leakage sources were unidentified. No additional leakage in excess of design limits was found.

3. This situation has been included in operator requalification training.

4. Training has been provided to the Engineering staff to ensure that the relationship between Safety Injection system leakage and control room dose is understood. In addition, the training focused on careful assessment of any plant conditions that may impact design basis margins.

5. System engineers reviewed open material deficiency condition reports on their systems to identify if any other material deficiencies impacted compliance with the licensing basis. No other such deficiencies were determined to exist.

6. This situation will be included in initial operator training.

7. The Engineering staff conducted review meetings to identify other areas where sensitivity to the margin of design limits should be included in operator training. A list of identified areas will be considered for inclusion in the above training.

V. Date of Full Compliance

South Texas Project is in full compliance.

VI. Additional Information

Leak Rate Assumptions

South Texas Project evaluated this issue and on October 5, 1996, notified the NRC in accordance with 10 CFR 50.72 of a condition outside the design basis. A subsequent review, using a more precisely quantified flow rate through the leaking Safety Injection valve and conservatively derived actual containment leakage conditions for Unit 2 was performed. This review concluded that design basis limits for control room dose would not be exceeded and therefore the notification was retracted.

Although not directly cited in the violation, the inspection report did note some concern with the analysis assumptions used to determine that this issue was not reportable. Once the consequences of the issue were understood, South Texas Project performed an initial evaluation of this issue, assuming conservative estimates of Safety Injection system leakage rates in combination with worst case analytical assumptions for containment leakage rates. Under these assumed conditions, the hypothetical post loss of coolant accident dose to the control room was calculated to exceed the thyroid dose limit. On this basis, the conservative decision was made to report the condition in accordance with 10 CFR 50.72, recognizing that further analysis considering more accurate input might find the condition to be within the dose limits.

Subsequent analyses relied upon conservative estimates of Safety Injection system leakage rates in combination with conservative containment leakage rate measurements (most recent integrated leak rate measurements plus the largest local leak rate test total plus an additional conservatism of the worst single containment isolation valve leakage rate). This analysis conclusively demonstrated that had a design basis loss of coolant accident occurred, control room dose limits would not have been exceeded. While this Reactor Containment Building leakage rate was lower than that assumed in the design basis, it is

still considered to represent a conservative estimate of actual Reactor Containment Building leakage for the following reasons:

- The last integrated leak rate test performed for Unit 2 in 1991 was substantially below the design limit (0.0767 weight percent per day versus 0.3).

- Industry and South Texas Project experience indicates that the vast majority (95%) of the containment leakage comes from penetrations, i.e., the liner has little impact.

- Industry experience indicates that changes in containment leakage rate over time are the result of penetration leakage, not the liners.

- Penetration leakage, regularly measured at South Texas Project via local leak rate testing, has shown no unusual changes. The containment leakage rate is updated after each local leak rate test.

Based on the lower leakage rate, South Texas Project used guidance provided in NUREG 1022 regarding reportability evaluations. In accordance with this guidance it was concluded that during the time frame in question, the South Texas Project Unit 2 was never outside the design basis, i.e., in the event of an accident control room dose would not have exceeded design basis limits. As such, this issue was concluded to be not reportable.

We believe that this evaluation was consistent with current industry practice and NRC guidance in NUREG 1022.

Response to Apparent Violation Regarding
Failure to Evaluate the Deficiency in Accordance with 10 CFR 50.59

I. Statement of Apparent Violation

As described in NRC letter from J. E. Dyer to W. T. Cottle dated December 11, 1996, the failure to evaluate the deficiency to determine if it was appropriate to delay the repair of the leaking valve is viewed as a violation of 10 CFR 50.59.

II. South Texas Project Position

The South Texas Project concurs that a 10 CFR 50.59 evaluation was not performed and should have been if this Safety Injection train was to be left in service with this condition. However, this was a consequence of the original problem, i.e., that the significance of the leakage was not recognized. Once it had been determined that no operability issues existed, the work associated with the leak was placed into the scheduling mechanism to identify the most appropriate time to perform the repair. As a result, at no time did our program provide an opportunity to perform an analysis in accordance with 10 CFR 50.59 since the original problem led to a conclusion that there were no "...changes in the facility as described in the safety analysis report."

III. Reason for the Apparent Violation

The reason a 10 CFR 50.59 evaluation was not performed is the same as the cause for the apparent violation described in Attachment 2. Failure to recognize the significance and interrelationship between Safety Injection system leakage and control room dose led to an inappropriate conclusion regarding the actions to be taken.

IV. Corrective Actions

The corrective actions are outlined in Attachment 2. Additionally, South Texas Project is evaluating process enhancements to identify additional barriers to ensure that material deficiencies with design basis impact are identified and appropriately evaluated, including barriers based on deficiency age.

V. Date of Full Compliance

South Texas Project is in full compliance.