ABNORMAL OCCURRENCE REPORT

Report No.: BFAO-50-260/7431W
Report Date: December 13, 1974
Occurrence Date: December 3, 1974
Facility: Browns Ferry Nuclear Plant unit 2

Identification of Occurrence

HPCI auto-isolation.

Conditions Prior to Occurrence

A relief valve, manually actuated following unit trip from 745 MWe, was experiencing excessive blowdown and reactor pressure was decreasing. High level indications were present on the HPCI gland seal condenser and turbine exhaust drain pot while repairs were in progress on the HPCI gland seal condensate pump motor.

Description of Occurrence

Approximately 30 minutes after the unit trip, HPCI automatically initiated due to low reactor water level. The turbine came up to speed and flow and then auto-isolated. The isolation was immediately reset and the turbine manually initiated. HPCI performed satisfactorily until shut down manually. The visible annunciation was immediately reset, and any alarm that would indicate the cause of isolation cleared at that time. One operator, however, did report observing an excessive steamflow alarm.

Designation of Apparent Cause of Occurrence

At this time the definite cause of the HPCI auto-isolation has not been determined.

Analysis of Occurrence

Following the auto-isolation, HPCI was manually initiated and performed satisfactorily to restore vessel inventory. If HPCI had failed to start, safe shutdown of the reactor would have been accomplished with the remaining engineered safeguard systems. The failure caused no damage to any systems, structures, or components. There were no adverse effects to the health and safety of the public, and there were no personnel injuries or exposures due to this occurrence.

Corrective Action

Extensive effort has been exerted to determine the exact cause of the HPCI isolation. Each area that will cause an auto-isolation has been investigated. The time delay in the excessive steamflow logic was verified and found to be satisfactory. The calibration and operation of the PdIS switches for excessive steamflow were verified and found to be satisfactory. Calibration of the

Corrective Action (continued)

pressure switches indicating a ruptured turbine exhaust diaphragm was verified satisfactory and the diaphragms were not ruptured. The alarm for the steamline space temperature high did not alarm. This alarm setpoint is lower than that required for an isolation and has to be reset at another panel before the annunciator can be cleared. It is believed that the high level in both the gland seal condenser and the turbine exhaust drain pot was an indication of water in the turbine exhaust line. As a result, a surge in the steamline as the exhaust line blew free probably initiated the isolation by high steamflow signal. This condition did not exist during the manual start of HPCI immediately following the auto-isolation. The motor for the gland seal condensate pump has been repaired and returned to service.

Failure Data

Previous auto-isolations for units 1 and 2 were reported in Abnormal Occurrence Reports BFAO-7338W, BFAO-7414W, BFAO-7435W, and BFAO-50-260/744W.

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA TENNESSEE 37401

December 13, 1974

Mr. Edson G. Case
Acting Director of Licensing
Office of Regulation
U.S. Atomic Energy Commission
Washington, DC 20545

Dear Mr. Case:

TENNESSEE VALLEY AUTHORITY - BROWNS FERRY NUCLEAR PLANT UNIT 2 - DOCKET NO. 50-260 - FACILITY OPERATING LICENSE DPR-52 - ABNORMAL OCCURRENCE REPORT BFAO-50-260/7431W

The enclosed report is to provide details concerning HPCI auto-isolation and is submitted in accordance with Appendix A to Regulatory Guide 1.16, Revision 1, October 1973. This event occurred on Browns Ferry Nuclear Plant unit 2 on December 3, 1974.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

for E. F. Thomas
Director of Power Production

Enclosure
CC (Enclosure):
Mr. Norman C. Moseley, Director
Region II Regulatory Operations Office, USAEC
230 Peachtree Street, NW., Suite 818
Atlanta, Georgia 30303

12660

COPY SENT REGION II