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

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

South Texas Project
Unit 1
Docket No. STN 50-498
Special Report Regarding an Evaluation of
the Unit 1 Isolation Valve Cubicle
High Temperature Condition on June 30, 1992

Pursuant to the South Texas Project Electric Generating Station Technical Specifications 3.7.13.b, Houston Lighting & Power submits the attached Special Report regarding an evaluation of the Unit 1 Isolation Valve Cubicle high temperature condition on June 30, 1992.

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.

William J. Jump
General Manager,
Nuclear Licensing

JMP/ag

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L4/NRC/

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I. DESCRIPTION OF EVENT:

On June 30, 1992, Unit 1 was in Mode 1 at 100 percent power. At approximately 0838 hours, Control Room annunciator lamp 22M01 window F-1, "ISOLATION VALVE CUBICLE TEMPERATURE HIGH", alarmed. Using the Emergency Response Facility Data Acquisition Display System (ERFDADS) computer, it was determined that the Train D cubicle temperature had caused the alarm. Local temperature readings in the cubicle were 95°F.

A temporary log was initiated to monitor the Isolation Valve Cubicle (IVC) Train D cubicle temperature at the 10' Elevation. At approximately 1530 hours on June 30, 1992, the temperature exceeded 101°F by local temperature probe reading. A Limited Condition for Operation (LCO) 3.7.13 was entered. At 2030 hours, the cubicle temperature was recorded at 103.9°F. The LCO was exited at approximately 2340 hours on June 30, 1992, when the "ISOLATION VALVE CUBICLE TEMPERATURE HIGH" annunciator cleared, and local temperature was verified to be less than 101°F. The total time in which the temperature in the IVC exceeded 101°F, was eight hours and ten minutes.

Technical Specification 3.7.13, Area Temperature Monitoring, requires the IVC temperature at the 10' Elevation to be less than or equal to 101°F. If the IVC temperature exceeds 101°F for more than 8 hours, LCO 3.7.13 Action b states that a Special Report be prepared and submitted to the NRC within 30 days, pursuant to Technical Specification 6.9.2. The Special Report shall provide a record of the cumulative time and the amount by which the temperature in the affected area(s) exceeded the limit and an analysis to demonstrate the continued operability of the affected equipment.

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II. INVESTIGATION:

The area temperature in the IVC is maintained by the IVC Ventilation and Heating System. This system consists of four independent trains (A, B, C, and D). Each train serves the corresponding Auxiliary Feedwater (AFW) pump cubicle located at 10' Elevation and the associated Main Steam Isolation Valve (MSIV) cubicle located above 34' Elevation. Each IVC ventilation train consists of one 100% capacity vane-axial supply fan and discharge duct for distribution. Each fan supplies outside air to the associated pump and valve cubicles. Discharge air is exhausted to the outside from a relief opening near the top of each valve cubicle. The fans are located on the roof of the IVC inside the missile walls. In addition, there are a total of three electric unit heaters per train; one in the AFW pump cubicle and two in the MSIV cubicle.

Each of the four Isolation Valve Cubicles contains a valve cubicle and a pump cubicle. The valve cubicle contains the main steam safety valves associated with each steam generator, the main steam isolation valves, the atmospheric steam relief valves and the main feedwater isolation valves. The pump cubicle contains the three motor driven AFW pumps and the steam turbine driven (Train D) Auxiliary Feedwater pump and their associated equipment.

Based on the operator temporary logsheet, Train D pump cubicle maximum temperature was 103.9°F. The impact on qualified life of the motor-driven and turbine-driven AFW pumps and their associated safety-related equipment would be minimal. The safety-related equipment in the IVC has been environmentally qualified to 104°F or higher.

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II. INVESTIGATION: (Con't)

Since higher area temperatures are normally expected to occur during the summer months, Engineering performed a conservative evaluation to assess the impact of higher area temperature on the qualified life of safety-related equipment. The evaluation assumed an area temperature of 110°F and an exposure period of eight hours a day for the four summer months. The results of the evaluation indicated that the impact on the qualified life of safety-related equipment in the IVC is minimal. Therefore, the effects of the temperatures up to 110°F on qualified life or operability for a span of eight hours and ten minutes would be insignificant. In addition, since critical safety-related equipment in the valve cubicles are periodically tested per Technical Specification requirements, any signs of degradation could be detected in advance

An investigation into the root cause of this event is currently ongoing. The investigation is being documented under Station Problem Report 920290 and will be available for review on site, once the investigation has been completed.