

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 1tr.

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

NOTES:

	RECIPIENT		COPIES			RECIPIENT		COPIES	
	ID CODE/NAME		L	T		ID CODE/NAME		L	T
	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	RGNS 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	

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
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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		
0	9	17	7	9	8	7	0	1	None		
									DOCKET NUMBER(S) 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) 01010	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)							
	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.38(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)							
	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.38(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input checked="" type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 366A)							
	<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)								
	<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)								
	<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)								

LICENSEE CONTACT FOR THIS LER (12)		TELEPHONE NUMBER	
NAME James R. Probst, Technical Support Engineer		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 NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	
X	KII	MIO	W1120	NO						

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED SUBMISSION DATE (15)		
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)			<input checked="" type="checkbox"/> NO		
			MONTH	DAY	YEAR

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

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

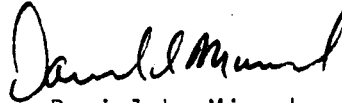
U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D. C. 20555

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

IE22  
11