NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Browns Ferry - Unit 1	0 5 0 0 0 2 5 9	1 OF 0 3

TITLE (4) Failures Experienced with Reactor Building Ventilation Radiation Monitor Circuits

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 NAMES	DOCKET NUMBER(S)
0 2	1 5	8 6	8 6	0 0 9	0 0	0 3	1 7	8 6	Browns Ferry - Unit 2	0 5 0 0 0 2 6 0
									Browns Ferry - Unit 3	0 5 0 0 0 2 9 6

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (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 Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		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
Richard C. Steele, Compliance Engineer	2 0 5 — 7 2 9 - 2 0 7 0

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	
A	Y	I L R L Y	P 2 9 7	Y							

SUPPLEMENTAL REPORT EXPECTED (14)

		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

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

This report describes recent events that were experienced with reactor building radiation ventilation monitoring system. The events are not specifically related; however, each involves the reactor building ventilation radiation monitors.

1. On February 15, 1986, at 1200 CST, on unit 2 a secondary containment isolation occurred due to a wiring discrepancy on the panel under test. A drawing discrepancy has been initiated to correct the problem.

2. On February 15, 1986, at 2239 CST on unit 3, a secondary containment isolation occurred due to a random relay failure.

3. On February 26, 1986, at 1550 CST on unit 1, a secondary containment isolation occurred due to improper jumper installation on the panel under test. Personnel were cautioned to exercise better judgment in the performance of duties.

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Browns Ferry - Unit 1	0 5 0 0 0 2 5 9	8 6	— 0 0 9	— 0 0	0 2 OF 0 2

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

Units 1 and 3 were in an extended maintenance outage, and unit 2 was in a refueling outage at the time of the events described below. The events are not specifically related; however, each involves the reactor building ventilation radiation monitors.

1. On February 15, 1986, at 1200 CST, the unit 2 instrument mechanics were performing the reactor building ventilation radiation monitors calibration surveillance instruction (SI 4.2.A-10) on channel 'A' detectors. The instrument mechanics placed a jumper across terminal points AA-52 and CC-34 on panel 9-42 to bypass relay 16A-K61A (inboard isolation logic) contacts 1 and 2. Proceeding with the next step of the SI, which deenergized 16A-K61A, an inadvertent secondary containment isolation occurred as follows:

   a. Standby gas treatment (BH) train 'A' and 'C' initiated.
   b. Control room emergency ventilation (VI) train 'A' initiated.
   c. Unit 2 reactor zone (VB) isolated.
   d. Unit 1, 2, and 3 refuel zone (VA) isolated.
   e. Primary containment isolation system (JM) group 6 (purging and venting) isolation.

   The SI had been revised on February 12, 1986, to simplify and clarify the instruction in accordance with a commitment made in LER BFRO-50-296/86003. During this first performance of the revised SI, it was found that the field wiring did not agree with the electrical connection drawings. The circuit was wired schematically correct; and the field wiring did not affect the normal function of the circuit. The wiring discrepancy did, however, cause the surveillance procedure to be in error and caused the inadvertent actuation described above. The actuations that occurred are consistent with expected actions when the logic trip contacts were not actually bypassed. Similar circuits of units 1, 2, and 3 reactor building ventilation radiation monitors were checked and verified to agree with the electrical connection drawings. A drawing discrepancy has been initiated to correct the problem on the unit 2 'A' channel detectors.

2. On February 15, 1986, at 2239 CST, a unit 3 primary containment isolation occurred. The actuations occurred because relay K2, (Potter & Brumfield, model KH4690) in refueling zone exhaust radiation monitor (IL) (RM-90-141) channel 'B' high radiation exhaust circuit had failed and caused the following:

   a. Standby gas treatment (BH) trains A, B, and C initiated.
   b. Control room emergency ventilation (VI) train A and B initiated.
   c. Unit 1, 2, and 3 refuel zone (VA) isolated.
   d. Primary containment isolation system (JM) group 6 (purging and venting) isolation.

The actuations are consistent with action expected due to the K2 relay (upscale trip) failure. The failed relay was replaced, and the listed circuits returned to normal standby readiness.

3. On February 26, 1986, at 1550 CST, the unit 1 instrument mechanics were performing the reactor building ventilation radiation monitors calibration surveillance instruction (SI 4.2.A-10) on channel 'A' detectors. The instrument mechanics placed a jumper across terminal points CC-38 and CC-40 on panel 9-42 to bypass relay 16A-K61A (outboard isolation logic) contacts 3 and 4. Proceeding with the next step of the SI, which deenergized 16A-K61A, an inadvertent secondary containment occurred as follows:

   a. Standby gas treatment (BH) trains B and C initiated.
   b. Control room emergency ventilation (VI) train B initiated.
   c. Unit 1 reactor zone (VB) isolated.
   d. Units 1, 2, and 3 refuel zone (VA) isolated.
   e. Primary containment isolation system (JM) group 6 (purging and venting) isolation.

   Investigation of the problem indicated that the jumper was not in good contact with the terminal points; thus, the trip logic was not effectively bypassed. When relay 16A-K61A was deenergized the initiating isolation logic was completed. The actuations that occurred are consistent with expected actions when relay 16AK61A contacts were not properly bypassed.

   Personnel error is involved because the instrument mechanics did not verify good electrical contact when the jumper was installed. The personnel involved were cautioned to exercise better judgement in the performance of duties.

   No significant safety concerns were raised by these events. In each case, the isolations that occurred are in the conservative direction.

Responsible Plant Section - IM

Previous Events - BFRO-50-259/85021; -296/86003; -296/85019; -296/85022

TENNESSEE VALLEY AUTHORITY

Browns Ferry Nuclear Plant
P.O. Box 2000
Decatur, Alabama 35602

March 17, 1986

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

Dear Sir:

TENNESSEE VALLEY AUTHORITY - BROWNS FERRY NUCLEAR PLANT UNIT 1 - DOCKET NO. 50-259 - FACILITY OPERATING LICENSE DPR-33 - REPORTABLE OCCURRENCE REPORT BFRO-50-259/86009

The enclosed report provides details concerning failures experienced with reactor building ventilation radiation monitor circuits. This report is submitted in accordance to 10 CFR 50.73 (a)(2)(iv).

Very truly yours,

TENNESSEE VALLEY AUTHORITY

EA Gunn for

Robert L. Lewis
Plant Manager
Browns Ferry Nuclear Plant

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cc (Enclosures):
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NRC Resident Inspector, Browns Ferry Nuclear Plant

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