

TENNESSEE VALLEY AUTHORITY  
CHATTANOOGA, TENNESSEE  
37401



September 6, 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 REPORTS BFAO-50-260/747W AND BFAO-50-260/741CW

Please refer to my letter to Mr. John F. O'Leary dated August 23, 1974,  
on this subject.

The enclosed report is to provide details concerning valves FCV 1-52  
and FCV 1-27 which failed to open when manually actuated and is  
submitted in accordance with Appendix A to Regulatory Guide 1.16,  
Revision 1, October 1973. These events occurred on Browns Ferry  
Nuclear Plant unit 2 on August 14 and August 21, 1974, respectively.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

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.: Final Report for BFAO-50-260/747W and BFAO-50-260/7410W  
Report Date: September 6, 1974  
Occurrence Date: August 14 and August 21, 1974, respectively  
Facility: Browns Ferry Nuclear Plant unit 2

### Identification of Occurrence

On August 14 and 21, 1974, unit 2 valves FCV 1-52 and FCV 1-27 failed to open when manually actuated. These valves are the outboard containment isolation valves in steamlines "D" and "B," respectively.

### Conditions Prior to Occurrence

The reactor was in a shutdown condition with reactor pressure at approximately 100 psig when FCV 1-52 failed and still in shutdown condition, but at atmospheric pressure, when FCV 1-27 failed.

### Designation of Apparent Cause of Occurrence

Investigation revealed that the poppets of both valves had become wedged in the valve bodies. This wedging was apparently initiated by foreign particles becoming trapped between the bearing surfaces of the poppets, and valve bodies causing metal deformation. A small amount of abrasive material was found in steamline "B."

### Analysis of Occurrence

The reactor was in a shutdown condition at the time and all other MSIV's were operational. There was no unsafe condition since these valves failed in the shut position, and there were no adverse effects on the health and safety of the public as a result of these failures.

### Corrective Action

The valves' operator and cover were removed leaving the valve stem and poppet assembly in the valve body. Jacks were used to remove the poppets from the valve body. The bearing surfaces of the poppets and valves bodies were galled on the top side and bottom side, 180° apart.

The outside diameter of the poppets bearing surfaces and inside diameter of the valve bodies were measured and the clearances appeared to be slightly less than current manufacturer tolerances of 0.025" to 0.040" on the diameter.

The poppets were put in a lathe and metal removed to repair bearing surfaces and bring clearances to within specified tolerances. The valve bores were also hand-honed where they had been scored. The valves were reassembled and all MSIV's were flushed for 1 hour by blowing steam to the condenser through one line at a time at approximately 5-percent reactor power.

Corrective Action (continued)

The valves were satisfactorily leak tested and closing time adjusted after reassembly. Until 50-percent power is reached, increased surveillance testing for all unit 2 MSIV's will be implemented. The valves will be operated weekly and stroke time checked to monitor any changes.

Failure Data

No previous failures of this nature have been experienced with these valves.

Valve Data

26-inch Main Steam Isolation Valve

Manufacturer: Atwood and Morrill Company, Salem, Massachusetts

Valve Drawing No.: 20851-H, Sheets 1 and 2