

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Browns Ferry - Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 2 5 9				PAGE (3) 1 OF 0 1 3						
TITLE (4) Inoperability of Diesel Generators Because of Seismically Unqualified Battery Racks																				
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	6	2	3	8	5	8	5	0	4	9	0	0	1	0	2	5	8	5	Browns Ferry - Unit 2	0 5 0 0 0 2 6 0
0	6	2	3	8	5	8	5	0	4	9	0	0	1	0	2	5	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 5. (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(i)(1)				50.73(a)(2)(iv)				73.71(c)						
0 1 0 1 0		20.405(a)(1)(ii)				X 50.36(i)(2)				50.73(a)(2)(v)				OTHER (Specify in Abstract below and in Text NRC Form 366A)						
		20.405(a)(1)(iii)				50.73(a)(2)(ii)				50.73(a)(2)(viii)(A)										
		20.405(a)(1)(iv)				X 50.73(a)(2)(iii)				50.73(a)(2)(viii)(B)										
		20.405(a)(1)(v)				50.73(a)(2)(iv)				50.73(a)(2)(ix)										
LICENSEE CONTACT FOR THIS LER (12)																				
NAME										TELEPHONE NUMBER										
Stephen B. Jones, Compliance Engineer										2 1 0 1 5 7 1 2 1 9 1 - 1 2 1 5 1 3 1 8										
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																				
CAUSE	SYSTEM	COMPONENT	MANUFAC TURE	REPORTABLE TO NPDOS		CAUSE	SYSTEM	COMPONENT	MANUFAC TURE	REPORTABLE TO NPDOS										
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)

During performance of work on the diesel generator (DG) battery racks, several battery rack support studs were broken. On June 23, 1985, during a post maintenance review of a maintenance request used to repair the DG battery rack stud, it was determined that the weld repair procedure used was not suitable for the welding of American Society for Testing and Materials (ASTM) A-307 material. Subsequent investigations discovered the stud material used on the battery racks was not ASTM A-307 material but ASTM A-325 material which is not suitable for welding by TVA procedures. The DGs were declared inoperable on September 24, 1985, because of the battery rack studs seismic concerns and an unrelated surveillance problem (LER 259/85041). The DG battery racks were brought into a seismically qualified configuration by installation of studs made of a material qualified for the application.

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## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3750-0104

EXPIRES 8/31/86

FACILITY NAME (1)  Browns Ferry - Unit 1	DOCKET NUMBER (2)  0500025985	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		04	9	0	0	2	OF 03

TEXT (If more space is required, use additional NRC Form 365A's) (17)

Units 1 and 2 were in refueling outages, and unit 3 was in cold shutdown when the condition was identified. All three units were affected.

During performance of work to seismically qualify the diesel generator (DG) (EK) battery (EJ) racks (see LER 259/85041), several battery rack studs were inadvertently broken. There are eight studs per battery rack that secure the support structure to the floor. The studs are welded to an embedded plate made of American Society for Testing and Materials (ASTM) A-36 material and were repaired using a weld procedure specified by design engineers. On June 23, 1985, during a post maintenance review of a maintenance request used to repair the DG battery rack studs, it was discovered that the weld procedure used was not appropriate for the welding of ASTM A-307 material, which is the material design drawings specified for the studs. Further investigation discovered TVA did not have any procedures to weld A-307 material. It could not be immediately determined if a problem existed with all battery rack stud to baseplate welds because section 1.3 of the ASTM specification for A-307 states that nonheaded anchor bolts shall conform to ASTM A-36 specifications. If the material used for the studs met these requirements, all 64 stud welds would be sufficient. The material used for the studs could not be identified through plant records so 16 samples of the 64 battery rack studs were taken for analysis. The analysis results received on September 24, 1985, indicated the studs did not conform to ASTM A-307 specifications but to ASTM A-325. This material is not suitable for welding.

On September 24, 1985, all eight DGs were declared inoperable because of the battery rack qualifications and the failure to perform vendor recommended maintenance on the DG (see LER 259/85041). The DGs are still being maintained in a normal lineup in order to maintain the plant in the safest configuration.

The root cause of this event was a construction error made in the original installation of the battery rack studs. Apparently, some of the ASTM A-325 bolting material intended for use on the battery rack was inadvertently used as stud material. Because this occurred during construction, responsible personnel could not be identified.

Because of this condition, it was possible that a seismic event could have caused the DG battery racks to fail and consequently prevent the DG from starting. If this failure occurred concurrent with the loss of offsite power, the ability to maintain the plant in a safe shutdown condition could have been affected.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMR NO. 3150-0104

EXPIRES 8/31/88

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Browns Ferry - Unit 1	05000259815	04	9	0	0	3	OF 03

TEXT (If more space is required, use additional NRC Form 365A's) (17)

Because of the inoperability of the DGs, some technical specification (TS) requirements were not met when the condition was identified. Specifically, TS 3.5.B.9 requires operability of residual heat removal (BG) and its associated DG when fuel is in the vessel. This could not be met for unit 1 because of DG inoperability. The reactor cavity on unit 1 was flooded with the fuel pool (DA) gates open. This provided sufficient water inventory to provide adequate low pressure cooling. TS 3.5.A.4 requires at least one core spray loop (BM) operable with its associated DG when fuel is in the vessel. This TS, along with 3.5.B.9 could not be met for unit 3 because of DG inoperability.

All the DG battery rack studs have subsequently been replaced with certified ASTM A-36 grade studs; therefore, seismic qualification has now been restored.

Responsible Plant Section - CO

Previous Events - BFRO-50-259/85014

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

October 25, 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-50-259/85049

The enclosed report provides details concerning the inoperability of  
diesel generators because of seismically unqualified battery racks.  
This report is submitted in accordance with 10 CFR 50.36 (c)(2) and  
10 CFR 50.73 (a)(2)(ii).

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*Robert L. Lewis*  
Robert L. Lewis  
Acting Plant Manager  
Browns Ferry Nuclear Plant

Enclosures

cc (Enclosures):

Regional Administrator  
U.S. Nuclear Regulatory Commission  
Office of Inspection and Enforcement  
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Atlanta, Georgia 30339

NRC Resident Inspector, BFN