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 FACIL: 50-331 Duane Arnold Energy Center, Iowa Electric Light & Pow 05000331  
 AUTH. NAME: RAGER, M.S. AUTHOR AFFILIATION: Iowa Electric Light & Power Co.  
 RECIP. NAME: REGION 3, Chicago, Office of the Director

SUBJECT: Updated LER 80-011/01X-1: on 800317, lower crankshaft main thrust bearing found wiped on thrust & journal surfaces during annual insp of standby diesel generator 1G-21. Caused by startups w/low oil in lube oil sump. Bearing replaced.

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Iowa Electric Light and Power Company

April 24, 1981  
DAEC-81-261

Mr. James G. Keppler, Director  
Office of Inspection and Enforcement  
U. S. Nuclear Regulatory Commission - Region III  
799 Roosevelt Road  
Glen Ellyn, IL 60137

Subject: Licensee Event Report No. 80-011 UPDATE REPORT  
(14 day) Previous Report  
Date 3-31-80  
File: A-118a

Dear Mr. Keppler:

In accordance with Appendix A to Operating License DPR-49, Technical Specifications and Bases for Duane Arnold Energy Center and Regulatory Guide 10.1, please find attached a copy of the subject Licensee Event Report. (Total of 3 copies transmitted).

Very truly yours,



Daniel L. Mineck  
Chief Engineer  
Duane Arnold Energy Center

Docket 50-331

attachment

DLM/MSR/pl

cc: Director, Office of Inspection and Enforcement (40)  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

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NRC Resident Inspector - DAEC

APR 29 1981

LICENSEE EVENT REPORT

DATE REPORT:  
Previous Report Date 3-31-80

CONTROL BLOCK: \_\_\_\_\_ ①

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

01	I	A	D	A	C	1	2	0	0	-	0	0	0	0	0	0	-	0	0	3	4	1	1	1	1	1	1	1	4	5
LICENSEE CODE													LICENSE NUMBER							LICENSE TYPE							CAT 98			

01	R	L	6	0	5	0	0	0	3	3	1	7	0	3	1	7	8	0	3	0	4	2	4	8	1	9
CON'T			REPORT SOURCE		DOCKET NUMBER										EVENT DATE				REPORT DATE							

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES ⑩

02 | During the annual inspection of standby diesel generator 1G-21, the low  
 03 | er crankshaft main thrust bearing was found wiped on both the thrust and  
 04 | journal surfaces. Investigation revealed that the lube oil level was low.  
 05 | Level was maintained in accordance with vendor manual. Redundant standby  
 06 | diesel 1G-31 inspection revealed similar problems (See RO 80-012). Diese  
 07 | l generator operability requirements are given in T.S. 3.8.A.2. Two simi  
 08 | lar RO Reports have been previously submitted (RO 77-32 and 78-20)

09	F	F	11	B	12	A	13	F	N	G	I	N	F	14	Z	15	Z	16	17	18	0	1	1	X	32	1					
SYSTEM CODE			CAUSE CODE		CAUSE SUBCODE			COMPONENT CODE							COMP. SUBCODE		VALVE SUBCODE		LER/RO REPORT NUMBER		EVENT YEAR		SEQUENTIAL REPORT NO.			OCCURRENCE CODE		REPORT TYPE		REVISION NO.	
ACTION TAKEN		FUTURE ACTION		EFFECT ON PLANT		SHUTDOWN METHOD		HOURS				ATTACHMENT SUBMITTED		NPRO-4 FORM SUB.		PRIME COMP. SUPPLIER		COMPONENT MANUFACTURER													
A		X		Z		Z		0000				Y		N		A		C470													

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS ⑳

10 | Vendor Rep. indicated bearing had not failed and bearing clearances were  
 11 | within spec. Vendor analysis found that start-ups with insufficient oil  
 12 | in lube oil sump resulted in bearing surfaces being wiped. Dipstick mark  
 13 | ings changed to prevent recurrence. Bearing replaced, crankshaft relappe  
 14 | d, gen tested sat. New invest. reqd due to problems found in 81 refuel.

15	H	28	0	0	0	29	NA	30	B	31	Annual Surveillance Test	32				
FACILITY STATUS		% POWER					OTHER STATUS			METHOD OF DISCOVERY				DISCOVERY DESCRIPTION		
16	Z	33	Z	34	NA	35	NA	36	NA	36	NA					
ACTIVITY CONTENT		RELEASED OF RELEASE					AMOUNT OF ACTIVITY					LOCATION OF RELEASE				
17	0	0	0	37	Z	38	NA	39	NA							
PERSONNEL EXPOSURES NUMBER		TYPE		DESCRIPTION												
18	0	0	0	40	NA	41	NA									
PERSONNEL INJURIES NUMBER		DESCRIPTION														
19	Z	42	NA	43	NA											
LOSS OF OR DAMAGE TO FACILITY TYPE		DESCRIPTION														
20	N	44	NA	45	NA											
PUBLICITY ISSUED		DESCRIPTION					NRC USE ONLY									

DUANE ARNOLD ENERGY CENTER

Iowa Electric Light and Power Company

LICENSEE EVENT REPORT-Supplemental Data

Docket No. 050-0331

Licensee Event Update Report Date: April 24, 1981

Reportable Occurrence No: 80-011 UPDATE REPORT: Previous  
Report Date 3-31-80

Event Description

During the annual inspection of standby diesel generator 1G-21, the lower crankshaft main bearing (#12) was found wiped and thrust bearing (#13) was found wiped on both the journal and thrust surfaces. Further investigation revealed that the lube oil sump level was low which likely caused insufficient bearing lubrication. Redundant standby diesel generator 1G-31 annual inspection revealed similar problems (See RO Report 80-012). Although both diesel generators were operable at the time of the surveillance testing, extended operation, without corrective action, could have resulted in the bearing failure. Standby diesel generator operability requirements are listed in Technical Specification 3.8.A.2. There have been two similar RO reports previously submitted (See RO 77-32 and 78-20). This unit is a Fairbanks Morse Model 3800TD 8-1/8.

Cause Description

Vendor representative indicated that the diesel generator bearing had not failed and the bearing clearances were within specifications. A subsequent vendor analysis determined that engine start-ups with insufficient oil in the lube oil sump resulted in both surfaces of the bearing being wiped. The diesel generator lube oil sump level had been maintained in accordance with the manufacturer technical manual. To preclude improper sump fill in the future, the "full" mark on the sump dipstick was relabeled "running" full and a new higher "shutdown" full level mark was added to the dipstick.

Corrective Action

The main (#12) bearing and thrust (#13) bearing were completely replaced, the lower half of #14 bearing was replaced, and the bearing-to-crankshaft clearance was verified to be in accordance with specifications. The #14 bearing was replaced for alignment reasons. The crankshaft was relapped and the diesel generator was reassembled and tested satisfactorily.

The lube oil sump dipstick was relabeled to clarify the "full" sump level. Oil was added to fill the sump. Operating procedure was changed to reflect the new dipstick markings.

Additional engineering investigation work is planned since a similar wiped bearing problem was discovered while performing the annual inspection of diesel generator 1G-21 during the 1981 Refueling Outage.



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