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 TOOKER, D.W. Iowa Electric Light & Power Co.
 RECIP. NAME: RECIPIENT AFFILIATION
 Region 3, Chicago, Office of the Director

SUBJECT: LER 81-016/01T-0: on 810421, lower crankshaft thrust bearings
 12 & 13 on diesel generator 1G-31 were found wiped on
 journal surface. Cause under investigation by vendor. Lower
 crankshaft thrust bearings replaced & crankshaft relapped.

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LICENSEE EVENT REPORT

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CON'T

REPORT SOURCE: 01
DOCKET NUMBER: 60 61 05 00 00 33 17 00 42 11 81 19 00 50 58 11 90
EVENT DATE: 68 69 74 75
REPORT DATE: 80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 | During the annual inspection of standby diesel gen. 1G-31, the lower cra
0 3 | nkshaft thrust #13 bearing and adjacent bearing #12 were found wiped on
0 4 | the journal surface. The #13 bearing was also found to have a small crac
0 5 | k from the main oil supply hole across the journal surface to the thrust
0 6 | surface. Redundant standby diesel 1G-21 annual inspection revealed simil
0 7 | ar wiped bearing problems (See R0 81-015). Standby D/G operability requi
0 8 | rements are given in T.S.3.8.A.2. Also see R0s 77-32,78-20,80-11,80-12.

SYSTEM CODE 09		CAUSE CODE EE		CAUSE SUBCODE X		COMPONENT CODE ENGINE						COMP. SUBCODE Z		VALVE SUBCODE Z	
7 8		9 10		11 12		13 14 15 16 17 18						19 20			
(17) LER/RO REPORT NUMBER		EVENT YEAR 81				SEQUENTIAL REPORT NO. 016		OCCURRENCE CODE 01		REPORT TYPE T				REVISION NO. 0	
21 22		23 24		25 26		27 28		29 30		31 32					
ACTION TAKEN AX		FUTURE ACTION X		EFFECT ON PLANT Z		SHUTDOWN METHOD Z		HOURS 0000		ATTACHMENT SUBMITTED Y		NPRO-4 FORM SUB. N		PRIME COMP. SUPPLIER A	
33 34		35 36		37 38		39 40		41 42		43 44		45 46		47 48	
CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)															

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 Vendor representative indicated the bearings had not failed and that

1 1 both bearings tolerances were within spec. The lower crankshaft thrust

1 2 #13 bearing and adjacent #12 bearing were replaced, crankshaft was re-

1 3 lapped, and the diesel was tested satisfactorily. Vendor analysis contin

1 4 ues and the results will be provided when available. Add Insp. planned.

FACILITY STATUS		% POWER		OTHER STATUS		METHOD OF DISCOVERY		DISCOVERY DESCRIPTION	
1	5	H		NA	B	Annual Surveillance Test			
7	8	9	10	11	12	13	14	15	16
ACTIVITY CONTENT		RELEASED OF RELEASE		AMOUNT OF ACTIVITY		LOCATION OF RELEASE			
1	5	Z		NA					
7	8	9	10	11	12	13	14	15	16
PERSONNEL EXPOSURES		NUMBER		TYPE		DESCRIPTION			
1	7	0	0	Z		NA			
7	8	9	10	11	12	13	14	15	16
PERSONNEL INJURIES		NUMBER		DESCRIPTION					
1	4	0	0			NA			
7	8	9	10	11	12	13	14	15	16
LOSS OF OR DAMAGE TO FACILITY		TYPE		DESCRIPTION					
1	9	Z				NA			
7	8	9	10	11	12	13	14	15	16
PUBLICITY		ISSUED		DESCRIPTION		NRC USE ONLY			
2	0	N				8105110242			
7	8	9	10	11	12	13	14	15	16

NAME OF PREPARER D. W. Tooker

PHONE: 319-851-5611

DUANE ARNOLD ENERGY CENTER
Iowa Electric Light and Power Company
Licensee Event Report - Supplemental Data
Docket No. 050-0331

Licensee Event Report Date: May 5, 1981

Reportable Occurrence No: 81-016

Event Description

During the annual inspection of standby diesel generator 1G-31, the lower crankshaft thrust #13 bearing and adjacent main bearing #12 were found wiped on the journal surface. The #13 bearing was also found to have a small crack from the main oil supply hole (located in the center of the journal surface) across the journal surface (approximately 2 inches) to the thrust surface. The depth of the crack in the #13 bearing extended from the journal surface down to the oil supply port to the thrust surface (approximately 3/8 inches). The redundant standby diesel generator 1G-21 annual inspection revealed similar problems (See RO Report 81-015). Although both diesel generators were operable at the time of the surveillance testing, extended operation without corrective action, could have resulted in bearing failure. Standby diesel generator operability requirements are listed in Technical Specification 3.8.A.2. There have been several similar RO Reports previously submitted (See RO Reports 77-32, 78-20, 80-11, and 80-12). This unit is a Fairbanks Morse Model 3800TD 8-1/8.

Cause Description

Vendor representative indicated that the diesel generator bearings had not failed and both bearing's clearances were within specs. The wiped journal surface of the bearings was caused by high temperature rather than by a mechanical failure mechanism according to the vendor representative. It is suspected this is an indication that an insufficient lubrication problem exists. The cause of the crack in the lower crankshaft thrust #13 bearings is unknown. The vendor analysis continues and the results will be provided when available.

Corrective Action

The lower crankshaft thrust #13 bearing and adjacent main bearing #12 were replaced and the bearing-to-crankshaft clearances were verified to be in accordance with specifications. The crankshaft was relapped and the diesel generator was reassembled and tested satisfactorily.

Anticipating that the bearing may have been wiped due to insufficient lubrication, a test will be performed to determine the time from prelubricating pump start for the oil to reach the main crankshaft bearings and the standby diesel generator surveillance test procedures will be changed accordingly. The results of this test will be provided along with the results of the vendor analysis.

Also the condition of the lower crankshaft #12, #13, and #14 bearings will be inspected four months after startup from the current refueling outage and after each standby diesel generator automatic start.