



Tennessee Valley Authority, Post Office Box 2000, Decatur, Alabama 35609-2000

R. D. (Rick) Machon
Vice President, Browns Ferry Nuclear Plant

November 13, 1995

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

10 CFR 50.73

Dear Sir:

**BROWNS FERRY NUCLEAR PLANT (BFN) - UNITS 1, 2, AND 3 - DOCKET
NOS. 50-259, 50-260, AND 50-296 - FACILITY OPERATING LICENSE
DPR-33, 52, AND 68 - LICENSEE EVENT REPORT (LER) 50-296/95005**

The enclosed LER provides details concerning an event where the residual heat removal inboard injection valve was inadvertently closed during performance of a troubleshooting work order. This report is submitted in accordance with 10 CFR 50.73(a)(2)(iv) as an event or condition that resulted in automatic actuation of an engineered safety feature.

Sincerely,

R. D. Machon

Enclosure

cc: See page 2

200084

9511200131 951113
PDR ADOCK 05000296
S PDR

JE221

U.S. Nuclear Regulatory Commission

Page 2

November 13, 1995

cc (Enclosure):

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

Paul Krippner
American Nuclear Insurers
Town Center, Suite 300S
29 South Main Street
West Hartford, Connecticut 06107

NRC Resident Inspector
Browns Ferry Nuclear Plant
10833 Shaw Road
Athens, Alabama 35611

Regional Administrator
U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Mr. J. F. Williams, Project Manager
U.S. Nuclear Regulatory Commission
One White Flint, North
11555 Rockville Pike
Rockville, Maryland 20852

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Browns Ferry Nuclear Plant Unit 3	DOCKET NUMBER (2) 05000296	PAGE (3) 1 OF 5
---	--------------------------------------	---------------------------

TITLE (4) A Residual Heat Removal injection valve was inadvertently closed as a result of personnel error during performance of a troubleshooting work order

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 NAME NA	DOCKET NUMBER
10	13	95	95	005	00	11	13	95	FACILITY NAME NA	DOCKET NUMBER

OPERATING MODE (9) N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more) (11)									
POWER LEVEL (10) 0	<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						
	<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)	(Specify in Abstract below and in Text, NRC Form 366a)						
	<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)							
<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 Clare S. Hsieh, Compliance Licensing Engineer	TELEPHONE NUMBER (Include Area Code) (205) 729-2635

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
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE).	<input checked="" type="checkbox"/> NO						

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)
 On October 13, 1995 at 1905 hours, during Unit 3 Reactor Protection System Channel B troubleshooting, a Primary Containment Isolation System group II isolation of shutdown cooling occurred when the Unit 3 Residual Heat Removal Division II inboard injection valve inadvertently closed. RHR pump 3B was manually tripped to protect the pump. The root cause of this event was personnel error. The troubleshooting plan did not address current plant conditions and did not receive the reviews and approvals required by plant procedures. Personnel involved were briefed and counselled. This event is reportable in accordance with 10 CFR 50.73 (a)(2)(iv) as an event or condition that resulted in automatic actuation of an Engineered Safety Feature.

LICENSEE EVENT REPORT
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Browns Ferry Unit 3	05000296	95	005	00	2 of 5

TEXT (if more space is required, use additional copies of MRC Form 366A) (17)

I. PLANT CONDITIONS

Unit 3 was shutdown and defueled, with the fuel pool gates removed in preparation for fuel load. Unit 3 shutdown cooling (SDC) was in operation using Residual Heat Removal (RHR) [BN] loop II. Unit 2 was at approximately 100 percent power. Unit 1 was shutdown and defueled.

II. DESCRIPTION OF EVENT

A. Event:

On October 13, 1995 at 1905 hours Central Daylight Time (CDT), during troubleshooting of Unit 3 Reactor Protection System (RPS) [JC] Channel B, a Primary Containment Isolation System (PCIS) [JM] [JE] group II isolation of SDC occurred when the Unit 3 loop II RHR Low Pressure Coolant Injection (LPCI) [BO] inboard injection valve [INV] (3-FCV-74-67) inadvertently closed. At the time of this event, a half scram was being performed on RPS Bus 3B to troubleshoot the RPS timing circuit. RPS Bus 3B was deenergized by tripping RPS Motor-Generator Set 3B.

Following closure of the injection valve, a Unit Operator (UO) (utility, licensed) tripped the 3B RHR Pump to protect the pump. The affected systems were verified to respond to the group II isolation as designed. At 1936 hours, operators (utility, licensed and nonlicensed) reenergized RPS Bus 3B, reset the isolation signal, reopened 3-FCV-74-67, restarted the 3B RHR pump, and returned other systems to normal status.

The event is reportable in accordance with 10 CFR 50.73 (a)(2)(iv) as an event or condition that resulted in automatic actuation of an Engineered Safety Feature.

B. Inoperable Structures, Components, or Systems that Contributed to the Event:

None.

C. Dates and Approximate Times of Major Occurrences:

October 13, 1995 at 1733 CDT Troubleshooting began on RPS timing circuit.

October 13, 1995 at 1905 CDT RPS 3B half scram initiation resulted in the closure of 3-FCV-74-67.

LICENSEE EVENT REPORT
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Browns Ferry Unit 3	05000296	95	005	00	3 of 5

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

October 13, 1995 at 1936 CDT Troubleshooting completed and RPS bus 3B reenergized, 3-PCV-74-67 re-opened, RHR pump 3B restarted, and other systems returned to normal.

October 13, 1995 at 2111 CDT A four-hour nonemergency notification made to NRC in accordance with 10 CFR 50.72 (b)(2)(ii).

D. Other Systems or Secondary Functions Affected:

None.

E. Method of Discovery:

This condition was discovered when the UO received indications in the control room that the injection valve had closed.

F. Operator Actions:

After receiving the unexpected RHR PCIS isolation and observing the auto closure of the RHR LPCI inboard injection valve, the UO tripped the 3B RHR pump at the direction of the Assistant Shift Operation Supervisor (ASOS) [utility, licensed].

G. Safety System Responses:

Safety systems responded as designed for this type of event.

III. CAUSE OF THE EVENT

A. Immediate Cause:

The RHR LPCI inboard injection valve auto closure was the result of RPS 3B half scram initiation during RPS timing circuit troubleshooting. The half scram was initiated by tripping Motor-Generator Set 3B to deenergize RPS Bus 3B. This resulted in closure of the inboard valve.

B. Root Cause:

The root cause of this event was personnel error for failure to perform self-checking. Modifications Field Engineers [nonutility, nonlicensed] developed a troubleshooting plan using

LICENSEE EVENT REPORT
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Browns Ferry Unit 3	05000296	95	005	00	4 of 5

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

steps from a previous test, but failed to verify the applicability of the steps to the current plant conditions. These individuals failed to ensure the troubleshooting plan received the proper reviews and approvals required by plant procedures.

C. Contributing Factors:

None.

IV. ANALYSIS OF THE EVENT

At the time of this event, Unit 3 SDC was operating using RHR loop II. The inboard injection valve was opened for recirculation flow through loop II RHR SDC return path.

The PCIS isolations from the RPS 3B half scram were received as expected, and plant safety was not compromised during the event. Additionally, this event did not result in any adverse condition that could have affected the health and safety of plant personnel or the public.

V. CORRECTIVE ACTIONS

A. Immediate Corrective Actions:

The troubleshooting activity was immediately stopped. Observing that 3-PCV-74-67 had auto closed and responding to the "SDC Low Flow" alarm in the control room, the ASOS directed the UO in the main control room to trip the 3B RHR pump to prevent dead heading the pump. Using Operating Instruction (OI) 3-OI-74, "Residual Heat Removal System," operators restored SDC to normal operations.

B. Corrective Actions to Prevent Recurrence:

Field Engineers were briefed on the event and those involved were counselled on the need to follow plant procedures when developing troubleshooting plans.

VI. ADDITIONAL INFORMATION

A. Failed Components:

None.

LICENSEE EVENT REPORT
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Browns Ferry Unit 3	05000296	95	005	00	5 of 5

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

B. Previous LERs on Similar Events:

There were three previous SDC isolation events. Two were caused by electrical component failure (LERs 259/84012 and 259/85037). One was caused by failure to follow an approved procedure because a jumper was used between two relay contacts instead of a boot (LER 260/94012). Corrective actions taken in these LERs would not have precluded this event.

VII. COMMITMENTS

None.

Energy Industry Identification System (EIIS) system and component codes are identified in the text with brackets (e.g., [XX]).