

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1): **Duane Arnold Energy Center** DOCKET NUMBER (2): **050003311** PAGE (3) **1** OF **013**

TITLE (4): **Reactor Core Isolation Cooling System Inoperability for Repair of Pump Flow Meter**

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									
1	1	04	8	6	02	3	0	0	1	2	04	8	6	0	5	0	0	0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11):

OPERATING MODE (9): N	<input type="checkbox"/> 20.402(a)	<input type="checkbox"/> 20.406(a)	<input type="checkbox"/> 20.73a(1)(i)(iv)	<input type="checkbox"/> 20.731(b)
POWER LEVEL (10): 01918	<input type="checkbox"/> 20.405(a)(1)(iii)	<input checked="" type="checkbox"/> 20.38(a)(1)(i)	<input type="checkbox"/> 20.73a(1)(i)(v)	<input type="checkbox"/> 20.731(c)
	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 20.38(a)(2)	<input type="checkbox"/> 20.73a(1)(ii)(v)	<input type="checkbox"/> OTHER (Specify in Abstract Section and in Text: NRC Form 205A)
	<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 20.73a(1)(ii)	<input type="checkbox"/> 20.73a(1)(iii)(A)	
	<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 20.73a(1)(iii)	<input type="checkbox"/> 20.73a(1)(iii)(B)	
	<input type="checkbox"/> 20.405(a)(1)(vi)	<input type="checkbox"/> 20.73a(1)(iv)	<input type="checkbox"/> 20.73a(1)(iv)	

LICENSEE CONTACT FOR THIS LER (12):

NAME: **James R. Probst, Technical Support Engineer** TELEPHONE NUMBER: **311981511-173108**

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	BIN	MTR	GO80	Y					

SUPPLEMENTAL REPORT EXPECTED (14):

YES (15) NO EXPECTED SUBMISSION DATE: MONTH DAY YEAR

ABSTRACT (Limit to 1000 spaces (i.e. approximately 60 lines single space typewritten text) (16):

On November 4, 1986 the reactor was in power operation at approximately 98%. During the performance of the Reactor Core Isolation Cooling (RCIC) quarterly surveillance test, the Control Room RCIC pump outlet flow meter was determined not to be indicating actual RCIC pump flow rate. RCIC was conservatively declared inoperable pending repair of the meter. This problem did not render the RCIC system unable to perform its intended function. However, repair of the meter necessitated removal of the RCIC turbine flow controller, which rendered RCIC inoperable. RCIC was returned to operability in twenty-one hours. The High Pressure Coolant Injection System was tested as required by Technical Specifications and found operable. The flow meter, a General Electric Type 180 meter, was found with its indicating arm magnetized. The root cause is unknown, but age related failure is suspected. Meters of this type are used for indication functions only. No upgraded monitoring of this type of meter or other corrective action appears warranted.

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		YEAR 8 6	SEQUENTIAL NUMBER - 0 2 3	REVISION NUMBER - 0 0			

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

On November 4, 1986, with the reactor at 98% power, during the performance of the quarterly Reactor Core Isolation Cooling (RCIC, EIIS System Code BN) surveillance test, the Control Room RCIC pump outlet flow meter was not responding to actual RCIC pump flow variations. The RCIC system was conservatively declared inoperable at 0333 hours. This problem did not render the RCIC system unable to perform its intended function. Per Technical Specification 3.5.E.2, inoperability of the RCIC system is a seven day Limited Condition for Operation (LCO), contingent upon the continued operability of the High Pressure Coolant Injection System (HPCI, EIIS System Code BJ). The HPCI system had been successfully tested by 0451 hours the same day. The worst case effect of RCIC inoperability with the reactor in run mode is to lose this system's ability to maintain reactor vessel inventory during events which do not depressurize the vessel. RCIC is not an Emergency Core Cooling System and the HPCI system provides full redundancy during RCIC inoperability.

Work was initiated for repair of the flow meter. The flow meter is a General Electric Type 180 Panel Meter (BN-MTR-2509), and is contained in the same panel cutout as the RCIC Pump flow indicating controller, FIC2509 (BN-FIC-2509). Repair of the flow meter required the disabling of FIC2509, which rendered the RCIC system unable to perform its design function. The flow meter was replaced like-for-like. Examination of the removed flow meter determined the cause of the meter's failure was problems with the magnetic field used to move the indicating arm. The arm itself showed signs of magnetization. The root cause of this magnetization problem remains unknown, although age-related failure is suspected.

This flow indicator is calibrated once per refueling outage. There are many General Electric Type 180 meters in use within various systems at Duane Arnold Energy Center (DAEC). They serve an indication only function and do not affect systems' abilities to perform their intended function. There is no recommended surveillance interval noted within the instruction manual provided with the meter. DAEC's meters are calibrated at intervals from yearly to every five years depending on system needs. No upgraded monitoring of General Electric Type 180 meters or other corrective actions appear warranted at this time. For the RCIC system, this meter is the only pump outlet flow indication available. Pump discharge pressure, turbine speed and valve position indication in the Control Room would provide operators with sufficient indication to determine if the pump is functioning correctly.

On November 5, 1986 at 0010 hours, following successful completion of its quarterly Surveillance Test Procedure, the RCIC system was declared operable, ending the seven day LCO. This event is being reported per 10CFR50.73(a)(2)(v) as an event or condition which would have prevented the fulfillment of a system needed to shutdown the reactor and maintain it in a safe shutdown condition. In this case, the condition which rendered the RCIC system inoperable was maintenance on a flow meter. Failure of this meter

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

itself did not render the system inoperable. The Technical Specification required surveillance on the system could not be completed, however, until the meter's repair or replacement. Therefore the meter was replaced, which required RCIC be rendered inoperable for a short period of time.

Iowa Electric Light and Power Company

December 4, 1986
DAEC-86-0932

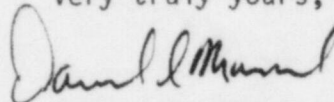
U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555

Subject: Duane Arnold Energy Center
Docket No. 50-331
Op. License DPR-49
Licensee Event Report No. 86-023

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/bj

Attachment - LER 86-023

cc: Mr. James G. Keppler
Regional Administrator
Region III
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

NRC Resident Inspector - DAEC

File A-118a