

TENNESSEE VALLEY AUTHORITY

Browns Ferry Nuclear Plant  
Post Office Box 2000  
Decatur, Alabama 35609-2000  
February 21, 1990

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

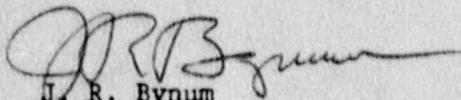
Dear Sir:

TVA - BROWNS FERRY NUCLEAR PLANT (BFN) UNIT 1 - DOCKET NO. 50-259 - FACILITY  
OPERATING LICENSE DPR-33 - REPORTABLE OCCURRENCE REPORT BFRO-50-259/90002

The enclosed report provides details concerning the failure of an alternate  
power supply to close during a manual transfer of power supplies for  
the 480 volt shutdown board which resulted in engineered safety feature  
actuators. This report is submitted in accordance with  
10 CFR 50.73(a)(2)(iv).

Very truly yours,

TENNESSEE VALLEY AUTHORITY



J. R. Bynum  
Vice President  
Nuclear Power Production

Enclosure

cc (Enclosure):

Regional Administration  
U.S. Nuclear Regulatory Commission  
Office of Inspection and Enforcement  
Region II  
101 Marietta Street, Suite 2900  
Atlanta, Georgia 30323

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

NRC Resident Inspector, BFN

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PDR ADOCK 05000259  
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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) BROWNS FERRY UNIT 1 DOCKET NUMBER (2) 050002591003 PAGE (3) 3

TITLE (4) ENGINEERED SAFETY FEATURES ACTUATIONS DURING SHUTDOWN BOARD TRANSFER DUE TO INADEQUATE PROCEDURE

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 (5)							
0	1	2	4	9	0	9	0	0	0	2	2	1	9	0	BROWNS FERRY UNIT 3	050002591003

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

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

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
<u>Jeffrey R. Baxter, Compliance Licensing Engineer</u>	<u>205729-2670</u>

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)

YES (If yes, complete EXPECTED SUBMISSION DATE)  NO  DATE (15)

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

On January 24, 1990, at 1157, unit 1 reactor protection system bus 1A was deenergized resulting in the completion of the actuation logic for the standby gas treatment system, control room emergency ventilation system, and primary containment isolations. While performing a manual transfer of power supplies for the 480 volt shutdown board during a diesel generator test, the alternate power supply failed to close. This failure to close resulted in a deenergization of RPS bus 1A. Following the actuations it was determined that the alternate supply breaker was not fully racked in although the indicator was in the connected position.

The root cause of this event is the failure of the general operating instruction to adequately reflect the guidance provided in the vendor's maintenance and installation manual for racking in the breakers. The general operating instruction used to rack in the breaker requires the cranking handle be rotated clockwise until the indicator window shows CONN. The vendor's maintenance and installation manual for the switchgear states the breaker is in the connected position when the cranking handle can no longer be rotated.

The general operating instruction will be revised to incorporate the guidance given in the maintenance and installation manual for racking in the breakers. Operations personnel will review a description of this event.

At the time of this event, all three units were defueled and no fuel handling or operations over spent fuel were in progress.

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	0	2	0	0	0	2	0	3

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

DESCRIPTION OF EVENT

On January 24, 1990, at 1157, unit 1 reactor protection system (RPS) [JC] bus 1A was deenergized resulting in the completion of the actuation logic for several plant engineered safety features (ESF). ESFs affected by this event include standby gas treatment system [BH], control room emergency ventilation system [VI], and primary containment isolations [JM]. The affected components were verified to have actuated/isolated as required.

While performing a manual transfer of power supplies for the 480 volt shutdown board during a diesel generator test, the alternate power supply breaker failed to close. This failure to close resulted in a deenergization of RPS bus 1A. Prior to the transfer, the alternate supply breaker was racked to the test position, functionally tested, and then racked in to what was believed to be the connect position. The transfer was attempted using the local control switches at the 480 volt shutdown board. The normal supply breaker opened, as expected, but the alternate supply breaker did not close.

When the alternate breaker failed to close, the normal supply breaker was manually reclosed approximately eight seconds after it was opened. To determine whether the alternate supply breaker was racked in, an attempt was made to rack it in further using the cranking handle. The cranking handle turned approximately one full turn, fully racking the breaker in. The 480 volt shutdown board 1A was then successfully transferred from normal to alternate supply and the affected actuations/isolations were reset.

At the time of this event, all three units were defueled. No fuel handling or operations over spent fuel were in progress during this event. The unplanned actuations of the ESF systems are reportable in accordance with 10 CFR 50.73 (a)(2)(iv).

ANALYSIS OF EVENT

The systems affected during this event are designed to shut down the reactor, contain and process any radioactive releases, and to fulfill their safety functions upon loss of initiating logic power. The systems responded correctly to the loss of power; therefore, plant safety was not adversely affected. The plant's safe shutdown capabilities would not have been diminished had the unit been in power operation.

CAUSE OF EVENT

The root cause of this event is the failure of the general operating instruction to adequately reflect the guidance provided in the vendor's maintenance and installation manual for racking in the breakers. The breaker compartment uses a tape on a roller which displays TEST and CONN in a window below the cranking shaft to indicate test position and connect position, respectively. The general operating instruction which provides direction for racking in breakers

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BROWNS FERRY UNIT 1	0500025990	--	002	00	03	OF	03

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

to 480 volt shutdown boards requires the cranking handle be rotated clockwise until the breaker is in the fully connected position as indicated by CONN visible in the window below the cranking shaft. A comparison of the tape indication for units 1, 2, and 3 for the normal shutdown boards shows a data scatter of approximately one-half inch in the alignment of this tape indicator. The vendor maintenance and installation manual for the switchgear used in the 480 volt shutdown boards states the breaker is in the connected position when the cranking handle can no longer be rotated and the indicator should read CONN. No adjustments or calibrations of the compartment position indicating tapes are possible.

CORRECTIVE ACTIONS

Operations personnel have reviewed the Shift Operations Supervisor's critique of this event.

The general operating instruction for racking in the breakers will be revised to incorporate the guidance given in the maintenance and installation manual, i.e., rotate the cranking handle clockwise until it can no longer be rotated and the position indicating tape should read CONN.

Appropriate operations personnel will review a description of this event to emphasize the importance of ensuring breakers are fully racked in prior to attempting a board transfer.

PREVIOUS SIMILAR EVENTS

259/87012	260/85007	296/88005
259/88045	260/86012	
	260/88009	

The above LERs document ESF actuations which occurred when a breaker failed to close during a shutdown board power supply transfer; however, none were a result of the failure to fully engage the breaker during racking in the breaker.

COMMITMENTS

1. The general operating instruction will be revised to incorporate the guidance given in the maintenance and installation manual for racking in the breakers. The revision will be issued by April 30, 1990.
2. Appropriate operations personnel will review a description of this event by May 25, 1990.

NOTE: EIIS Codes are identified in the text as [XX].