U.S. NUCLEAR REGULATORY COMMISSION APPROVED OMB NO. 3150-0104 LICENSEE EVENT REPORT (LER) EXPIRES 8/31/86								
FACILITY NAME (1)					OCKET NUMBER	1 (2)	PAGE (3)	
Browns Ferry Unit	2				0   5   0   0	0 2 6 0	1 OF 0 1 3	
Unplanned Diesel (		ue To Insul	ating Boo	ot Falling	Off Log	ic Relay (	Contact	
ATM EVENT DATE (5)	LER NUMBER (6)	REPORT DATE	(7)	OTHER	FACILITIES INVO	NEVED (8)		
MONTH DAY YEAR YEAR	SEQUENTIAL REVISION NUMBER NUMBER	MONTH DAY	YEAR	FACILITY NAN	ies.	DOCKET NUMBER	<b>A</b> ( <b>\$</b> )	
			Brown	n <u>s Ferry U</u>	nit 3	0 15 0 0	0 2 19 1 6	
0 5 1 0 8 8 8 8		0 6 0 7 8	8 8			0 15 10 10	10111	
OPERATING	EPORT IS SUBMITTED PURSUANT	1	TS OF 10 CFR §		if the following) I	73.71(b)		
N 10	0.402(b)	20.405(c) 50.36(c)(1)	X	50.73(a)(2)(v) 50.73(a)(2)(v)		73.71(c)		
LEVEL	405(a)(1)(0)	50.36(c)(2)		50.73(a)(21(vii)		OTHER ISP	ecity in Abstract	
	0.406(a1(1)Gil)	50.73(a+(2)(i)		50 73(a)(2)(viii)(A	6. C	below and in 365.4.1	- Text NRC Form	
20	0.406(a)(1)(iv)	50 73(a)(2)(ii)		50.73(a)(2)(viii)(8	0	같아. 이것은 것		
20	0.406(s)(1)(v)	50.73(e)(2)(m)		\$0.73(a)(2)(x)		1.1.1.1.1.1.1.1	<u> </u>	
		LICENSEE CONTACT F	OR THIS LER (12)			TELEPHONE NUM	910	
NAME					AREA CODE	TELEPHONE NUM	8 E H	
Stophon C. Willow	d Engineer Dier	+ Operation	Poutou	Staff		7 12 191-	12 15 13 1 6	
Stephen C. Willard	COMPLETE ONE LINE FO	I AND AND A REAL PROPERTY AND A	And in case of the second s	static property and the second state of a second state of the	and the second se	11 12 191-	1+ 121210	
CAUSE SYSTEM COMPONENT	MANUFAC REPORTABLE TURER TO NPROS	T	CAUSE SYSTEM	1	MANUFAC TURER	REPORTABLE TO NPROS		
		1			1.1.1	1		
	SUPPLEMENTAL REPOR	T EXPECTED (14)			EXPECT SUBMISS		DAY YEAH	
YES III yes, complete EXPECTED	D SUBMISSION DATE	X NO			DATE	181	1 1 1 1	
ABSTRACT /Limit to 1400 speces 1.4	approximately fifteen single space by	sewritten lines/ (16)				A - A -	d d d d	
diesel Esnerat signal was gen spray system w The test was s investigated. shutdown the d Boots are ligh loosely over t	38, at 1923 hours tor started due t herated during a when a rubber ins stopped while the The operators v liesel at 2003 ho htweight flexible the contact arms s movement allowe	o an inadve logic funct ulating boo cause of t erified the urs and res electrical and are all	rtent sta ional tes t fell of he diesel start si umed the insulati owed rand	irt signal t of the f of a re start wa gnal was test. Ing materia	. The s unit 2 c lay cont s being not vali al and f nt durin	tart ore act arm. d, it g relay		
<ul> <li>testing includ calibration of to fall off wa contact arm.</li> <li>This is the fi years they hav Approximately performance of</li> </ul>	ere conducted wit ded different boo f the relay. The as gross misplace trst identified p ve been used at B 1500 of these bo these boots to er method is dete	t length an only test ment of the roblem with rowns Ferry ots have be be acceptab	d placeme condition boot at these bo Nuclear en used. le and wi	ont on the which al the very oots durin Plant (BF BFN cons 11 contin	contact lowed th top of t g the th N). iders th ue to us	arm and e boot he ree e them		

BE06160220 880609 PDR ADOCK 05000260

48

# LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104 EXPIRES 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6) PAGE .3)
		YEAR SEQUENTIAL REVISION NUMBER NUMBER
Browns Ferry Unit 2	0 15 10 10 10 12 16 10	0 818 _ 01011 _ 010 012 OF 01

### DESCRIPTION OF EVENT

RC Form 366.4

Browns Ferry Nuclear Plant (BFN) units 1, 2, and 3 were defueled during this event. The unit 2 core spray system (EIIS Code BM), and the unit 3 diesel generator (DG) 3A (EIIS Code EK) were affected.

On May 10, 1988, at 1923 hours, the 3A DG started due to an inadvertent start signal. The start signal was generated during a logic functional test of the unit 2 core spray system when a rubber insulating boot fell off of a relay contact arm. The test was run to verify proper operation of relay logic in response to a simulated accident signal. The relay involved was a GE HFA relay. The logic was reset and the DG was shutdown at 2003 hours.

#### CAUSE OF EVENT

Boots are lightweight flexible electrical insulating material and fit loosely over the contact arms and are allowed random movement during relay cycling. This movement allowed the boot to work its way off the contact arm.

## CORRECTIVE ACTION

The test was stopped while the cause of the DG start was being investigated. The operators verified the start signal was not valid, shutdown the DG at 2003 hours and resumed the test.

Experiments were conducted with identical relays and boot material. The testing included different boot length and placement on the contact arm and calibration of the relay. The only test condition which allowed the boot to fall cff was gross misplacement of the boot at the very top of the contact arm.

This is the first identified problem with these boots during the three years they have been used at BFN. Approximately 1500 of these boots have been used. BFN considers the performance of these boots to be acceptable and will continue to use them unless a better method is determined. The maintenance organization is considering other methods as possible improvements.

#### ANALYSIS OF EVENT

The logic involved is designed to provide a preemptive start of the DG during accident conditions protecting against a concurrent loss of offsite power. The DGs are designed to provide a self-contained, highly reliable source of power for the core standby cooling functions and their auxiliaries. In this case, the systems responded correctly, placing the plant in a conservative

19-831 LICENSEE EV	ICENSEE EVENT REPORT (LER) TEXT CONTINUATION					NUCLEAR REGULATORY COMMISSIO APPROVED OMB NO. 3150-0104 EXPIRES. 8/31/85				
FACILITY NAME (1)	DOCKET NUMBER (2)	T	LER NUMBER (6)					PAGE (3)		
		YEAR		NUMBER	REV	MBER		T	_	
Browns Ferry Unit 2	0 15 10 10 10 12 1 610	8	-	0 0 1	_ 0	010	0 30	FO	13	

configuration. This test is not run while the unit is at power; however, the start of a DG during power operation is not adverse to nuclear safety.

This event lasted 40 minutes.

PREVIOUS SIMILAR EVENTS - None

COMMITMENTS - None

## TENNESSEE VALLEY AUTHORITY Browns Ferry Nuclear Plant Post Office Box 2000 Decatur, Alabama 35602 JUN 0.9 1988

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 BFR0-50-260/88001

The enclosed report provides details concerning the unplanned diesel generator start due to insulating boot falling off logic relay contact arm. This report is submitted in accordance with 10 CFR 50.73 (a)(2)(iv).

Very truly yours,

TENNESLEE VALLEY AUTHORITY

J./G. Walker Plant Manager Browns Ferry Nuclear Plant

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

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

NRC Resident Inspector, Browns Ferry Nuclear Plant