

APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-498/90-31
50-499/90-31

Operating Licenses: NPF-76
NPF-80

Dockets: 50-498
50-499

Licensee: Houston Lighting & Power Company (HL&P)
P.O. Box 1700
Houston, Texas 77251

Facility Name: South Texas Project (STP), Units 1 and 2

Inspection At: STP, Matagorda County, Texas

Inspection Conducted: September 12-21, 1990

Inspector: J. I. Tapia, Senior Resident Inspector, Project Section D
Division of Reactor Projects

Approved:

J. S. Wiebe

J. S. Wiebe, Chief, Project Section D
Division of Reactor Projects

9/26/90

Date

Inspection Summary

Inspection Conducted September 12-21, 1990 (Report 50-498/90-31; 50-499/90-31)

Areas Inspected: Special, announced inspection involving onsite followup of a Unit 1 event.

Results: Within the area inspected, one apparent violation was identified. The violation involved a failure to satisfy a Technical Specification requirement in Unit 1 for having three independent emergency core cooling system (ECCS) subsystems operable prior to exceeding 375°F in one or more of the reactor coolant system (RCS) cold legs.

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DETAILS

1. Persons Contacted

- *W. H. Kinsey, Vice President for Generation
- *M. R. Wisenburg, Plant Manager
- *J. Loesch, Operations Manager
- *M. A. McBurnett, Nuclear Licensing Manager
- K. Christian, Manager of Operations for Unit 1
- R. Neil, Shift Supervisor
- C. A. Ayala, Supervising Engineer, Licensing
- A. K. Khosla, Senior Engineer, Licensing

*Denotes those individuals attending the exit interview conducted on September 21, 1990.

2. Followup of Plant Event

A* approximately 8 a.m., on September 12, 1990, the Unit 1 control room operators determined that a violation of Technical Specification 3.5.2 had occurred. This Technical Specification requires that three independent ECCS subsystems be operable in Modes 1, 2, and 3. Each subsystem is comprised of, one high head safety injection (HHSI) pump, one low-head safety injection (LHSI) pump, one residual heat removal (RHR) heat exchanger and an operable flow path capable of taking suction from the refueling water storage tank on a safety injection signal and automatically transferring suction to the containment sump during the recirculation phase of operation.

While in Mode 4, Technical Specification 4.5.3.1.2 requires that a maximum of one HHSI pump be operable, that another HHSI pump be operable but with its motor circuit breaker racked out, and that the third HHSI pump have its motor circuit breaker also racked out. Technical Specification 3.5.2 does allow entry into Mode 3 with the HHSI pumps declared inoperable, pursuant to Technical Specification Surveillance Requirement 4.5.3.1.2, provided that the pumps are restored to operable status within 4 hours or prior to the temperature of one or more of the RCS cold legs exceeding 375°F, whichever comes first.

Control Room operators commenced a unit heatup in preparation for entering Mode 3 at approximately 7:10 a.m. on September 12, 1990. Mode 3 was achieved at 7:15 a.m. when RCS temperature reached 350°F. Subsequent to entering Mode 3, the unit supervisor released the equipment clearance orders for HHSI Pump 1A, Centrifugal Charging Pump 1A, and the positive displacement charging pump; and then directed a nonlicensed operator to restore that equipment in the field. The unit supervisor verified that the equipment had been restored to service at approximately 7:35 a.m., during a shift turnover board walkdown with the oncoming unit supervisor. At that time, he also noted that HHSI Pump 1B was still out of service with a caution tag attached to the pump hand switch in accordance with

Technical Specification 4.5.3.1.2. The unit supervisor directed a reactor operator to restore the pump as soon as possible and then continued with the board walkdown. The unit supervisor did not instruct the reactor operator to assure the restoration of the pump prior to reaching the Technical Specification limit of 375°F. The Plant Heatup Procedure being utilized by the unit supervisor to direct the plant heatup, IPOP03-ZG-0001, also states the temperature limit.

At approximately 8 a.m., the shift supervisor was walking down the control boards with the oncoming shift supervisor when he noted that HHSI Pump 1B was still out of service with the RCS temperature at 385°F. He then ordered the reactor operator to stop the plant heatup and directed a nonlicensed operator to get the pump restored to operable status by racking in the associated motor circuit breaker. The pump was restored at 8:07 a.m.

Subsequent review of the heatup log disclosed that the Technical Specification limit of 375°F was reached at 7:45 a.m. The pump was, therefore, inoperable in Mode 3 above 375°F for 22 minutes. This is an apparent violation of a Technical Specification Limiting Condition for Operation (498/9031-01).

This apparent violation stems from a less than adequate attention to detail which resulted in poor command and control on the part of the unit supervisor. This included, but was not limited to, the failure to communicate the Technical Specification temperature limit and allowing the RCS heatup to continue while conducting a shift turnover. There have been several recent events which appear to be the result of personnel error and inattention to detail. Most notably; the reactor trip in Unit 1 on July 2, 1990, from the less than adequate attention to the decreasing margin to the overtemperature/delta temperature trip setpoint during power ascension; the July 19, 1990, Notice of Unusual Event in Unit 1 when a reactor operator inadvertently opened the unit auxiliary transformer to the Auxiliary Bus 1H supply breaker instead of opening the Unit 1 standby transformer to the Standby Bus 1H supply breaker; the July 30, 1990, discovery in Unit 1 of a flow path valving error in the auxiliary feedwater system lineup which prevented auxiliary feedwater from entering Steam Generator 1A subsequent to a reactor trip; the May 15, 1990, inadvertent engineered safety features actuation due to incorrect connection of test equipment in Unit 2; and, the September 17, 1990, Unit 2 reactor trip which resulted from the opening of the wrong reactor trip breaker during a surveillance test. These recent events indicated a potential declining trend in safety performance at STP, Unit 1, and were of concern to NRC.

3. Exit Interview

The inspector met with licensee representatives (denoted in paragraph 1) on September 21, 1990. The inspector summarized the scope and proposed findings of the inspection. The licensee did not identify as proprietary any of the information provided to, or reviewed by, the inspector.