NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Browns Ferry Unit 2	0 5 0 0 0 2 6 0	1 OF 0 2

TITLE (4)

Breaker Failure Initiating Engineering Safety Features

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)
									Browns Ferry Unit 1	0 5 0 0 0 2 5 9
0 9	1 8	8 6	8 6	0 1 2	0 0	1 0	1 7	8 6	Browns Ferry Unit 3	0 5 0 0 0 2 9 6

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
N		20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)	0 0 0	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)(vii)	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)	
		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	TELEPHONE NUMBER
	AREA CODE
Stephen B. Jones, PORS Engineer	2 0 5 7 2 9 - 3 7 8 8

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

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

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

On September 18, 1986, the unit 2 480-V shutdown board (ED) 2B was inadvertently deenergized when the alternate power supply breaker (BKR) failed to close during an attempt to transfer the board power supply to the alternate source. This subsequently tripped the reactor protection system (RPS) (JC) MG set 2B causing a half-scram, primary containment isolation group (PCIS) (JM) 2, 3, 6, and 8 isolations, initiated standby gas treatment, and initiated control room emergency ventilation. The operator reenergized the 480-V shutdown board by closing the normal power supply breaker.

The cause of the failure was a loose internal wire in the breaker compartment. The breaker was returned to service after the internal wiring was secured and operability test completed. No further corrective actions are required since a comprehensive preventative maintenance program on 4160VAC, 480VAC, 240VAC, and 250VDC plant breakers is in place.

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Browns Ferry Unit 2	0 5 0 0 0 2 6 0	8 6	— 0 1 2	— 0 0	0 2 OF 0 2

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

Units 1 and 3 were in extended maintenance outages. Unit 2 was in a refueling outage. These events affected all three units.

On September 18, 1986 at approximately 0830, the unit 2 480-V shutdown board 2B (ED) was inadvertently deenergized when an operator attempted to transfer the power supply to the board from the normal supply to the alternate supply, and the alternate power supply breaker (BKR) failed to close. The loss of power to the shutdown board caused the 2B reactor protection system (RPS) (JC) motor-generator (MG) set to trip, which initiated a half-scram, primary containment isolation of groups 2, 3, 6, and 8, initiated trains A, B, and C of standby gas treatment (SBGT) (BH), and initiated trains A and B of the control room emergency ventilation (CREV) system (VI). The operator reenergized the 2B 480-V shutdown board by closing the normal supply breaker when he realized the alternate supply breaker had not closed. The half-scram and PCIS isolations were reset, and SBGT and CREV were secured by 0910.

The cause of the alternate breaker failure to close was a loose internal wire in the breaker compartment. The breaker was returned to service on September 18, 1986 at 1500, after the internal wire was secured and operability tests were satisfactorily performed.

Presently, there is a procedure which covers the maintenance of 4160VAC, 480VAC, 240VAC, and 250VDC breakers and requires a scheduled preventive maintenance inspection of these breakers. The breaker in question was inspected according to this procedure on May 14, 1985. Breaker maintenance has been emphasized within the last year by incorporating vendor recommendations into the maintenance procedure, making the maintenance procedure user friendly, adding all breakers to the preventative maintenance program, and by dedicating a crew to breaker maintenance. Since this failure is considered a random failure and a preventative maintenance program is already in force, no further corrective action is required.

This failure did not affect this safety of the plant as all systems worked as required and placed the plant in a conservative configuration. If this had occurred during operation, essential equipment affected by the loss of the 2B shutdown board could have been repowered by manually switching the appropriate reactor MOV board to the alternate power supply. In addition to this, the plant could be safely shutdown using redundant systems unaffected by the temporary loss of the shutdown board.

Previous Similar Events - BFRO 50-260/85013, 85007

Responsible Section - N/A

TENNESSEE VALLEY AUTHORITY

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

October 17, 1986

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

Dear Sir:

TENNESSEE VALLEY AUTHORITY - BROWNS FERRY NUCLEAR PLANT UNIT 2 - DOCKET NO. 50-260 - FACILITY OPERATING LICENSE DPR-52 - REPORTABLE OCCURRENCE REPORT BFRO-50-260/86012

The enclosed report provides details concerning the breaker failure initiating engineering safety features. This report is submitted in accordance to 10 CFR 50.73 (a)(2)(iv).

Very truly yours,

TENNESSEE VALLEY AUTHORITY

Robert L. Lewis
Plant Manager
Browns Ferry Nuclear Plant

Enclosures
cc (Enclosures):
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U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region II
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Atlanta, Georgia 30303

INPO Records Center
Suite 1500
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Atlanta, Georgia 30339

NRC Resident Inspector, Browns Ferry Nuclear Plant

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