NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

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

TITLE (4)
Design Oversight on Load Shed Logic and Single Failure Criteria

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 2	8 4	8 4	—	0 2 2	—	0 1	0 7	2 0	8 4	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)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
N		20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
0 9 6		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)	X 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
Jimmy B. Walker	AREA CODE 2 0 5 — 7 2 9 - 0 8 6 5

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
X YES (If yes, complete EXPECTED SUBMISSION DATE)	NO		0 1	0 1	8 4

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

An IE Bulletin 79-01B investigation determined that a single failure or a loss of coolant accident and a loss of offsite power, could cause equipment necessary for electrical board room cooling to be lost. The cause of this condition is a design oversight.

Single failure of a distribution board could cause the loss of redundant cooling equipment in some electrical board rooms. During a loss of coolant accident in conjunction with loss of offsite power, normal ventilation for electrical board rooms is load shed with no provisions for manual restart.

As interim corrective measures, operating instructions have been revised to allow for restarting the necessary equipment within one hour by using electrical jumpers and/or mechanically providing an exhaust air duct opening. Long-term corrective action is under evaluation and proposed changes will be addressed in a followup report by January 1, 1985.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Browns Farry - Units 1, 2, and 3	0 5 0 0 0 2 5 9	8 4	— 0 2 2	— 0 1	0 2 OF 0 2

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

Unit 1 was operating at 96 percent power, unit 2 was operating at 59 percent power, and unit 3 was in a refueling outage. All three units were affected by this event.

On May 12, 1984, during IE Bulletin 79-01B evaluations, it was determined that during a loss of coolant accident in conjunction with loss of offsite power (EK), necessary cooling equipment for some electrical board (BD) rooms for units 1 and 2 could be lost. Because of a design error, the normal exhaust fans (FAN) (common to board rooms "A" and "B" on unit 1, and board rooms "C" and "D" on Unit 2) are automatically and permanently load shed (ED) from their power supply upon receipt of an accident signal (LOCA) and concurrent loss of offsite power. This condition would not affect unit 3 electrical board room cooling, because unit 3 has no comparable load shed logic contacts.

A single failure of a 480V reactor motor operated valve board (RMOV) (ECBD) (1A, 2A, or 3A) causes the loss of redundant cooling equipment for some electrical board rooms. The equipment affected is the normal exhaust fan (1A board affects electrical board rooms A and B; 2A board affects electrical board rooms C and D; 3A board affects electrical board rooms 3A and 3B) and the emergency air-conditioners (ACU) for electrical board rooms A, C, and 3A. This is contrary to Final Safety Analysis Report, Section 10.12.5. (Note: Room cooling is dependent upon either the exhaust fan or the emergency air-conditioner.)

The Plant Operating Instruction - 57, and Emergency Operating Instruction - 36 were revised May 12, 1984 for operating units 1 and 2, and June 15, 1984 for outage unit 3 (cycle 5 refueling outage) to include appropriate action to be taken upon loss of the cooling units listed above. The instruction options include jumpering the 480V load shed logic contacts on the units 1 and 2 fans affected within the first hour of losing ventilation, and/or providing an exhaust path in the exhaust fan ductwork following the loss of a 480V RMOV BD (1A, 2A, or 3A) (DUCT).

Analysis shows that all essential equipment in the electrical board rooms would function for one hour during which time the above operator action would be necessary.

It is anticipated that long-term corrective action will consist of correcting the load shedding logic, separating the power sources for electrical board room cooling equipment, and making various changes to provide environmental qualification of the ventilation equipment. The proposed changes will be addressed in a followup report by January 1, 1985.

Responsible Section - ED

Previous Similar Events - None

TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
Browns Ferry Nuclear Plant
P. O. Box 2000
Decatur, Alabama 35602

July 20, 1984

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-50-259/84022 R1

The enclosed updated report provides additional information concerning design oversight on load shed logic and single failure criteria. This report is submitted in accordance with 10 CFR 50.73 (a)(2)(ii).

Very truly yours,

TENNESSEE VALLEY AUTHORITY

J. R. Pittman

G. T. Jones
Power Plant Superintendent
Browns Ferry Nuclear Plant

Enclosure
cc (Enclosure):
Regional Administrator
U. S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region II
101 Marietta Street, Suite 2900
Atlanta, GA 30303

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

NRC Resident Inspector, BFN

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