REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8708130216 DOC. DATE: 87/08/10 NOTARIZED: NO DOCKET #
FACIL: 50-331 Duane Arnold Energy Center, Iowa Electric Light & Pow 05000331
AUTH. NAME AUTHOR AFFILIATION
THOMAS, B. N. Iowa Electric Light & Power Co.
HANNEN, R. L. Iowa Electric Light & Power Co.
RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 87-022-00: on 870711, half Group I isolation occurred during venting of main turbine electrohydraulic control (ECH) piping. Caused by lack of procedural guidance to alert operators. Operating instruction revised. W/870810 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 3
TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	PD3-1 LA	1	1	PD3-1 PD	1	1
	CAPPUCCI, A	1	1			
INTERNAL:	ACRS MICHELSON	1	1	ACRS MOELLER	2	2
	AEOD/DOA	1	1	AEOD/DSP/NAS	1	1
	AEOD/DSP/ROAB	2	2	AEOD/DSP/TPAB	1	1
	DEDRO	1	1	NRR/DEST/ADE	1	0
	NRR/DEST/ADS	1	0	NRR/DEST/CEB	1	1
	NRR/DEST/ELB	1	1	NRR/DEST/ICSB	1	1
	NRR/DEST/MEB	1	1	NRR/DEST/MTB	1	1
	NRR/DEST/PSB	1	1	NRR/DEST/RSB	1	1
	NRR/DEST/SGB	1	1	NRR/DLPQ/HFB	1	1
	NRR/DLPQ/QAB	1	1	NRR/DOEA/EAB	1	1
	NRR/DREP/RAB	1	1	NRR/DREP/RPB	2	2
	NRR/PMAS/ILRB	1	1	REG FILE 02	1	1
	RES DEPY GI	1	1	RES TELFORD, J	1	1
	RES/DE/EIB	1	1	RGN3 FILE 01	1	1
EXTERNAL:	EG&G GROH, M	5	5	H ST LOBBY WARD	1	1
	LPDR	1	1	NRC PDR	1	1
	NSIC HARRIS, J	1	1	NSIC MAYS, G	1	1

TOTAL NUMBER OF COPIES REQUIRED: LTTR 44 ENCL 42

NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Duane Arnold Energy Center (DAEC)	0 5 0 0 0 3 3 1	1 OF 0 2

TITLE (4)

Half Group I Isolation During Electrohydraulic Control System Venting

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
0 7	1 1	8 7	8 7	0 2 2	0 0	0 8	1 0	8 7	None	0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
N		20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)	0 0 0	20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
Bradford N. Thomas, Technical Support Engineer	3 1 9 8 5 1 - 7 3 0 9

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS	

SUPPLEMENTAL REPORT EXPECTED (14)

		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On July 11, 1987 with the plant in hot standby, a 1/2 Group I isolation occurred during venting of the Main Turbine Electrohydraulic Control (EHC) Piping. The EHC piping was being vented following repairs to pin-hole leaks which were discovered during reactor startup earlier in the day. During venting of the EHC piping, three of the four Turbine Stop Valves lifted off their seat. This removed the Main Condenser Low Vacuum Group I isolation bypass signal. This satisfied the necessary logic to close the inboard Main Steam Line drain valve, and the inboard Reactor Recirculation water sample flow control valve. All Main Steam Line Isolation Valves were closed during this event so movement of these valves did not occur.

The intermediate cause of the event was the Turbine Stop valves lifting off their seat due to air which was trapped in the EHC piping and caused a void to form.

The root cause of this event was lack of procedural guidance alerting operators to the potential of Turbine Stop valve motion during EHC system venting.

As corrective action, a note will be added to the applicable operating instruction (OI) warning personnel that during EHC system venting potential Stop Valve Cycling and subsequent Group I isolations can occur due to the loss of the main condenser low vacuum isolation bypass signal.

This event is being reported in accordance with 10 CFR 50.73 (a)(2)(iv).

IE22
1/1

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Duane Arnold Energy Center (DAEC)	0 5 0 0 0 3 3 1	8 7	— 0 2 2	— 0 0	0 2 OF 0 2

TEXT (If more space is required, use additional NRC Form 366A's) (17)

On July 11, 1987 at 0449 hours with the plant in hot standby, a 1/2 Group I isolation occurred during venting of the Main Turbine Electrohydraulic Control Piping (EHC, EIIS System TG). Venting of the EHC system piping was taking place following repairs to pin-hole leaks which were discovered during reactor startup earlier in the day. Repairs to the EHC piping required portions of the piping to be drained and isolated. Earlier in the day, the EHC piping was vented following piping repairs. During this venting sequence two of the four Turbine Stop Valves (EIIS System TA) lifted off their seat. Following this venting sequence, personnel stationed in the heater bay noticed additional EHC piping leaks. Portions of the EHC piping were again drained and isolated for repairs. Because a section of EHC piping had been vented earlier in the day and only two Stop Valves cycled, it was thought that venting the EHC piping at 0449 hours would result in little or no Stop Valve motion. However, three of the four Turbine Stop Valves lifted off their seat during this subsequent venting of EHC piping. This caused a Group I isolation signal to be generated due to the low condenser vacuum isolation signal becoming unbypassed. The Main Condenser Low Vacuum isolation signal is bypassed if the condenser low vacuum keylock switches are in the closed position, the turbine stop valves are closed, and the mode switch is not in the run position. Because three out of four stop valves opened, the necessary logic was completed to generate a half Group I isolation signal. This caused the inboard Main Steam Line drain valve (MO4423, EIIS System SB), and the inboard Reactor Recirculation water sample flow control valve (CV4639, EIIS System AD) to isolate. All Main Steam Line Isolation Valves (MSIVs) were closed during this event so movement of these valves did not occur.

The intermediate cause of the event was the Turbine Stop Valves lifting off their seat which caused the low condenser vacuum isolation signal to be unbypassed. Air trapped in the EHC piping caused a momentary void and subsequent movement of the Turbine Stop Valves. This was later confirmed as following resetting of the isolation signal several more attempts to vent the EHC piping caused no Stop Valve motion.

The root cause of this event was lack of procedural guidance alerting operators to the potential of Turbine Stop Valve motion during EHC system venting.

As corrective action, a note will be added to the applicable operating instruction (OI) warning personnel that during EHC system venting potential Stop Valve Cycling and subsequent Group I isolations can occur due to unbypassing the main condenser low vacuum isolation signal.

As all systems operated as designed during the event, the safe operation of the plant and health and safety of the public were not compromised.

This event is being reported in accordance with 10 CFR 50.73(a)(2)(iv).

Iowa Electric Light and Power Company

August 10, 1987
DAEC-87-0858

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Subject: Duane Arnold Energy Center
Docket No. 50-331
Op. License DPR-49
Licensee Event Report No. 87-022

Gentlemen:

In accordance with 10 CFR 50.73 please find attached a copy of the subject Licensee Event Report.

Very truly yours,

Rick L. Hannen
Plant Superintendent - Nuclear

RLH/BNT/go

Attachment - LER 87-022

cc: Mr. A. Bert Davis
Regional Administrator
Region III
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

NRC Resident Inspector - DAEC

File A-118a

IE22
1/1