



Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402

Joseph R. Bynum
Vice President, Nuclear Operations

APR 25 1991

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

Dear Sir:

TVA - BROWNS FERRY NUCLEAR PLANT (BFN) UNIT 2 - DOCKET NO. 50-260 -
FACILITY OPERATING LICENSE DPR-52 - REPORTABLE OCCURRENCE REPORT
BFRO-50-260/91004

The enclosed report provides details concerning Unit 2 Reactor Protection System actuation from source range monitor spiking during the performance of time domain reflectometer trace on an intermediate range monitor. 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

APR 25 1991

cc (Enclosure):

INPO Records Center
Suite 1500
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Atlanta, Georgia 30339

NRC Resident Inspector, BFN

Regional Administration
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region II
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Atlanta, Georgia 30323

Thierry M. Ross
U.S. Nuclear Regulatory Commission
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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)

Browns Ferry Unit 2

DOCKET NUMBER (2) | PAGE (3)

050002 | 6 | 01 | 00 | 3

TITLE (4) Reactor Protection System Actuation as a Result of Exceeding the Hi-Hi SRM Channel Setpoint During Testing.

EVENT DAY (5)			LER NUMBER (6)		REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
			SEQUENTIAL	REVISION				FACILITY NAMES	
MONTH	DAY	YEAR	NUMBER	NUMBER	MONTH	DAY	YEAR	DOCKET NUMBER(S)	
0	3	6	9	1	0	0	4	0	5
0	3	6	9	1	0	0	4	0	5

OPERATING MODE (9) THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5:

(Check one or more of the following)(11)

POWER LEVEL (10)	0	0	0	20.402(b)	20.405(c)	x	50.73(a)(2)(iv)	73.71(b)
				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
				20.405(a)(1)(iii)	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)	Abstract below and in
				20.405(a)(1)(iv)	50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)	Text, NRC Form 366A)
				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
Clare S. Hsieh, Compliance Licensing Engineer	2 0 5 7 2 9 - 2 6 3 5

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC
				N					

SUPPLEMENTAL REPORT EXPECTED (14)

EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
x YES (If yes, complete EXPECTED SUBMISSION DATE) NO	0	6	1 4 9 1

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

On March 26, 1991, at 2024 hours, Unit 2 Reactor Protection System actuation occurred when the count rate on the source range monitor (SRM) channel C spiked while a time domain reflectometer (TDR) trace was being performed on the Unit 2 intermediate range monitor (IRM) channel C detector cable shield.

TDR trace was being performed on IRM channel C to determine the location of a ground fault in the IRM detector cable shield. During the performance of the TDR trace, SRM channel C spiked causing a full scram.

The root cause of this event has not been determined at this time. The scram was caused by an unexpected hi-hi trip in the SRC cable during the performance of TDR tracing on a nearby IRM cable. This interaction between channels has not been observed before.

The ground fault in the IRM channel C detector cable shield was removed. A special team will perform a detailed evaluation of the entire neutron monitoring system prior to Unit 2 restart. TVA will report the results in a supplement to this Licensee Event Report.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	NUMBER	REVISION	
		NUMBER	NUMBER	NUMBER	
Browns Ferry Unit 2	0500026091	004	000	02	OF 03

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

DESCRIPTION OF EVENT

On March 26, 1991, at 2024 hours, Unit 2 Reactor Protection System (RPS) [JC] actuation occurred when the count rate on source range monitor (SRM) [IG] channel C spiked high. The high count rate resulted in the receipt of a hi-hi trip signal by the RPS logic which was in the non-coincident scram mode.

At the time of this event, Unit 2 IRM channel C detector cable shield had been identified to be shorted to ground, and a time domain reflectometer (TDR) trace was being performed on the IRM detector cable shield to determine the location of the ground. During the performance of the TDR trace, SRM channel C count rate suddenly increased (spiked) causing a full reactor scram. The TDR was immediately turned off following the scram. The spiked SRM was cleared and the scram reset at 2026 hours.

Units 1 and 3 were defueled. Unit 2 was in cold shutdown with all control rods fully inserted. All systems functioned as expected under the above plant condition. This event is reportable in accordance with 10 CFR 50.73(a)(2)(iv).

ANALYSIS OF EVENT

A hi-hi trip signal on an SRM channel with the neutron monitoring system in the non-coincident mode will generate a full reactor scram whenever the count rate exceeds a preset limit. Since the SRM scram circuitry functioned according to design, this event had no adverse impact on nuclear safety.

CAUSE OF EVENT

The root cause of this event has not been determined at this time. The scram was caused by an unexpected hi-hi trip in the SRM cable during the performance of TDR tracing on a nearby IRM cable. This interaction between channels has not been observed before.

CORRECTIVE ACTIONS

The ground fault in the IRM channel C detector cable shield was removed by reworking the detector cable connector at the drywell penetration.

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 2	050002 6091	--	004	--	000	3	OF 03

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

A special team of TVA and vendor (General Electric) personnel will perform a detailed evaluation of the entire neutron monitoring system prior to Unit 2 restart. As part of their evaluation, the team is investigating the interaction between channels. TVA will report the results in a supplement to this Licensee Event Report (LER).

PREVIOUS SIMILAR EVENTS

None

COMMITMENTS

A special team will perform a detailed evaluation of the entire neutron monitoring system prior to Unit 2 restart. TVA will report the results in a supplement to this LER. The supplement will be submitted 30 days after restart.

Energy Industry Identification System (EIIS) codes are identified in the text as [XX].