PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE PNO-IV-95-059

This preliminary notification constitutes EARLY notice of events of POSSIBLE safety or public interest significance. The information is as initially received without verification or evaluation, and is basically all that is known by Region IV staff in Arlington, Texas on this date.

Facility
Houston Lighting & Power Co.
South Texas 1
Wadsworth, Texas
Dockets: 50-498

Licensee Emergency Classification
Notification of Unusual Event
Alert
Site Area Emergency
General Emergency
X Not Applicable

Subject: PLANT TRIP AND PARTIAL LOSS OF OFFSITE POWER

On December 18, 1995, at approximately 3:36 a.m. (CST), with Unit 1 at 100 percent power, a Pilot Wire Monitoring Relay actuation caused a main transformer lock out which resulted in a turbine trip and reactor trip. This caused loss of the unit auxiliary transformer which is one of three sources of offsite power. This resulted in a loss of all nonessential electrical buses and the Train A engineered safety features bus. Standby Diesel Generator (SDG) 11 started and loaded on its associated safety bus as required. All auxiliary feedwater pumps started to supply water to the steam generators as expected. Operators manually started SDGs 12 and 13, but they were not required because engineered safety features electrical Buses E1B and E1C never lost power. With the loss of the unit auxiliary transformer, all the reactor coolant pumps (RCPs) were lost. There is no fast transfer of loads on a loss of the unit auxiliary transformer at South Texas Project. The unit was in natural circulation for approximately 1 hour and 30 minutes when the operators restored power and started RCPs A and D. Immediately following the trip, a pressurizer PORV lifted 3 times to control pressure. Once the operators regained control of pressure through the use of auxiliary pressurizer spray, the PORV closed with no indication of leakage. At 6:10 a.m., a shutdown margin verification was performed and the boron concentration was found to be adequate.

The cause of the trip was identified as a fault on an offsite power line caused by severe weather in the area. A grounded connection on Phase A of the main transformer backup current transformer for the differential relay previously existed because of personnel error during the previous refueling outage. This caused a condition in which the current transformer continued to sense a differential after the offsite line fault was cleared from the grid, which ensured the relay actuation described above.

In response to the reactor trip, one of the main steam isolation valves (MSIVs) did not indicate fully closed when the operators manually closed the MSIVs. Upon further investigation, the licensee concluded that there was no actual valve closure problem and that it was a limit switch problem that required only a minor adjustment.

Also, during verification that control rods fully inserted following the trip it was noted that three control rods did not have rod bottom lights lit; the digital

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rod position indicating lights were indicating position of six steps withdrawn for all three of the control rods. One of the rods drifted in to the fully inserted rod bottom position, and the remaining two rods were later manually inserted.

The licensee tested all the control rods within the banks that contained the control rods that appeared to have not been fully inserted and found a total of four control rods that would not fully insert. The four rods of concern were all stopping at the six-step area (last 4 inches) which is part of the lower dashpot area of the fuel assembly guide tubes. All four fuel assemblies of concern were in their second cycle of use and were high burn up assemblies. With the control rods at the step 6 position, shutdown margin was adequate. There were no noted differences in rod drop times prior to reaching the upper dashpot area. The licensee and Westinghouse (the fuel supplier) are still evaluating the information.

Region IV and Headquarters personnel held a conference call with the licensee on December 20, 1995, to discuss the control rod insertion problem, information reporting concerns, and operator response/actions to the station emergency operating procedures. Upon completion of the conference call, the licensee had plans to resume startup activities.

The resident inspectors attended shift turnover briefings and observation of plant startup training to confirm that the licensee had incorporated lessons learned pertaining to operator response concerns and that management expectations were known by all of the on-shift operators for both Units 1 and 2. Further activities include a review of licensee supplied information by both Region IV and Headquarters personnel, and a special inspection of the circumstances surrounding the rod insertion problem will be performed.

The reactor was made critical at 5:48 a.m. on December 21, 1995, and the licensee expects breaker closure to occur at 7 p.m.

The state of Texas has been informed.

Region IV received notification of this occurrence by telephone from the resident inspectors at 7 a.m. on December 18, 1995. Region IV has informed the EDO, NRR, and PA.

This information herein has been discussed with the licensee and is current as of 2 p.m. CST on December 21, 1995.

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