

May 30, 1974



ANNIVERSARY  
OF JUNE 1942  
PART 1

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

50-259

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 BPAO-7434W

The enclosed report is to provide details concerning motor failure  
of HPCI pump discharge valve PCV 73-44 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 21, 1974.

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.: BFAO-7434W  
Report Date: May 30, 1974  
Occurrence Date: May 21, 1974  
Facility: Browns Ferry Nuclear Plant unit 1

### Identification of Occurrence

Motor failure of HPCI pump discharge valve FCV 73-44.

### Conditions Prior to Occurrence

The unit was in the cold shutdown condition.

### Description of Occurrence

During investigation of a ground on the 250V dc system, HPCI pump discharge valve FCV 73-44 was discovered inoperable. The motor had apparently been damaged during a previous operation of the valve. The motor was replaced and the valve returned to service.

### Designation of Apparent Cause of Occurrence

The commutator was shorted and badly burned. The brush holders were burned and one was grounded. The brake shoes were charred and blistered indicating that the brake had engaged with the motor running. The holding coil of the brake solenoid was open. This caused a continuous engaging and disengaging of the brake while the motor was running. This action caused the anti-hipot capacitors to fail in the brake solenoid circuit and caused excessive chattering of the brushes on the commutator which resulted in severe arcing and finally motor failure.

### Analysis of Occurrence

Failure of the motor-operated pump discharge valve renders the HPCI inoperable. The unit was in the cold shutdown condition at the time of discovery and HPCI was not required. Failure during operation would have prevented vessel injection. All other redundant engineered safeguard systems were available.

### Corrective Action

The motor was replaced and the valve tested and returned to service.

### Failure Data

The brake was manufactured by Stearns as described below.

Brake, Stearns, Model No. 1-087-055, 250V dc, torque 50 lbs/ft, Horiz.  
Mfg. Serial No. B-615243.

The coil for the brake solenoid is Stearns catalog No. 63-623001. The motor was manufactured by Peerless Electric for Limitorque valve, type SMB-4T, order No. 329945D, and serial No. 81836A. The motor nameplate is given below.

Motor, Peerless Electric, Frame DL25N 250V dc, 1,900 rpm, Duty: 5 min., 14.44 hp, 40° C. amb., 51 amp, 75° C. rise, insulation class B, compound winding, GW90995, 200 lbs/ft, D2700.

The anti-hipot capacitor was manufactured by Cornell Dubilier, catalog No. PKM5P47, 0.47 MFD, and 600V dc.