

# REGULATOR INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: B7052B0333      DOC. DATE: 87/05/07      NOTARIZED: NO      DOCKET #  
 FACIL: 50-331 Duane Arnold Energy Center, Iowa Electric Light & Pow      05000331  
 AUTH. NAME      AUTHOR AFFILIATION  
 PROBST, J. R.      Iowa Electric Light & Power Co.  
 MINEK, D. L.      Iowa Electric Light & Power Co.  
 RECIP. NAME      RECIPIENT AFFILIATION

SUBJECT: LER S7-012-00: on 790917, river water supply pump 1P-117A  
 declared inoperable due to failure of pump motor. Possibly  
 caused by imbalances due to motor application within high  
 vibration sys. All pump motor supports modified. W/B      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 ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR 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/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/GAB	1 1
	NRR/DOEA/EAB	1 1	NRR/DREP/RAB	1 1
	NRR/DREP/RPB	2 2	NRR/PMAS/ILRB	1 1
	NRR/PMAS/PTSB	1 1	<u>REG FILE</u> 02	1 1
	RES DEPY GI	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 42 ENCL 40

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Duane Arnold Energy Center (DAEC)										DOCKET NUMBER (2) 0 5 0 0 0 3 3 1 1										PAGE (3) 1 OF 0 2																		
TITLE (4) River Water Supply Pump Motor Stator Weld Failure																																						
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 None						DOCKET NUMBER(S) 0 5 0 0 0					
0 9			1 7			7 9			8 7			0 1			2			0 0			0 5			0 7			8 7			0 5 0 0 0								
OPERATING MODE (9)		N		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)																																		
POWER LEVEL (10)		0 1 0 1 0		20.402(b)						20.405(c)						50.73(a)(2)(iv)						73.71(b)																
				20.405(a)(1)(i)						50.38(c)(1)						50.73(a)(2)(v)						73.71(c)																
				20.405(a)(1)(ii)						50.38(c)(2)						50.73(a)(2)(vii)						X 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 James R. Probst, Technical Support Engineer										TELEPHONE NUMBER AREA CODE 3 1 9 8 5 1 - 7 3 0 8																												
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																																						
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC																												
X	KII	MIO	W11	2 0	NO																																	
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)																												
YES (If yes, complete EXPECTED SUBMISSION DATE)										X NO																												

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

In September of 1979, one of the four River Water Supply Pumps, 1P-117A, was declared inoperable due to failure of the pump motor. The welds that support the stator had failed. The root cause is unknown, but the failure is believed to have occurred due to the motor's application within a high vibration system known to have imbalances. As a precaution, all of the River Water Supply Pump motor supports were modified. Efforts to reduce pump vibration are continuing.

There was no effect on the safe operation of the plant due to this single failure.

This report is being submitted for information in response to NRC concerns expressed during an April, 1987 inspection.

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PDR ADOCK 05000331  
S PDR

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## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Duane Arnold Energy Center (DAEC)	05000331	87	012	00	02	OF	02

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

In September of 1979, one of the four River Water Supply Pumps, 1P-117A, was declared inoperable due to failure of the pump motor. On September 17, 1979, inspection of the motor revealed the motor stator core had dropped from its frame and shorted to ground. The cause of the motor failure is believed to have been excessive vibration of the motor due to pump operation. The River Water Supply Pumps (EIS System Code KI) have experienced numerous problems throughout the plant history, including high vibration. Impeller erosion by river water silt often results in pump imbalances, with a detrimental effect on the pump motor. Although the root cause of the stator core failure remains unknown, it is a reasonable assumption that this motor failure was due to its application within a high vibration system known to have imbalances.

The motor for 1P-117A (KI-MO-117A-M) was identified as a Westinghouse 125 hp style 71C20297. The three other River Water Supply Pumps also used this style of motor. A Design Change Request was initiated in October 1979, to repair 1P-117A's motor and structurally enhance the stator to frame attachment to compensate for the high vibration problems. In addition, the other three River Water Supply Pumps were inspected, and each had its stator to frame attachment enhanced as well. The repair sequence was such that one pump was operable at all times for river water supply purposes.

The motor stator core was by original design supported on the frame by tack welds between the stator and frame. Inspection of these welds showed evidence of poor penetration into the frame. Following consultations with Westinghouse and with their approval, two core pins 180 degrees apart were inserted through the frame and 0.25 inches into the stator core as an additional support connection between the stator core and its frame. The work was done by a local authorized Westinghouse repair shop. This pinning was designed to provide additional support for the stator core if high vibration were to occur. These additional support pins were added to all four River Water Supply Pump motors in October 1979. Work on reducing pump vibration problems has included numerous impeller changeouts and other repairs. Replacement of the bronze impellers with cast carbon steel models to reduce erosion problems is slated to begin this summer.

There was no effect on the safe operation of the plant due to this single failure.

This report is being submitted for information in response to NRC concerns expressed during an April, 1987 inspection.

Iowa Electric Light and Power Company

May 7, 1987

DAEC-87- 0483

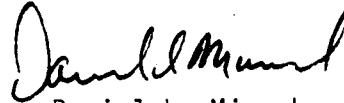
U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D. C. 20555

Subject: Duane Arnold Energy Center  
Docket No. 50-331  
Op. License DPR-49  
Licensee Event Report No. 87-012

Gentlemen:

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

Very truly yours,



Daniel L. Mineck  
Plant Superintendent - Nuclear

DLM/JRP/go

Attachment - LER 87-012

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

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