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ACCESSION NBR: 8810040069 DOC. DATE: 88/09/26 NOTARIZED: NO DOCKET #
 FACIL: 50-296 Browns Ferry Nuclear Power Station, Unit 3, Tennessee 05000296
 AUTH. NAME AUTHOR AFFILIATION
 BAKER, R.L. Tennessee Valley Authority
 CAMPBELL, G.G. Tennessee Valley Authority
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 88-003-00: on 880826, inoperability of diesel generators due to seismically unqualified battery racks. R

W/8 ltr. I

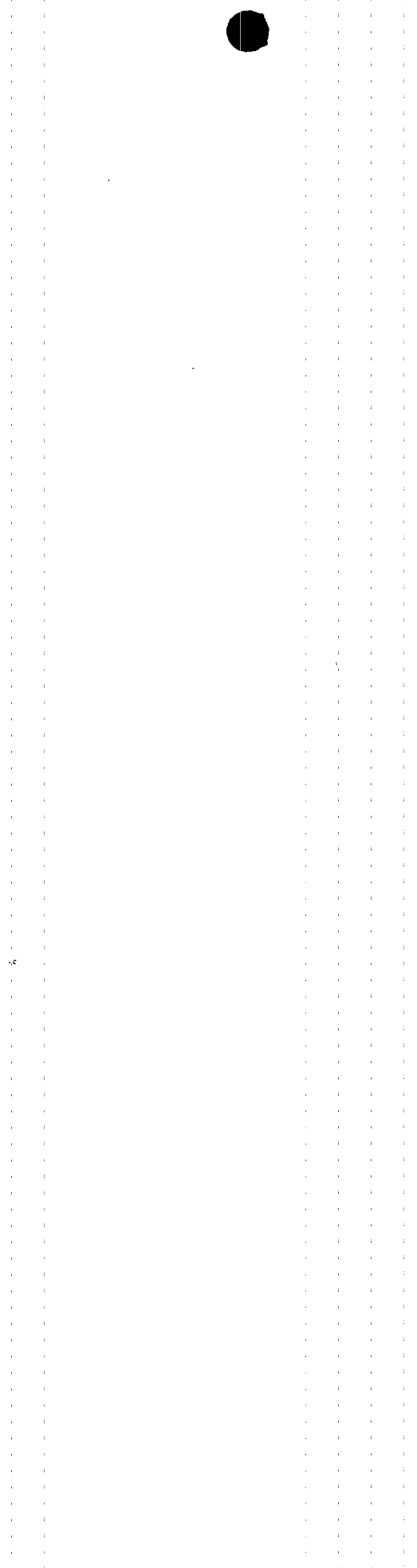
DISTRIBUTION CODE: IE22D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 4 D
 TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES: 1 Copy each to: S. Black, J.G. Partlow, S. Richardson 05000296 S
 B.D. Liaw, F. McCoy.

	RECIPIENT ID CODE/NAME	COPIES	L	T	R	ENCL	RECIPIENT ID CODE/NAME	COPIES	L	T	R	ENCL	
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	GEARS, G	1				1						1	D
INTERNAL:	ACRS MICHELSON	1				1	ACRS MOELLER	2				2	D
	ACRS WYLIE	1				1	AEOD/DOA	1				1	S
	AEOD/DSP/NAS	1				1	AEOD/DSP/ROAB	2				2	
	AEOD/DSP/TPAB	1				1	ARM/DCTS/DAB	1				1	
	DEDRO	1				1	NRR/DEST/ADS 7E	1				0	
	NRR/DEST/CEB 8H	1				1	NRR/DEST/ESB 8D	1				1	
	NRR/DEST/ICSB 7	1				1	NRR/DEST/MEB 9H	1				1	
	NRR/DEST/MTB 9H	1				1	NRR/DEST/PSB 8D	1				1	
	NRR/DEST/RSB 8E	1				1	NRR/DEST/SGB 8D	1				1	
	NRR/DLPQ/HFB 10	1				1	NRR/DLPQ/QAB 10	1				1	
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	NUDOCS-ABSTRACT	1				1	<u>REG EILE 02</u>	1				1	
	RES TELFORD, J	1				1	RES/DSIR DEPY	1				1	
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EXTERNAL:	EG&G WILLIAMS, S	4				4	FORD BLDG HOY, A	1				1	I
	H ST LOBBY WARD	1				1	LPDR	1				1	D
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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) BROWNS FERRY UNIT 3	DOCKET NUMBER (2) 0 5 0 0 0 2 9 6	PAGE (3) 1 OF 0 3
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TITLE (4) **INOPERABILITY OF DIESEL GENERATORS DUE TO SEISMICALLY UNQUALIFIED BATTERY RACKS CAUSED BY AN INADEQUATE PROCEDURE**

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	
0 8	2 6	8 8	8 8	0 0 3	0 0	0 9	2 6	8 8	BROWNS FERRY UNIT 1	
									BROWNS FERRY UNIT 2	
									DOCKET NUMBER(S) 0 5 0 0 0 2 5 9	
									0 5 0 0 0 2 6 0	

OPERATING MODE (9) **N**

POWER LEVEL (10) **0 1 0**

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
20.405(a)(1)(i)	50.38(c)(1)	50.73(a)(2)(v)	73.71(c)
20.405(a)(1)(ii)	50.38(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)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER	
	AREA CODE	NUMBER
Richard L. Baker, Engineer, Plant Operations Review Staff	2 0 5	7 2 9 1 - 2 1 5 3 8

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)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

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

On August 26, 1988, at 1350 hours, with all three Browns Ferry units defueled, diesel generators (DG) 3A, 3B, and 3D were declared inoperable due to seismic qualification concerns of their battery racks. The batteries and battery racks for DG 3A, 3B, 3C and 3D were installed December of 1980. The front cross-braces on the battery racks for DG 3A, 3B, and 3D were not installed as required by vendor drawings. The omission of these braces resulted from an inadequate workplan which did not include the detail drawings which depict the correct location of all rack components. Workplans issued after June 13, 1986 are required by a new plant procedure to include all drawings and supportive documentation utilized to implement the workplan. This procedure also requires the work steps to reference any applicable drawings, procedures, or instructions required for work or inspection. The braces and supporting hardware required to ensure that the battery racks conform to the vendor design were installed. DG 3A, 3B, and 3D were returned to service on September 10, 1988 at 0937 hours, September 10, 1988 at 2000 hours, and September 8, 1988 at 0305 hours respectively. This resulted in DG 3A, 3B, and 3D being inoperable for 14 days 19 hours and 47 minutes, 15 days 6 hours and 10 minutes, and 12 days, 13 hours and 15 minutes respectively.

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PDR ADOCK 05000296
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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) BROWNS FERRY UNIT 3	DOCKET NUMBER (2) 0 15 0 0 0 2 9 16	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
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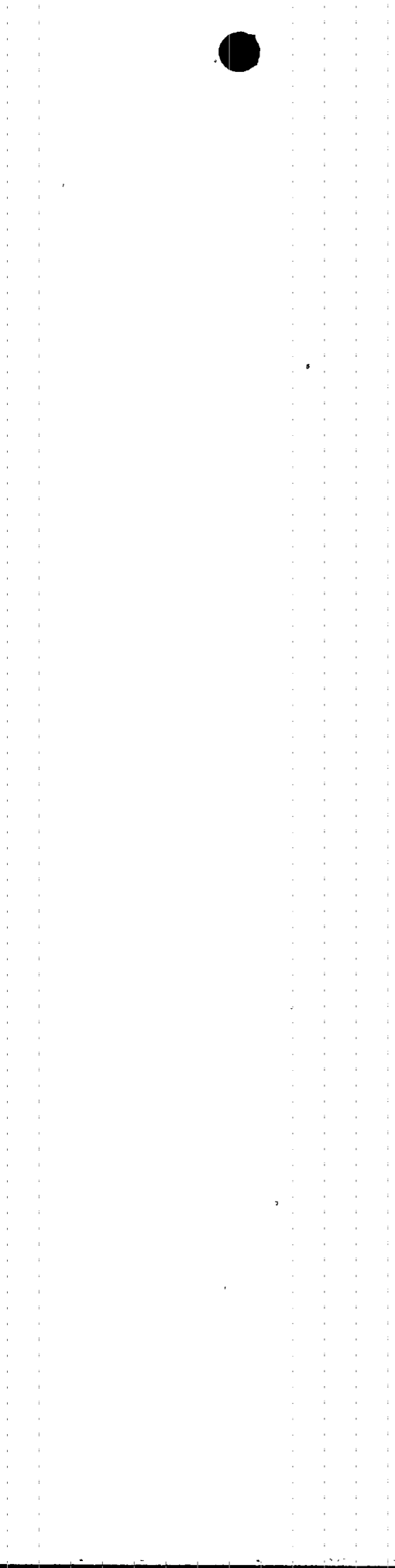
TEXT (If more space is required, use additional NRC Form 366A's) (17)

Description of Event

On August 26, 1988, at 1350 hours, with all three Browns Ferry units defueled, diesel generators (DG) (EIS Code DG) 3A, 3B, and 3D were declared inoperable due to seismic qualification concerns of their battery racks. During a plant walkdown it was discovered that the DG battery racks for the above listed DGs did not match the configuration on the associated drawing for configuration control and seismic qualification. The unit 1 and 2 DG A, B, C and D and unit 3 DG 3C were found to match the configuration on the associated drawing for configuration control and seismic qualification. Since the DG 3A, 3B, and 3D battery racks did not match the seismically qualified configuration, the ability of the batteries to supply power during a design basis earthquake could not be assured. Therefore, the Shift Operations Supervisor (SOS) declared DG 3A, 3B, and 3D inoperable. The SOS verified that other DGs were operable and that offsite power was available. The DG batteries supply power to the DG control circuitry. Therefore, the operability of these DGs could not be assured during a design basis earthquake. The braces and supporting hardware required to ensure that the battery racks conform to the vendor design, were installed. DG 3A, 3B, and 3D were returned to service on September 10, 1988 at 0937 hours, September 10, 1988 at 2000 hours, and September 8, 1988 at 0305 hours respectively. This resulted in DG 3A, 3B, and 3D being inoperable for 14 days 19 hours and 47 minutes, 15 days 6 hours and 10 minutes, and 12 days, 13 hours and 15 minutes, respectively.

Cause of Event

The batteries and battery racks for DG 3A, 3B, 3C, and 3D were installed December of 1980. The front cross-braces on the battery racks for DG 3A, 3B, and 3D were not installed as required by the vendor drawings. The omission of these braces resulted from the drawings depicting the correct location of all rack components not being included in the workplan which installed the battery racks. The workplan did include the vendor rack assembly instructions. These instructions included a sketch of a typical rack which did not show the cross-braces on the front of the rack. These instructions also reference a vendor drawing for the installation of the braces. The battery racks for DG 3A, 3B, and 3D were installed and inspected by the same craftsmen, cognizant engineer and quality control (QC) inspector. The battery rack for DG 3C, which was assembled and installed correctly, was installed by different craftsmen and inspected by a different QC inspector and a more senior cognizant engineer. The problem would have been avoided if the required vendor drawings had been included in the workplan.



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) BROWNS FERRY UNIT 3	DOCKET NUMBER (2) 0 5 0 0 0 2 9 6	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		8 8	- 0 0 3	- 0 0	0 3	OF 0 3

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

Analysis of Event

With the cross-braces and supporting hardware not installed on the DG 3A, 3B, and 3D battery racks, there was a potential to damage the DG batteries during a design basis earthquake. Damage to the DG batteries could prevent startup of the corresponding DG. The loss of the DG would accordingly jeopardize the ability to maintain the plant in a safe shutdown condition in the event of an accident and concurrent loss of offsite power. At the time of this event, DG A and B were operable and offsite power was available. All units are currently shutdown and defueled, therefore, emergency power supply requirements are minimal. Since this condition has existed since December of 1980 some technical specification requirements were not being met while the unit was operating and during fuel movement. However, no seismic events occurred during this time which caused the DG battery racks to fail. Consequently this condition did not prevent the DGs from starting. Therefore, only a potential existed for a failure of the DG battery racks.

Corrective Action

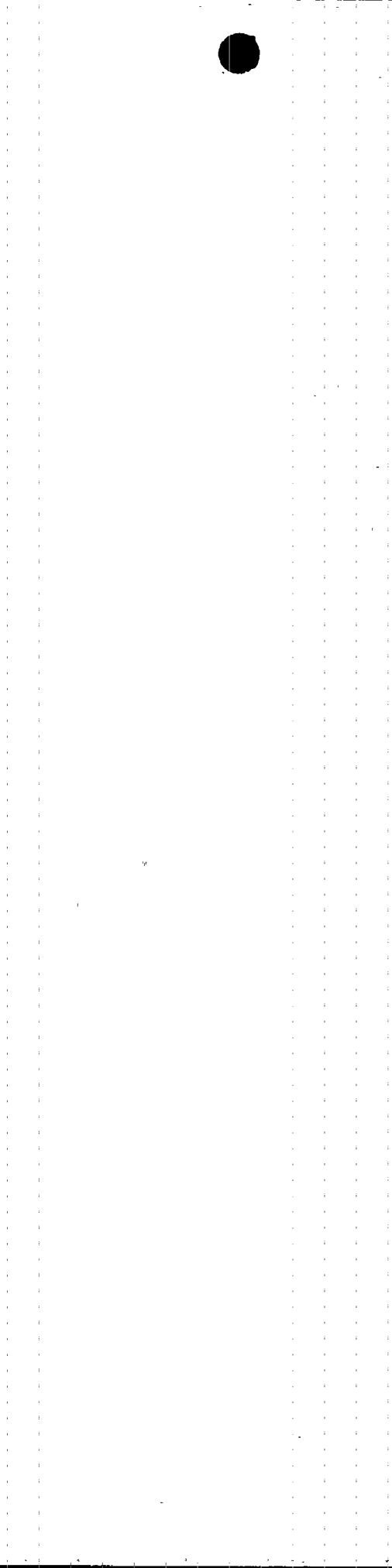
The braces and supporting hardware required to ensure the DG 3A, 3B, and 3D battery racks conform to the vendor design have been installed. Also, a new plant procedure was issued in June 1986 which should prevent recurrence of this condition. This new plant procedure requires workplans to include all drawings and supportive documentation utilized to implement the workplan. This procedure also requires the work steps to reference any applicable drawings, procedures, or instructions required for work or inspection. All DG and main battery racks will be visually inspected by November 1, 1988 to verify all rack components required by the vendor drawings are installed.

Previous Similar Events

- BFRO-50-259/85014 - All 8 DG battery racks could not meet seismic qualification requirements due to shims not being installed.
- BFRO-50-259/85041 - All 8 DG battery racks could not meet seismic qualification requirements due to hold-down stud material problems and a missed surveillance.
- BFRO-50-259/85049 - All 8 DG battery racks could not meet seismic qualification requirements due to hold-down stud material problems.

Commitments -

All DG and main battery racks will be visually inspected by November 1, 1988 to verify all rack components required by the vendor drawings are installed.



TENNESSEE VALLEY AUTHORITY

Browns Ferry Nuclear Plant
Post Office Box 2000
Decatur, Alabama 35602

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

Dear Sir:

TENNESSEE VALLEY AUTHORITY - BROWNS FERRY NUCLEAR PLANT UNIT 3 - DOCKET
NO. 50-296 - FACILITY OPERATING LICENSE DPR-68 - REPORTABLE OCCURRENCE REPORT
BFRO-50-296/88003

The enclosed report provides details concerning the inoperability of diesel
generators due to seismically unqualified battery racks caused by an inadequate
procedure. This report is submitted in accordance with 10 CFR 50.73 (a)(2)(v).

Very truly yours,

TENNESSEE VALLEY AUTHORITY

Allan W. Sullivan
Guy G. Campbell
Plant Manager
Browns Ferry Nuclear Plant

Enclosures

cc (Enclosures):

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U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
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INPO Records Center
Suite 1500
1100 Circle 75 Parkway
Atlanta, Georgia 30339

NRC Resident Inspector, Browns Ferry Nuclear Plant



11-1-11