

A 03/07/78

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)  
DISTRIBUTION FOR INCOMING MATERIAL 50-331

REC: KEPPLER J G  
NRC

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IA ELEC LIGHT & PWR

DOCDATE: 03/01/78  
DATE RCVD: 03/07/78

DOCTYPE: LETTER NOTARIZED: NO  
SUBJECT:

COPIES RECEIVED  
LTR 1 ENCL 1

LICENSEE EVENT REPT (RD 50-331/78-011) ON 02/15/78 CONCERNING  
ELEVEN RECIRCULATION LOOP PIPE WHIP RESTRAINTS DO NOT MEET LIC  
DESIGN CRITERIA DUE TO CALCULATIONAL INACCURACIES IN PREDICTED  
PERFORMANCE CHARACTERISTICS.

PLANT NAME: DUANE ARNOLD

REVIEWER INITIAL: XJM  
DISTRIBUTOR INITIAL: *ML*

\*\*\*\*\* DISTRIBUTION OF THIS MATERIAL IS AS FOLLOWS \*\*\*\*\*

INCIDENT REPORTS  
(DISTRIBUTION CODE A002)

FOR ACTION: ~~BR CHIEF LEARN\*\*W/4 ENCL~~

INTERNAL:

REG FILE\*\*W/ENCL  
~~T & E\*\*W/2 ENCL~~  
SCHROEDER/IPPOLITO\*\*W/ENCL  
NOVAK/CHECK\*\*W/ENCL  
KNIGHT\*\*W/ENCL  
HANAUER\*\*W/ENCL  
EISENHUT\*\*W/ENCL  
SHAO\*\*W/ENCL  
KREGER/J. COLLINS\*\*W/ENCL  
K SEYFRIT/IE\*\*W/ENCL

NRC PDR\*\*W/ENCL  
MIPC\*\*W/3 ENCL  
HOUSTON\*\*W/ENCL  
GRIMES\*\*W/ENCL  
BUTLER\*\*W/ENCL  
TEDESCO\*\*W/ENCL  
BAER\*\*W/ENCL  
VOLLMER/BUNCH\*\*W/ENCL  
ROSA\*\*W/ENCL

EXTERNAL:

LPDR'S  
CEDAR RAPIDS, IA\*\*W/ENCL  
TIC\*\*W/ENCL  
NSIC\*\*W/ENCL  
ACRS CAT B\*\*W/16 ENCL

DISTRIBUTION: LTR 45 ENCL 45  
SIZE: 1P+1P+1P

CONTROL NBR: 780680040

\*\*\*\*\* THE END \*\*\*\*\* *6D As 4*

# IOWA ELECTRIC LIGHT AND POWER COMPANY

DUANE ARNOLD ENERGY CENTER  
P. O. Box 351  
Cedar Rapids, Iowa 52406  
March 1, 1978  
DAEC - 78 - 136

50-331



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. 78-011  
(14 day)

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/JVS/nf

cc: Director, Office of Inspection and Enforcement (40)  
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

780680040

A002  
S  
111

## LICENSEE EVENT REPORT

CONTROL BLOCK:

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

01 I A D A C 1 000-00000000-000 34111111 4 5  
7 8 9 14 15 25 26 30 57 CAT 58

CON'T

01 REPORT SOURCE L 05000331 70211578 8030178 9  
7 8 60 61 68 69 74 75 80

## EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

02 During a design review it was determined that eleven recirculation loop  
03 pipe whip restraints do not meet license design criteria. The review was  
04 conducted by the NSSS vendor using refined testing techniques to compar  
05 e actual restraint performance with original design predicted characteri  
06 stics. The purpose of the restraints is to prevent excessive pipe moveme  
07 nt which could cause damage to the primary containment or damage to adja  
08 cent pipe which if ruptured, would exceed the DBA break area.  
7 8 9 80

09 SYSTEM CODE C B 11 CAUSE CODE B 12 CAUSE SUBCODE A 13 COMPONENT CODE S U P P O R T 14  
7 8 9 10 11 12 13 18 19 20 15 16  
17 LER/RO REPORT NUMBER 78 21 22 23 24 26 27 28 29 30 31 32 33 34 35 36 37 40 41 42 43 44 47  
18 F 19 Z 20 Z 21 0000 22 01 23 T 24 N 25 N 26 G 0 8 0  
ACTION TAKEN FUTURE ACTION EFFECT ON PLANT SHUTDOWN METHOD HOURS ATTACHMENT SUBMITTED NPD-4 FORM SUB. PRIME COMP. SUPPLIER COMPONENT MANUFACTURER

## CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

10 The recirculation loop pipe whip restraints as designed and built did no  
11 t meet license design criteria due to calculational inaccuracies in pred  
12 icted performance characteristics. New whip restraints are currently bei  
13 ng designed and fabricated based on the most recent calculations. Plans  
14 are to install the new restraints during the 1978 refueling outage.  
7 8 9 80

15 FACILITY STATUS E 28 % POWER 096 29 NA OTHER STATUS 30 METHOD OF DISCOVERY C 31 DISCOVERY DESCRIPTION Special Design Review 32  
7 8 9 10 12 13 44 45 46 80  
16 ACTIVITY CONTENT Z 33 Z 34 NA AMOUNT OF ACTIVITY 35 LOCATION OF RELEASE 36  
7 8 9 10 11 44 45 80

17 PERSONNEL EXPOSURES NUMBER 000 37 TYPE Z 38 DESCRIPTION NA 39  
7 8 9 10 11 12 13 80

18 PERSONNEL INJURIES NUMBER 000 40 DESCRIPTION NA 41  
7 8 9 10 11 12 80

19 LOSS OF OR DAMAGE TO FACILITY TYPE Z 42 DESCRIPTION NA 43  
7 8 9 10 80

20 PUBLICITY ISSUED N 44 DESCRIPTION NA 45  
7 8 9 10 80

NRC USE ONLY

NAME OF PREPARER J. Van Sickle

PHONE: 319-851-5611

DUANE ARNOLD ENERGY CENTER

Iowa Electric Light and Power Company

LICENSEE EVENT REPORT-Supplemental Data

Docket Number 050-0331

Licensee Event Report Date: March 1, 1978

Reportable Occurrence No: LER 78-011

Event Description

During a design review it was determined that eleven recirculation loop pipe whip restraints do not meet license design criteria. The review was conducted by the NSSS vendor using refined testing techniques to compare actual restraint performance with original design predicted characteristics. The purpose of the restraints is to prevent excessive pipe movement which could cause damage to the primary containment or damage to adjacent pipe which, if ruptured, would exceed the DBA break area.

Cause Description

The recirculation loop pipe whip restraints as designed and built did not meet license design criteria due to calculational inaccuracies in predicted performance characteristics. The new design calculations were made using technologies and advanced testing methods which were not available when the original designs were formulated.

Corrective Action

New whip restraints are currently being designed and fabricated based on the most recent calculations. Plans are to install the new restraints during the 1978 refueling outage.