

50-331

NRC DISTRIBUTION FOR PART 50 DOCKET MATERIAL

FILE NUMBER

INCIDENT REPORT

TO: Mr. James G. Keppler

FROM: Iowa Electric Light & Power
Co.
Cedar Rapids, Iowa 52406
Ellery L. HammondDATE OF DOCUMENT
05-13-77DATE RECEIVED
05-19-77☒ LETTER
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☒ COPY☐ NOTORIZED
☒ UNCLASSIFIED

PROP

INPUT FORM

NUMBER OF COPIES RECEIVED

100

DESCRIPTION

(1 page)

ACKNOWLEDGED

PLANT NAME: DUANE ARNOLD

JCM

DO NOT REMOVE

ENCLOSURE

Update Licensee Event Report (R0-50-331/76-05) on 01-14-76 concerning RCIC M02516 was discovered to be separated from the motor operator due to broken bolts from metal fatigue induced by vibrational tensile loads resulting from under-torquing during installation of motor operator or valve....

(2 pages.)

(30 cgs rec'd)

NOTE: IF PERSONNEL EXPOSURE IS INVOLVED
SEND DIRECTLY TO KREGER/J. COLLINS

FOR ACTION/INFORMATION

BRANCH CHIEF:

W/3 CYS FOR ACTION

LIC. ASST.:

W/1 CYS

ACRS /6 CYS HOLDING/SENT

Lea

Parrish

ASCAT B

INTERNAL DISTRIBUTION

~~REG FILE~~

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EISENHUT

BAER

SHAO

VOLLMER/BUNGH

KREGER/J. COLLINS

EXTERNAL DISTRIBUTION

LPDR: Cedar Rapids, Ia

TIC:

NSIC:

CONTROL NUMBER

771410014

A04

(A)

IOWA ELECTRIC LIGHT AND POWER COMPANY

DUANE ARNOLD ENERGY CENTER
P. O. Box 351
Cedar Rapids, Iowa 52406

May 13, 1977
DAEC-77- 267

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

50-331



Subject: Licensee Event Report No. UPDATE REPORT - Previous
(30 day) Report Date 021176

File: A-118a

RO 76-05

REGULATORY DOCKET FILE COPY

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,

Ellery L. Hammond

Ellery L. Hammond
Chief Engineer
Duane Arnold Energy Center

Docket 50-331

attachment

ELH/DLW/mg

cc: Director, Office of Inspection and Enforcement (30)
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Director, Management Information and Program Control (3)
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

771410014

DUANE ARNOLD ENERGY CENTER

Iowa Electric Light and Power Company

LICENSEE EVENT REPORT-Supplemental Data

Licensee Event Report Date: 011476

Reportable Occurrence No: UPDATE REPORT - Previous Report Date 021176

RO 76-05

Description of Occurrence

During a routine plant inspection, the motor operator for RCIC suppression pool suction valve MOV2516 was found to be separated from the valve body. The socket head cap screws which secured the motor operator to the valve yoke had fractured and the valve operator had moved up the worm gear. The bolts were replaced and the valve was returned to operation approximately four hours later.

Cause of Occurrence

A metallurgical analysis of the broken cap screws determined that the probable failure mode was metal fatigue induced by vibrational tensile loading. The motor operator mounting bolts apparently were under-torqued during installation of the valve and this condition could have led to tensile impact loading with resultant fatigue failure.

Corrective Action

The four socket head cap screws on MOV 2516 were replaced with screws of equivalent specification and were torqued in accordance with vendor recommendations.

In addition, a special inspection program was initiated to verify that the motor operator mounting bolts for all safety related valves were torqued in accordance with vendor recommendations. The program involved determination of as-found torque values and retorquing as appropriate.

During the 1978 refuel outage, a sample of safety related valves will be selected for inspection to determine if there is time dependent variation in the torque values for motor operator mounting bolts. The valves to be inspected will be determined by the Licensee's Engineering Department. Additional corrective action will be initiated at that time if appropriate.

Analysis of Occurrence

The normal suction for the RCIC system is from the condensate storage tanks and the alternate suction is from the suppression pool. Since MOV 2516 is located in the suppression pool suction, the failure of the valve to open would not have prevented operation of the RCIC system.

LICENSEE EVENT REPORT

Previous Report Date
021176

CONTROL BLOCK:

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(PLEASE PRINT ALL REQUIRED INFORMATION)

LICENSEE NAME 01 I A D A C 1														LICENSE NUMBER 0 0 - 0 0 0 0 0 - 0 0										LICENSE TYPE 4 1 1 1 1					EVENT TYPE 0 3	
7	8	9	14	15	25	26	30	31	32																					
01 CONT			CATEGORY 57 58		REPORT TYPE 59		REPORT SOURCE 60		DOCKET NUMBER 0 5 0 - 0 3 3 1					EVENT DATE 0 1 1 4 7 6					REPORT DATE 0 5 1 2 7 7											
7	8	57	58	59	60	61	68	69	74	75	80																			

EVENT DESCRIPTION

02 During normal operation, RCIC M02516 was discovered to be separated														80
03 from the motor operator due to broken bolts. RCIC operability unaf														80
04 fected since normal flow path available from CST. Mounting bolts re														80
05 placed and retorqued within 4 hours. All safety related valve moto														80
06 r operators in plant checked for proper torque on mounting bolts.														80

SYSTEM CODE 07 C C		CAUSE CODE 11 A		COMPONENT CODE 12 V A L V O P				PRIME COMPONENT SUPPLIER 43 A		COMPONENT MANUFACTURER 44 A 3 9 5			VIOLATION 48 N	
7	8	9	10	11	12	17	43	44	47	48				

CAUSE DESCRIPTION

08 Bolt failure due to metal fatigue induced by vibrational tensile														80
09 loads resulting from under-torqueing during installation of motor														80
10 operator on valve.														80

FACILITY STATUS 11 E		% POWER 10 0 8 3		OTHER STATUS 13 NA				METHOD OF DISCOVERY 44 B		DISCOVERY DESCRIPTION 46 NA			
7	8	9	10	12	13	44	45	46					

FORM OF ACTIVITY RELEASED 12 Z		CONTENT OF RELEASE 10 Z		AMOUNT OF ACTIVITY 11 NA				LOCATION OF RELEASE 45 NA			
7	8	9	10	11	44	45	80				

PERSONNEL EXPOSURES

NUMBER 13 0 0 0		TYPE 12 Z		DESCRIPTION 13 NA			
7	8	9	11	12	13	80	

PERSONNEL INJURIES

NUMBER 14 0 0 0		DESCRIPTION 12 NA			
7	8	9	11	12	80

OFFSITE CONSEQUENCES

15 NA						80
7	8	9				

LOSS OR DAMAGE TO FACILITY

TYPE 16 Z		DESCRIPTION 10 NA			
7	8	9	10	80	

PUBLICITY

17 NA						80
7	8	9				

ADDITIONAL FACTORS

18 Event Desc. Cont. - Sample of valves to be inspected during next														80
19 refuel for proper mounting bolt torque. (RO 76-05)														80

NAME: D. Wilson PHONE: 319-851-5611