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 - Unit 1	0 5 0 0 0 2 5 9	1 OF 0 2

TITLE (4) Reevaluation of Design Criteria For Final Safety Analysis Report Section 8.6.2

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)
									Browns Ferry - Unit 2	0 5 0 0 0 2 6 0
0 6	2 0	8 5	8 5	0 3 2	0 0	0 7	1 9	8 5	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 0 0		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
	AREA CODE
D. L. Smith	2 0 5 — 7 2 9 - 3 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		1 0	0 1	8 5

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

Based on analytical calculations by TVA's Office of Engineering, the possibility exists for the 250 VDC main battery terminal voltage to drop below the Final Safety Analysis Report (FSAR) Section 8.6.2 specified final value of 210 Vdc for a short transient condition following postulated accidents. The calculated transient value is 207 Vdc.

This short transient could cause an inadvertent trip of the Staticon inverters which power the wide range torus temperature monitors and the Topaz inverters which power the high pressure coolant injection controller circuitry.

Corrective action, pending further evaluation, is to lower the undervoltage trip setting on the inverters.

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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 5	— 0 3 2	— 0 0	0 2 OF 0 2

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

Units 1 and 2 are in a refueling outage, and unit 3 is in an extended maintenance outage.

As a result of recent analytic calculations on post accident loading of the 250 V battery system, a short term transient voltage of 207 V was predicted. This is three volts less than the original minimum as specified in the Final Safety Analysis Report (FSAR). This voltage dip could initiate undervoltage detection circuitry and trip the Staticon inverters which supply power to the analog trip system (ATU) and the Topaz inverters for the high pressure cooling injection system (HPCI), and feedwater system controllers. The HPCI and reactor core isolation cooling (RCIC) governors would also see the voltage dip.

The analysis results are conservative in that an accident is assumed on one unit concurrent with loss of offsite power. Also, battery 4 is presumed out of service with its loads transferred to the three shutdown batteries. Inadvertent trip of the inverters could, however, cause a short term loss of the HPCI system and the wide range temperature instrumentation for the torus. Feedwater system loss is inherent in loss of offsite power scenarios. Browns Ferry is fully designed for safe shutdown using only low pressure injection systems. Potential loss of HPCI represents a loss of a redundant high pressure system.

As corrective action, the undervoltage sensor setpoints for the Staticon ATU inverters and the existing Topaz HPCI and feedwater inverters will be lowered, thus providing assurance that the transient voltage conditions will not result in operation of the detectors. The Topaz inverters are scheduled to be changed to a different type. The setpoints for the Staticon and Topaz inverters will be lowered or the Topaz inverter replacements installed and their undervoltage detection circuitry evaluated and set appropriately for each of units 1, 2, and 3 prior to the restart of each unit. Also, the operating voltage for the HPCI and RCIC governor controls will be evaluated prior to the restart of unit 3 from its current maintenance outage to ensure that the lower voltage does not affect operability.

These new calculations are conservative and follow-up analysis is being pursued. This may alleviate the necessity for the undervoltage setpoint changes. A follow-up report will be submitted if significant changes occur as a result of the analysis. In the meanwhile, the corrective action described above will be implemented. We do not believe Part 21 is involved in that these calculations are specific to changes in the Browns Ferry battery loading assumptions.

Responsible Plant Section - N/A

Previous Events - None

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

July 19, 1985

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

Dear Sir:

TENNESSEE VALLEY AUTHORITY - BROWNS FERRY NUCLEAR PLANT (BFN) UNIT 1 - DOCKET NO. 50-259 - FACILITY OPERATING LICENSE DPR-33 - REPORTABLE OCCURRENCE REPORT BFRO-50-259/85032

The enclosed report provides details concerning the reevaluation of design criteria for Final Safety Analysis Report, Section 8.6.2. This report is submitted in accordance with 10 CFR 50.73(a)(2)(ii).

Very truly yours,

TENNESSEE VALLEY AUTHORITY

for Robert L. Lewis

Q. T. Jones
Plant Manager
Browns Ferry Nuclear Plant

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

NRC Resident Inspector, BFN

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

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