

50-331

NRC DISTRIBUTION FOR PART 50 DOCKET MATERIAL

FILE NUMBER
INCIDENT REPORT

TO:
Mr. James G. Keppler

FROM:
Iowa Electric Light & Pwr. Company
Cedar Rapids, Iowa
Ellery L. Hammond

DATE OF DOCUMENT
5/13/77

DATE RECEIVED
5/20/77

LETTER
 NOTORIZED
 UNCLASSIFIED

PROP

INPUT FORM

NUMBER OF COPIES RECEIVED
100

DESCRIPTION

PLANT NAME:
Duane Arnold
RJL

**ACKNOWLEDGED
DO NOT REMOVE**

ENCLOSURE

Licensee Event Report (RO 50-331/76-05) on 1/14/77 (update report) concerning RCIC M02516 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.:	PARRISH
W/ 1 CYS	B
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 14	
TIC:	
NSIC:	

CONTROL NUMBER

771450073

A04

60

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,

A handwritten signature in cursive script that reads "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

771450073

LICENSEE EVENT REPORT

UPDATE REPORT
Previous Report Date
021176

CONTROL BLOCK:

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1 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	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	CON'T	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-torquing 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. (RO 76-05)																							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.