

TENNESSEE VALLEY AUTHORITY  
CHATTANOOGA, TENNESSEE  
37401

ANNIVERSARY  
OF PEOPLE IN  
PARTNERSHIP

June 5, 1974

Mr. John F. O'Leary, Director  
Directorate of Licensing  
Office of Regulation  
U.S. Atomic Energy Commission  
Washington, DC 20545

Dear Mr. O'Leary:

TENNESSEE VALLEY AUTHORITY - BROWNS FERRY NUCLEAR PLANT UNIT 1 -  
DOCKET NO. 50-259 - FACILITY OPERATING LICENSE DPR-33 - ABNORMAL  
OCCURRENCE REPORT BFAO-7435W

The enclosed report is to provide details concerning HPCI 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 1 on May 26, 1974.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*E. F. Thomas*

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

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## ABNORMAL OCCURRENCE REPORT

Report No.: BFAO-7435W  
Report Date: June 5, 1974  
Occurrence Date: May 26, 1974  
Facility: Browns Ferry Nuclear Plant unit 1

### Identification of Occurrence

HPCI isolation.

### Conditions Prior to Occurrence

The reactor was at 37-percent power starting up to resume startup tests at the 100-percent power plateau.

### Description of Occurrence

During the performance of routine surveillance testing, HPCI isolated on high steamflow. Following this isolation, the HPCI inboard containment isolation valve, FCV 73-2, could not be reopened. The unit was brought to the cold shutdown condition and drywell entry was made to repair the valve.

### Designation of Apparent Cause of Occurrence

The exact cause of the failure of valve FCV 73-2 is undetermined. The valve itself was found to operate freely without binding. The valve motor operator was badly burned and one gear tooth was found broken in the gear mechanism.

An extensive testing program has been conducted to determine the cause of the high steamflow isolation. It has been found that this phenomenon occurs on a HPCI start with a relatively cool turbine. The isolation condition apparently is not repeatable when the HPCI is operated daily, but has been repeated when the HPCI was idle for 68 hours between operations.

### Analysis of Occurrence

HPCI failure in itself presented no danger to safe reactor operation since other engineered safeguard systems were available at this time. The failure of FCV 73-2 to open made it necessary to bring the reactor to a cold shutdown condition for repairs.

### Corrective Action

The valve operator and motor were replaced and the valve returned to service after functional testing. HPCI was satisfactorily tested on auxiliary boiler steam and with reactor steam at 150 psig and at rated pressure. Increasing the d/P trip point high enough to prevent spurious isolation during HPCI startup transients has been rejected as a remedy of the HPCI isolation on startup. To do so would result in loss of adequate protection for the pipe break accident. Until a solution is approved, operability of the HPCI will be ensured by daily operation.