

LICENSEE EVENT REPORT

CONTROL BLOCK: 1 6 (1)

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1 V A S P S 1 2 0 0 - 0 0 0 0 0 0 - 0 0 3 4 1 1 1 1 4 5
7 8 9 14 15 25 26 30 57 CAT 58

CON'T

0 1 REPORT SOURCE X 6 0 5 0 0 0 2 8 0 7 0 5 0 2 7 9 8 0 5 1 5 7 9 9
7 8 60 61 68 69 74 75 80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 Electro-Motive Division, General Motors Corp., notified Vepco that a problem could
0 3 develop in the thrust bearing of the turbo-charger for the emergency diesel generators
0 4 under certain repeat start operating modes. This condition is reportable per Techni-
0 5 cal Specification 6.6.2.a.(9). The original notification of this LER indicated Unit 2
0 6 instead of Unit 1. The health and safety of the public were not affected.

0 7
0 8

0 9 SYSTEM CODE CAUSE CODE CAUSE SUBCODE COMPONENT CODE COMP. SUBCODE VALVE SUBCODE
E E (11) B (12) D (13) E N G I N E (14) Z (15) Z (16)
7 8 9 10 11 12 13 18 19 20
(17) LER/RO REPORT NUMBER EVENT YEAR SEQUENTIAL REPORT NO. OCCURRENCE CODE REPORT TYPE REVISION NO.
7 9 0 1 7 0 1 T 0
21 22 23 24 26 27 28 29 30 31 32
ACTION TAKEN FUTURE ACTION EFFECT ON PLANT SHUTDOWN METHOD HOURS ATTACHMENT SUBMITTED NPD-4 FORM SUB. PRIME COMP. SUPPLIER COMPONENT MANUFACTURER
G (18) F (19) Z (20) Z (21) 0 0 0 0 Y (23) N (24) A (25) E 1 4 7 (26)
33 34 35 36 37 40 41 42 43 44 47

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 This is an engineering design problem which manifests itself only under restrictive
1 1 conditions. Several evolutions under these restrictive conditions are required to
1 2 cause significant damage. Procedural changes will preclude testing the diesel genera-
1 3 tors if the restrictive conditions exist. Design modifications will be developed and
1 4 evaluated.

1 5 FACILITY STATUS % POWER OTHER STATUS (30) METHOD OF DISCOVERY DISCOVERY DESCRIPTION (32)
G (28) 0 0 0 (29) NA D (31) Notification from EMD
7 8 9 10 12 13 44 45 46 80
1 6 ACTIVITY CONTENT RELEASED OF RELEASE AMOUNT OF ACTIVITY (35) LOCATION OF RELEASE (36)
Z (33) 4 (34) NA NA
7 8 9 10 11 44 45 80
1 7 PERSONNEL EXPOSURES NUMBER TYPE DESCRIPTION (39)
0 0 0 (37) Z (38) NA
7 8 9 11 12 13 80
1 8 PERSONNEL INJURIES NUMBER DESCRIPTION (41)
0 0 0 (40) NA
7 8 9 11 12 80
1 9 LOSS OF OR DAMAGE TO FACILITY TYPE DESCRIPTION (43)
Z (42) NA
7 8 9 10 80
2 0 PUBLICITY ISSUED DESCRIPTION (45)
N (44) NA
7 8 9 10 80

NAME OF PREPARER W. L. Stewart

PHONE: 804-357-3184

(Attachment, page 1 of 2)
Surry Power Station, Unit 1
Docket No. 50-280
Report No. 79-017/01T-0
Event Date: 05-02-79

1. Description of Event:

Electro-Motive Division of General Motors Corporation notified Vepco by letter, that as a result of extensive testing, they had found that under certain repeat start operating modes there is a possibility that the emergency diesel generator turbocharger thrust bearing could be damaged. An auto start with the oil temperature at approximately 200°F and the oil drained out of the lube oil filter and lube oil cooler could result in the engine reaching 900 RPM prior to sufficient oil pressure being established to the turbocharger thrust bearing. This may cause some smearing of the bearing metal so that cumulative damage from several similar starts would result in a turbocharger failure. This is reportable in accordance with Technical Specification 6.6.2.a.(9).

2. Probable Consequences/Status of Redundant Systems:

The conditions necessary to initiate turbocharger bearing damage are restrictive and probably never have occurred at Surry. Verbal information received from EMD of G.M. indicates in excess of 10-15 starts, under the condition specified, would be required for a turbocharger bearing failure. Therefore, the possibility of bearing failure at Surry is remote. The health and safety of the public were not affected.

3. Cause:

This is an engineering design problem which is only evident in this engine under the specified conditions.

4. Immediate Corrective Actions:

The periodic test procedure used to test the emergency diesel generator at refueling will be modified to ensure engine oil temperature is below 160°F prior to engine start. All other PT's and OP's start the engine at idle speed (450 RPM) which is not detrimental to the bearing regardless of oil temperature.

5. Scheduled Corrective Actions:

EMD stated in their letter that they were working on the development of an improved lube oil system. The modification package will be available for field installation in about six months, at which time it will be evaluated.

6. Actions Taken to Prevent Recurrence:

Not applicable.

7. Generic Implications:

This problem would be generic to all engines of this model which are utilized in a rapid start mode.

sj:W/NRC/C2