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Joseph R. Bynum
Vice President, Nuclear Operations

January 31, 1991

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

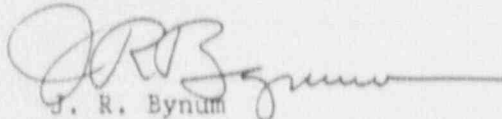
Dear Sir:

TVA - BROWNS FERRY NUCLEAR PLANT (BFN) UNIT 1 - DOCKET NO. 50-259 -
FACILITY OPERATING LICENSE DPR-33 - REPORTABLE OCCURRENCE REPORT
BFRO-50-259/90020, R1

The enclosed supplemental report provides details concerning an unplanned engineered safety feature actuation which occurred during the performance of a relay time delay test. The root cause of this event was procedure inadequacy and personnel error. This report is submitted in accordance with 10 CFR 50.73(a)(2)(iv).

Very truly yours,

TENNESSEE VALLEY AUTHORITY


J. R. Bynum

Enclosure
cc: see page 2

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U.S. Nuclear Regulatory Commission
January 31, 1991

cc (Enclosure):

INPO Records Center
Suite 1500
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NRC Resident Inspector, BFN

Regional Administration
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region II
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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Browns Ferry Unit 1 DOCKET NUMBER (2) PAGE (3)
015010101 21 51 9110F 01 3

TITLE (4) Engineered Safety Feature Actuation During Relay Testing Caused by Procedure Inadequacy and Personnel Error

EVENT DAY (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)			
MONTH	DAY	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES			DOCKET NUMBER (2)	
11	21	49	09	00	02	00	00	10	13	19	11	015010101

OPERATING MODE (9) THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following)(11)

<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> OTHER (Specify in
<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	Abstract below and in
<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	Text, NRC Form 366A)
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Clare S. Hsieh, Compliance Licensing Engineer	210 572 9120 46

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS

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

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

On December 14, 1990 at 0400 hours, 480V shutdown board 1B was deenergized when the normal feeder breaker to the board was tripped during a time delay relay test. The deenergization of the shutdown board in turn deenergized reactor protection system bus 1B and the Primary Containment Isolation System logic relays powered by the bus, resulting in the isolation of group 2 valves. The completion of group 2 isolation logic is considered a plant engineered safety feature.

This event occurred when test equipment (synchronous timer) was placed across the shutdown board's breaker control transfer switch. This caused the normally closed feeder breaker to trip.

The root cause of this event is procedure inadequacy and personnel error. The time delay relay testing procedure did not provide any direction on a proper DC power source to be used for the synchronous timer. Maintenance personnel involved in the test did not apply a sufficient degree of attention in thoroughly determining the identification of the DC source.

Electrical maintenance personnel will review this licensee event report. Personnel corrective action in accordance with TVA policy has been given to the individuals involved in this event. The applicable electrical maintenance procedure will be revised to require a portable DC supply for time delay relay setpoint checks.

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 1	0500025990	0	2	0	0	1	02 OF 03

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

DESCRIPTION OF EVENT

On December 14, 1990 at 0400 hours, unit 1 480V shutdown board 1B [ED] was deenergized when the normal feeder breaker to the board was tripped during a time delay relay test. The deenergization of this shutdown board in turn deenergized Reactor Protection System (RPS) [JC] bus 1B and the Primary Containment Isolation System (PCIS) [JM] logic relays powered by the bus, resulting in the isolation of group 2 valves (drywell floor and equipment drains discharge valves). The completion of group 2 isolation logic is considered a plant engineered safety feature (ESF). PCIS group 3, 6 and 8 isolations did not occur since the system logic has been removed from service. Additionally, the control room emergency ventilation system [VI] and the standby gas treatment system [BH] did not start since they were secured to prevent autostart. All other actions from a loss of the 480V shutdown board and RPS bus 1B were received as expected.

During performance of a time delay relay setpoint check for the fuel pool cooling pump 1B motor, the power source for the synchronous timer used to test the relay was obtained from 480V shutdown board 1B. The leads of the timer were attached to the terminals across the shutdown board's breaker control transfer switch. The normal feeder breaker for the 480V shutdown board 1B tripped when the timer was energized.

Operations personnel were notified immediately after the event and transferred the shutdown board from its normal power supply (480V transformer TS1B) to its alternate supply (480V transformer TS1E) and restored the loads that had been deenergized to operation.

All three units were shutdown and defueled at the time of this event. No fuel handling or operations over spent fuel were in progress during this event.

ANALYSIS OF EVENT

The 480V shutdown board 1B performed as expected, and the affected equipment which are designed to contain any radioactive releases responded correctly in fulfilling their safety functions upon loss of initiation logic power. There were no failures of plant systems or components, and plant safety was not adversely affected. The plant's safe shutdown capabilities would not have been diminished had the unit been in power operation.

This event resulted in an unplanned actuation of the ESF. Accordingly, TVA considers it reportable in accordance with 10 CFR 50.73(a)(2)(iv).

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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Browns Ferry Unit 1	0500025990	0	2	0	0	1	0	3 OF 03

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

CAUSE OF EVENT

The root cause of this event is procedure inadequacy and personnel error. The electrical maintenance procedure used in testing the time delay relay did not provide any direction on a proper DC power source to be used for the synchronous timer. Maintenance personnel involved in the test did not apply a sufficient degree of attention in thoroughly determining the identification of this power source. Moreover, before using 480V shutdown board 1B as the power source for the timer, maintenance personnel should have verified whether this would affect the control logic of the shutdown board.

CORRECTIVE ACTIONS

Personnel corrective action in accordance with TVA policy has been given to the individuals involved in this event by the plant management. Electrical maintenance personnel will review this licensee event report.

Additionally, portable DC power supplies are being procured, and applicable electrical maintenance procedures that involve DC power sources will be revised to require a portable DC power supply for time delay relay setpoint checks.

PREVIOUS SIMILAR EVENTS

Several previous events involving deenergization of 480V shutdown boards have occurred. However, none of the deenergizations were due to improper utilization of the 480V shutdown boards as power source for testing equipment.

COMMITMENTS

Applicable electrical maintenance procedures will be revised to require a portable DC power supply for time delay setpoint checks, and the portable supply will be procured by May 31, 1991.

Electrical maintenance personnel will review the licensee event report. This review will be completed by February 28, 1991.

Note: EIIIS Codes are identified in the text as [XX].