

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)  
Browns Ferry - Unit 2DOCKET NUMBER (2)  
0 5 0 0 0 2 6 0 1 OF 0 2TITLE (4)  
Excessive Drift of Pressure Switches

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)																	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)																
1	0	1	8	5	8	5	0	1	6	0	0	1	2	0	6	8	5	Browns Ferry - Unit 3	0	5	0	0	0	2	9	6
																			0	5	0	0	0			

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)																	
POWER LEVEL (10) 0.010	N	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)														
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)														
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vi)	X OTHER (Specify in Abstract below and in Text, NRC Form 366A)														
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	For Information														
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)															
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)															

LICENSEE CONTACT FOR THIS LER (12)  
NAME  
D. L. Smith, Compliance EngineerTELEPHONE NUMBER  
AREA CODE  
2 0 5 7 2 9 - 3 8 6 5

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)									
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRRDS
B	B <sub>1</sub> J	PS	A 6 1 0	Y					

SUPPLEMENTAL REPORT EXPECTED (14)  
YES (If yes, complete EXPECTED SUBMISSION DATE) ☐ NO ☒ X  
EXPECTED SUBMISSION DATE (15)  
MONTH DAY YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

In June 1985 while bench testing four Automatic Switch Company (ASCO) pressure switches, prior to installation in unit 2, excessive setpoint drift was discovered. Identical switches, previously installed on unit 3, were also tested and exhibited similar behavior. The unit 2 switches were subsequently tested at the manufacturer's facility which confirmed setpoint drift characteristics toward lower pressure setpoints. The unit 2 switches were disassembled at the factory, and it was determined that an internal cylinder/piston support was inadvertently omitted during the original manufacturing process. All of these switches will be repaired by the manufacturer and bench tested prior to installation.

These switches are used in the high pressure coolant injection (HPCI) system's turbine exhaust to detect rupture disc integrity and to limit steam release to the HPCI pump room in case of disc rupture. This condition would tend to lessen the steam release in the case of disc rupture and provide a more sensitive indication of the upstream rupture disc integrity, therefore, reliable operations of the HPCI system was not degraded.

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## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
Browns Ferry - Unit 2	05000260815	-	016	-	0002	OF 02

TEXT (If more space is required, use additional NRC Form 366A's) (17)

Units 1 and 2 were in refueling outages, and unit 3 was in an extended maintenance outage. This condition affected switches installed on unit 3.

On June 6, 1985, prior to installation of four pressure switches (PS) on unit 2, excessive setpoint drift was discovered during bench testing. These switches are manufactured by the Automatic Switch Company (ASCO) and are used to detect pressure increase between two rupture discs (RPD) located on the high pressure coolant injection (HPCI) (EJ) turbine (TRB) exhaust line. Approximately eight months prior to this time, identical ASCO switches had been installed on unit 3. Following the problem discovery, these unit 3 switches were retested and found to exhibit a similar drift phenomenon.

On July 22, 1985, factory testing by ASCO on the unit 2 switches confirmed the TVA test data. The switch problem was characterized as a setpoint drift toward lower value by approximately 12 percent. Subsequently, the unit 2 switches were disassembled at the factory. ASCO found that the cylinder/piston support was inadvertently omitted during the original assembly process.

These pressure switches are set to actuate at approximately 10 psig increasing and are located in the HPCI turbine exhaust between two rupture discs. The switches initiate an isolation signal to the HPCI turbine to limit steam release to the HPCI pump room for the rupture disc failures. In addition, they also act to detect excessive leakage (rupture disc integrity) past the inboard rupture disc. These rupture discs provide backup overpressure protection (175+ 10 psi) for the HPCI turbine exhaust casing and line. The primary overpressure protection is provided by two independent switches (set at approximately 150 psi) in the exhaust line which initiate a HPCI turbine trip.

As discussed above, all of the tested switches exhibit a downward drift in setpoint. This would have initiated a HPCI auto isolation slightly sooner in the event of leakage or rupture of its inner rupture disc. The maximum drift was relatively small and not likely to cause inadvertent isolation of the HPCI system. These switches are not included in the Browns Ferry Technical Specifications but we note the allowable bandwidth in the Standard Technical Specifications is relatively broad (10 psig span). It is our opinion that the reliable operation of HPCI, including protective features, was not degraded.

Four of the switches have been returned to the factory for repair, and the other eight are scheduled to be returned (total of 12 switches, 4 for each unit). All of these switches will be bench tested prior to installation or reinstallation in the case of unit 3.

The manufacturer determined this switch problem to be isolated to our order for a total of 12 units (ASCO Nuclear Tri-Point Pressure Switch, Model No. SB21AMR/TE20A32R) with serial number series 33774P. The manufacturer is ASCO, Florham Park, New Jersey. ASCO notified the NRC of this problem on October 30, 1985.

Responsible Plant Section - N/A

Previous Events - None

TENNESSEE VALLEY AUTHORITY  
Browns Ferry Nuclear Plant  
P.O. Box 2000  
Decatur, Alabama 35602

December 6, 1985

U.S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, D. C. 20555

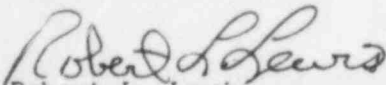
Dear Sir:

TENNESSEE VALLEY AUTHORITY - BROWNS FERRY NUCLEAR PLANT (BFN) UNIT 2 -  
DOCKET NO. 50-260 - FACILITY OPERATING LICENSE DPR-52 - REPORTABLE  
OCCURRENCE REPORT BFR0-50-260/85016

The enclosed report provides details concerning excessive drift of  
pressure switches. This report is submitted for information only.

Very truly yours,

TENNESSEE VALLEY AUTHORITY



Robert L. Lewis  
Acting Plant Manager  
Browns Ferry Nuclear Plant

Enclosures

cc (Enclosures):

Regional Administrator  
U.S. Nuclear Regulatory Commission  
Office of Inspection and Enforcement  
Region II  
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Atlanta, Georgia 30303

INPO Records Center  
Suite 1500  
1100 Circle 75 Parkway  
Atlanta, Georgia 30339

NRC Resident Inspector, BFN

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