

Aug 124/78

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)  
DISTRIBUTION FOR INCOMING MATERIAL

50-331

REC: KEPPLER J G  
NRC

ORG: HAMMOND E L  
IA ELEC LIGHT & PWR

DOCDATE: 07/21/78  
DATE RCVD: 07/26/78

DOCTYPE: LETTER NOTARIZED: NO  
SUBJECT:

COPIES RECEIVED  
LTR 1 ENCL 1

FORWARDING UPDATED LICENSEE EVENT REPT (RO 50-331/77-096) ON 12/27/77  
CONCERNING DURING SPECIAL OPERABILITY TESTING, THE HPCI SYSTEM DID NOT REACH  
THE REQUIRED DISCHARGE FLOW RATE OF 3000 GPM, CAUSED BY IMPROPER ADJUSTMENT  
OF TWO THROTTLE SCREWS ON STOP VALVE BONNET

PLANT NAME: DUANE ARNOLD

REVIEWER INITIAL: XJM  
DISTRIBUTOR INITIAL: *m*

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

INCIDENT REPORTS  
(DISTRIBUTION CODE A002)

FOR ACTION: BR CHIEF ORB#3 BC\*\*W/4 ENCL

INTERNAL:

REG FILE\*\*W/ENCL  
I & E\*\*W/2 ENCL  
I & C SYSTEMS BR\*\*W/ENCL  
NOVAK/CHECK\*\*W/ENCL  
AD FOR ENG\*\*W/ENCL  
HANAUER\*\*W/ENCL  
AD FOR SYS & PROJ\*\*W/ENCL  
ENGINEERING BR\*\*W/ENCL  
KREGER/J. COLLINS\*\*W/ENCL  
K SEYFRIT/IE\*\*W/ENCL

NRC PDR\*\*W/ENCL  
MIPC\*\*W/3 ENCL  
EMERGENCY PLAN BR\*\*W/ENCL  
EEB\*\*W/ENCL  
PLANT SYSTEMS BR\*\*W/ENCL  
AD FOR PLANT SYSTEMS\*\*W/ENCL  
REACTOR SAFETY BR\*\*W/ENCL  
VOLLMER/BUNCH\*\*W/ENCL  
POWER SYS BR\*\*W/ENCL

EXTERNAL:

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

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

CONTROL NBR: 782010123

\*\*\*\*\* THE END \*\*\*\*\*

AD 960

# IOWA ELECTRIC LIGHT AND POWER COMPANY

DUANE ARNOLD ENERGY CENTER

P. O. Box 351

Cedar Rapids, Iowa 52406

July 21, 1978

DAEC - 78 - 351

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. 77-96 Updated Report  
(14 day) Previous Report Date 010978

File: A-118a

Dear Mr. Keppler:

In accordance with Appendix A to Operating License DFR-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

REGULATORY DOCKET FILE COPY

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

782010123

A002  
5/11

## LICENSEE EVENT REPORT

U. S. NUCLEAR REGULATORY COMMISSION

CONTROL BLOCK: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

CON'T  
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 1 During special operability testing the HPCI system did not reach the r  
0 3 2 required discharge flow rate of 3000 GPM. During subsequent start attempt  
0 4 3 ts the system reached the required flow rate. The HPCI system was dec  
0 5 4 lared inoperable and the redundant ECCS's demonstrated to be operable.  
0 6 5 Flow rate requirement listed in Tech Spec 4.5.D.1. Repetitive occurrence  
0 7 6 e (see RO's 77-77 and 77-95).  
0 8 7  
0 9 8  
1 0 9SYSTEM CODE CAUSE CODE CAUSE SUBCODE COMPONENT CODE COMP. SUBCODE VALVE SUBCODE  
0 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80LER/RO  
REPORT  
NUMBEREVENT YEAR  
7 7ACTION  
TAKENFUTURE  
ACTIONEFFECT  
ON PLANTSHUTDOWN  
METHOD

HOURS

ATTACHMENT  
SUBMITTEDNPRD-4  
FORM SUB.PRIME COMP.  
SUPPLIERCOMPONENT  
MANUFACTURERREVISION  
NO.

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CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 1 Improper adjustment of two throttle screws on the stop valve bonnet caus  
1 1 2 ed the balancing chamber pressure to exceed manufacturer's recommendatio  
1 2 3 n. Higher balancing chamber pressure made hydraulic cylinder pressure in  
1 3 4 adequate for positioning valve disc. Throttle screws were adjusted to br  
1 4 5 ing balancing chamber pressure within manufacturer's recommendation.  
1 5 6  
1 6 7  
1 7 8  
1 8 9  
1 9 0FACILITY STATUS % POWER OTHER STATUS (30) METHOD OF DISCOVERY DISCOVERY DESCRIPTION (32)  
1 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80ACTIVITY CONTENT RELEASED OF RELEASE AMOUNT OF ACTIVITY (35) LOCATION OF RELEASE (36)  
1 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80PERSONNEL EXPOSURES NUMBER TYPE DESCRIPTION (39)  
1 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80PERSONNEL INJURIES NUMBER DESCRIPTION (41)  
1 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80LOSS OF OR DAMAGE TO FACILITY TYPE DESCRIPTION (43)  
1 9 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80PUBLICITY ISSUED DESCRIPTION (45)  
2 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 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: 072178

Reportable Occurrence No: 77-096

Event Description:

During surveillance testing of the HPCI system, the HPCI pump did not reach the required discharge flow rate (3000 gpm) due to failure of the turbine to reach full rated speed. The HPCI system was declared inoperable and redundant emergency core cooling systems were demonstrated to be operable. This occurrence was repetitive (see RO 77-95 and 78-25).

Cause of Occurrence:

The occurrence was caused by improper adjustment of two throttle screws on the turbine stop valve which caused the balancing chamber pressure to exceed the manufacturer's recommendation. The turbine stop valve, which is a Schutte and Koerting inverted oil type, is designed to utilize steam pressure in a balancing chamber for assisting in closing and tightly seating the valve disc. For opening, the valve is equipped with an internal pilot valve which opens in the first  $\frac{1}{4}$ " of valve stem travel to exhaust steam from the balancing chamber through the valve disc to the outlet side of the valve. By controlling steam flow into the balancing chamber and through the pilot unit, a controlled pressure differential is established across the valve disc enabling it to be opened easily by the hydraulic cylinder. Two throttle screws in the valve bonnet control the steam flow into the balancing chamber thereby establishing the pressure differential across the valve disc. Improper throttle screw adjustment had the balancing chamber pressure making the hydraulic system pressure inadequate for fully opening the valve.

Corrective Action:

The throttle screws were adjusted so that the balancing chamber pressure equalled manufacturer's recommended pressure (10% of inlet steam pressure). The HPCI turbine was then successfully tested and returned to service.