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 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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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.