

50-331

NRC DISTRIBUTION FOR PART 50 DOCKET MATERIAL

FILE NUMBER

INCIDENT REPORT

TO:

Mr. James G. Keppler

FROM:

Iowa Elec. Light & Power Company
Cedar Rapids, Iowa
Ellery L. Hammond

DATE OF DOCUMENT

5/13/77

DATE RECEIVED

6/8/77

☒ LETTER☐ NOTORIZED

PROP

INPUT FORM

☒ ORIGINAL
☐ COPY☒ UNCLASSIFIED

NUMBER OF COPIES RECEIVED

1 SIGNED

DESCRIPTION

ACKNOWLEDGED

DO NOT REMOVE

PLANT NAME:

(1-P)

Duane Arnold

RJL

ENCLOSURE

Licensee Event Report (RQ 50-331/76-05) on
1/14/77 (update report) concerning RCIC MO
2516 being discovered to be separated from
the motor operator due to broken bolts....

(2-P)

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

FOR ACTION/INFORMATION

BRANCH CHIEF:

LEAR

W/3 CYS FOR ACTION

LIC. ASST.:

PARRIS/1

W/1 CYS

ACRS 16 CYS HOLDING/SENT

AS CAT B

INTERNAL DISTRIBUTION

REG FILE

NRC PDR

I & E (2)

MIPC

SCHROEDER/IPPOLITO

HOUSTON

NOVAK/CHECK

GRIMES

BUTLER

HANAUER

TEDESCO/MACCARY

EISENHUT

BAER

SHAO

VOLLMER/BUNCH

KREGER/J. COLLINS

EXTERNAL DISTRIBUTION

LPDR: CEDAR RAPIDS 1A

TIC:

NSIC:

CONTROL NUMBER

771590245

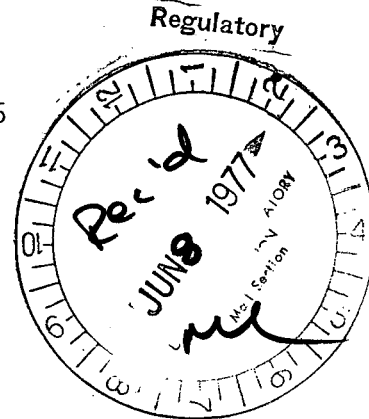
As 4

60

D. L. Larkin

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

Subject: Licensee Event Report No. UPDATE REPORT - Previous
(30 day) Report Date 021176
RO 76-05.

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,

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

RECEIVED DOCUMENT
MAY 19 1977

771590245

LICENSEE EVENT REPORT

UPDATE REPORT
Previous Report Date
021176

CONTROL BLOCK: 1 2 3 4 5 6

[PLEASE PRINT ALL REQUIRED INFORMATION]

LICENSEE NAME														LICENSE NUMBER														LICENSE TYPE										EVENT TYPE									
01 I A D A C 1														0 0 - 0 0 0 0 0 - 0 0														4 1 1 1 1										0 3									
7 8 9 14														15 25														26 30										31 32									

CATEGORY										REPORT TYPE										REPORT SOURCE										DOCKET NUMBER										EVENT DATE										REPORT DATE									
01 CONT										L										L										0 5 0 - 0 3 3 1										0 1 1 4 7 6										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										CAUSE CODE										COMPONENT CODE										PRIME COMPONENT SUPPLIER										COMPONENT MANUFACTURER										VIOLATION									
07 C E										A										V A L V O P										A										A 3 9 5										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										% POWER										OTHER STATUS										METHOD OF DISCOVERY										DISCOVERY DESCRIPTION									
11 E										0 8 3										NA										B										NA									
7 8 9										10 12 13										44										45 46										80									

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

PERSONNEL EXPOSURES

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

PERSONNEL INJURIES

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

OFFSITE CONSEQUENCES

15 NA																																																																																80
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LOSS OR DAMAGE TO FACILITY

TYPE										DESCRIPTION									
16 Z										NA									
7 8 9 10										80									

PUBLICITY

17 NA																																																																																80
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ADDITIONAL FACTORS

18 Event Desc. Cont. - Sample of valves to be inspected during next																																																																																80
19 refuel for proper mounting bolt torque. (R076-05)																																																																																80

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

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.

RECEIVED DOCUMENT
PROCESSING UNIT

1977 JUN 7 AM 10 37