

LICENSEE EVENT REPORT

Attachment to AECM-83/0523

Page 1 of 3

CONTROL BLOCK:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
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PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION

0	1	M	S	G	G	S	1	2	0	0	-	0	0	0	0	0	-	0	0	3	4	1	1	1	1	4	1	5
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7 8 9 14 15 25 26 30 57 CAT 98

CON'T

0	1	L	6	0	5	0	0	0	4	1	6	7	1	0	0	4	8	2	8	0	8	3	1	8	3	9
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7 8 80 81 DOCKET NUMBER 88 89 EVENT DATE 74 75 REPORT DATE 86

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES: (10)

02 With the unit in cold shutdown a special inspection on Division 2

03 Standby Diesel Generator was conducted. During this inspection, one of

04 the capscrews which secures the rear crankcase cover to the engine block

05 was discovered to be defective. This report is submitted pursuant to

06 T.S.6.9.1.12.e and 1. The event had no affect on the health and safety

07 of the public and did not constitute a threat to plant safety. The

08 Div. 1 and 3 D/G were operable at the time the defect was discovered.

0	9	EE	11	B	12	B	13	ENGINE	14	Z	15	Z	16	8	2	0	8	0	0	1	X	3	A	X	Z	Z	0	0	0	0	Y	N	A	D	0	5	5
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7 8 9 10 11 12 13 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

10 The capscrew broke while being checked for the correct torque.

11 It is believed that the capscrew had partially cracked due to fatigue

12 during engine operation prior to the torque check. The capscrew and

13 20 others were replaced. A design change has been completed which

14 replaced the current capscrews with higher strength capscrews.

1	5	8	28	0	0	0	29	NA	30	C	31	Special Inspection by Maintenance	32	2	33	2	34	NA	35	NA	36
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7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 808309130306 830831
PDR ADOCK 05000416
S PDR

NAME OF PREPARER

Ron Byrd

PHONE

NRC USE ONLY

GPO 9-7-82 8

SUPPLEMENTARY INFORMATION TO
LER 82-080/01 X-3

Mississippi Power & Light Company
Grand Gulf Nuclear Station - Unit 1
Docket No. 50-416

Reported Under Technical Specification: 6.9.1.12.e and i

Event Narrative:

This is an update to a previous report submitted on May 18, 1983. The following paragraphs describe the event reported.

The special inspection of the 21 capscrews which secure the rear crankcase cover to the engine block of the Division 2 Standby Diesel Generator revealed that one capscREW had failed. The capscrews were SAE Grade 5, 5/8 NC X 1-3/4".

The maintenance work order which led to the discovery of the failed capscREW had been initiated as a follow-up to a previous, similarly failed capscREW on the same Division 2 Standby Diesel Generator rear crankcase cover. This situation was previously reported to the NRC in Potentially Reportable Deficiency (PRD) 82/14 under 10CFR50.55e. The first failure occurred on March 15, 1982, during the 24-hour load test performed during the Pre-Operational Test Program. The failure of March 15, 1982, resulted in a generator fault caused by the head of the broken capscREW becoming lodged between the generator stator and rotor while the generator was at 100% load. This resulted in the generator tripping on Generator Differential Current. The generator was subsequently replaced. The capscrews securing the rear crankcase cover were inspected for correct tightness and found to be below the required 60 ft-lbs. The capscrews were replaced on both Division 1 and 2 Diesel Generators and torqued to the required 60 ft-lbs.

The follow-up work order, performed on October 4, 1982, instructed that each of the capscrews securing the rear crankcase cover to the engine block be checked for correct torque (60 ft-lbs). Three of the capscrews were found to be less than 40 ft-lbs (20, 23, and 35 ft-lbs). The work order further instructed that any capscrews not within ± 2 ft-lbs of the required 60 ft-lbs be torqued within the acceptable range. When the capscREW (which was found at 20 ft-lbs originally) was tightened it sheared off approximately one inch from the bottom side of the head before reaching 60 ft-lbs. Another work order was subsequently issued and the 21 capscrews on the Division 2 Diesel Generator rear cover were replaced with new replacement capscrews and torqued to 60 ft-lbs. An inspection of the Division 1 Diesel Generator revealed no problems (the Division 3 Diesel Generator is supplied by a different manufacturer so no inspection was required).

Nuclear Plant Engineering has attributed the cause of failure to fatigue cracking. A Design Change (DCP 82/4183) has been completed which replaced the current crankcase capscrews with a higher (SA540 Grade B24) strength type on both Division 1 and Division 2 Diesel Generators. Design Change Package (DCP) 82/0039 installed protective screens on the generator air gaps to prevent the entrance of foreign materials which could result in generator damage.

A test program was developed, the Division 2 diesel was instrumented and data was collected during a test run. This data was considered unacceptable. Equipment is on order to perform additional testing and vibration analysis. The results of this testing will determine whether additional corrective actions are required. An update report with the results of the analysis is expected to be submitted by March 1, 1984.



MISSISSIPPI POWER & LIGHT COMPANY

Helping Build Mississippi

P. O. BOX 1640, JACKSON, MISSISSIPPI 39205

August 31, 1983

NUCLEAR PRODUCTION DEPARTMENT

U. S. Nuclear Regulatory Commission
Region II
101 Marietta St., N.W., Suite 2900
Atlanta, Georgia 30303

Attention: Mr. J. P. O'Reilly, Regional Administrator

Dear Mr. O'Reilly:

SUBJECT: Grand Gulf Nuclear Station
Unit i
Docket No. 50-416
License No. NPF-13
File 0260/L-835.0
Update Report - Division 2
Standby Diesel Generator
Rear Crankcase Cover
Capscrew Defective
LER 82-080/01 X-3
AECM-83/0523

This letter submits an update to a previous update report submitted on May 18, 1983. The event for which the report was submitted occurred on October 4, 1982, when during a special inspection, one of the capscrews which secure the rear crankcase cover to the engine block of the Division 2 Standby Diesel Generator was discovered defective. The report was submitted pursuant to Technical Specification 6.9.1.12.e and i.

A design change (DCP 82/4183) has been completed which replaced the current crankcase bolts with a higher strength grade. Design Change Package 82/0039 installed protective screens on the generator air gaps to prevent the entrance of foreign materials which could result in generator damage.

As reported in the last update, a test program was developed, the Division 2 diesel was instrumented and data was collected during a test run. After analysis of the data, the data has been determined unacceptable. Equipment is on order to perform additional testing and vibration analysis. The results of this testing will determine whether additional corrective actions are required. An update report with the results of the analysis is expected to be submitted by March 1, 1984. Attached is LER 82-080/01 X-3 which is an interim report.

Yours truly,

L. F. Dale

L. F. Dale
Manager of Nuclear Services

EBS/SHH:sap
Attachment

cc: (See Next Page)

Member Middle South Utilities System

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MISSISSIPPI POWER & LIGHT COMPANY

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