

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Browns Ferry - Unit 1 DOCKET NUMBER (2) 050000259 1 OF 03

TITLE (4) Inoperable Pressure Switches

EVENT DATE (8)			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)
01	03	84	84	002	00	01	24	84			050000
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §. (Check one or more of the following) (11)											

OPERATING MODE (9) N	20.402(b)	20.406(c)	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10) 01318	20.401(a)(1)(i)	50.38(a)(1)	X 50.73(a)(2)(v)	73.71(c)
	20.401(a)(1)(ii)	50.38(a)(2)	X 50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 365A)
	20.406(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
	20.406(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
	20.406(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME Kieron M. Morkin TELEPHONE NUMBER 205 729-1078

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS
X	JEP	S1	S1382						

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)  NO  X

EXPECTED SUBMISSION DATE (15)

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

During unit startup, routine surveillance testing showed that the setpoints for pressure switches PS-64-57A through D were not within limits of Technical Specification 3.2.B (<= 2.50 psi). The as-found values were 2.54 psi for PS-64-51A through C, and 2.52 psi for PS-64-51D. These switches, in conjunction with low reactor water level, high drywell pressure, a 120-second delay time, and an RHR core spray pump running, initiate the Automatic Depressurization System (ADS). The ADS activates in the event of a loss-of-coolant accident to depressurize the reactor vessel and allow LPCI and core spray to inject water into the vessel to protect the core.

The setpoints for the Static-O-Ring Model 12N-AA4 pressure switches had drifted. These switches are apparently vulnerable to setpoint drift due to a setpoint repeatability problem that occurs under certain conditions following extended unit outages. As recurrence control, the surveillance test will be revised to have these switches cycled through their normal operating range prior to setpoint adjustment.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)  Browns Ferry - Unit 1	DOCKET NUMBER (2)  0 5 0 0 0 2 5 9 8 4	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 4	0 0 2	0 0	0 2	OF 0 3	

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

Unit 1 was in startup at 38 percent power following a refueling outage; unit 2 was at 99 percent power; and unit 3 was in a refueling outage. Only unit 1 was affected by this event.

On January 3, 1984 at 1200, while performing routine surveillance testing, the setpoint values for pressure switches (PS) PS-64-57A through D were found to be above the limits of Technical Specification 3.2.B ( $\leq 2.5$  psi). The as-found setpoint values were 2.54 psi for PS-64-57A through C and 2.52 psi for PS-64-57D. These switches are part of the Automatic Depressurization System (ADS) activation logic (JE) and in conjunction with low reactor water level, high drywell pressure, a 120-second delay time, and a residual heat removal (BO) or core spray (BM) pump (P) running, initiate the ADS. As such, they are part of an Engineered Safety Feature (ESF). No redundant switches were available.

The event required no operator corrective action. The switches were calibrated by instrument maintenance personnel and returned to service by 1240. A 4-hour red telephone notification was made to the NRC per the requirements of 10 CFR 50.72(B)(2)(III)(A) and (D).

Investigation showed that the setpoints for the Static-O-Ring Model 12N-AA4 pressure switches had drifted. Available calibration data for these switches was reviewed and the problem was discussed with the manufacturer. These switches are apparently vulnerable to setpoint drift whenever they are overpressurized after being in a depressurized condition for an extended period (such as during refueling). The overpressurization (which occurs during special leak rate testing during the refueling outage) apparently adversely affects setpoint repeatability which can in turn result in setpoint drift. Cycling the pressure switch through its normal operating range several times helps ensure the setpoint will return to its original position (repeatability) and reduces the potential for drift. Currently, the as-found readings for these switches are taken after the switch/system has been depressurized for several months, followed by setpoint adjustment. The setpoint adjustment, however, is performed prior to cycling the switch through its operating range. Thus, when the switch is over-pressurized during the special testing following refueling, the setpoint is subject to drift out of of Technical Specification limits. The surveillance test will be revised to require that, during the first few months following a refueling or any other extended outage, the switches are cycled through their normal operating range several times before final adjustment of the setpoint. This will ensure maximum repeatability and reduce the potential for drift.

The as-found setpoints were above Technical Specification limits by a maximum of only 1.6 percent and presented no hazard to plant operations or safety system functions. The setpoints were above limits by such a small margin that, had there been a design basis accident, ADS would have actuated in time to fully protect the core. The ADS includes automatically controlled relief valves (RV) installed on the main steam line inside primary containment.

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		8   4	-   0   0   2	-   0   0	0   3	OF	0   3

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

Depressurization by automatic action is intended to reduce nuclear system pressure during a loss-of-coolant accident in which the high pressure coolant injection system (BI) or reactor core isolation cooling system (BN) fail to maintain sufficient vessel (RPV) water level, so that the relatively low pressure core spray and RHR system can inject water into the vessel and protect the core. The control room is provided with a two-position switch for the control of relief valves, which allows the operator to take action independent of the automatic system; thus, even if the PS-64-57A through D switches had failed completely and a loss-of-coolant accident had occurred, system depressurization and protection of the core could still have been safely accomplished.

Previous Similiar Events

BFRO-50-260/83016

Responsible Plant Section

N/A

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

Browns Ferry Nuclear Plant

P. O. Box 2000

Decatur, Alabama 35602

January 24, 1984

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

Dear Sir:

TENNESSEE VALLEY AUTHORITY - BROWNS FERRY NUCLEAR PLANT UNIT 1 - DOCKET  
NO.50-259 - FACILITY OPERATING LICENSE DPR-33 - REPORTABLE OCCURRENCE  
REPORT BFRO-50-259/84002

The enclosed report provides details concerning setpoint drift of drywell  
high pressure switches. This report is submitted in accordance with 10 CFR  
50.73 (a)(2)(v) and (a)(2)(vii).

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*G. T. Jones*

G. T. Jones  
Power Plant Superintendent  
Browns Ferry Nuclear Plant

Enclosure

cc (Enclosure):  
Regional Administrator  
U. S. Nuclear Regulatory Commission  
Office of Inspection and Enforcement  
Region II  
101 Marietta Street, Suite 2900  
Atlanta, GA 30303

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