

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Duane Arnold Energy Center										DOCKET NUMBER (2) 0 5 0 0 0 3 3 1 1				PAGE (3) 1 OF 02						
TITLE (4) RFS Reactor High Pressure Switch Setpoint Drift																				
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	6	1	9	8	4	8	4	0	2	3	0	0	0	7	1	9	8	4	None	0 5 0 0 0 0 0 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)																		
POWER LEVEL (10)		20.402(b)				20.405(c)				50.73(a)(2)(iv)				73.71(b)						
17.5		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)				X 50.73(a)(2)(vii)				OTHER (Specify in Abstract below and in Text, NRC Form 365A)						
		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)(ix)										
LICENSEE CONTACT FOR THIS LER (12)																				
NAME Technical Engineer - Michael S. Harris										TELEPHONE NUMBER AREA CODE 311 981511 - 173016										
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																				
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS	
X	J	C	P	S	B	9	6	9	Yes											
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 6/19/84, while the plant was in the run mode at approximately 75% power, a monthly surveillance test revealed 3 out of 4 reactor high pressure switches had drifted out of tolerance in the nonconservative direction. The 4 pressure switches comprise a one out of two-twice RPS scram initiation logic for a reactor scram at high pressure (setpoint ≤ 1035 psig).

The pressure switches were recalibrated and returned to service. The next monthly surveillance test was accelerated to ensure the drift was not indicative of component failure or an improper calibration procedure. As the higher pressure scram setpoint is enveloped by transient analytical basis, there was no effect on the ability to safely scram the reactor automatically on high reactor pressure.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/85

FACILITY NAME (1) Duane Arnold Energy Center	DOCKET NUMBER (2) 0 5 0 0 0 3 3 1 8 4 - 0 2 3 - 0 0 0 2	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
					OF	

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

On 6/19/84, while the plant was in the run mode at approximately 75% power, a monthly surveillance test of the 4 reactor high pressure RPS scram switches (JC-PS-4549, 4550, 4551, and 4552) found PS-4550, PS-4551, and PS-4552 out of tolerance in the non-conservative direction. The 4 switches are Barksdale Model Number B2T M12SS (bourdon tube) and comprise a one out of two-twice RPS (JC) scram initiation logic on reactor high pressure. The setpoint for all 4 pressure switches is 1035 psig \pm 12, not including head correction. The setpoints had drifted such that a full scram on high reactor pressure would not have been realized until a minimum pressure of 1051 psig had been reached (as-found setpoints were 1054, 1051, and 1053 psig, respectively).

The affected switches were immediately recalibrated per the surveillance test procedure after being found out of tolerance. To ensure that this situation was not indicative of possible component degradation or an improperly performed surveillance procedure, the normal 30 day surveillance was performed approximately 2 weeks later. During this test, JC-PS-4549 had drifted out of calibration slightly in the conservative direction while the other 3 switch setpoints were satisfactory.

An extensive investigation into the root cause of the excessive setpoint drift was conducted. Although the investigation included extensive trending of past as-found setpoints, discussions with the instrument Technicians performing the surveillances, and consultation with Barksdale's Technical Services personnel, a root cause could not be conclusively determined. However, it is theorized that the setpoint drift on 6/19 may have been compounded from a previous surveillance performed on 5/17/84. At that time the plant was in cold shutdown and the bourdon tube may not have been pumped up to operating pressure long enough prior to testing the setpoint. Procedure changes have been initiated to ensure adequate test set times. After the plant was in run and the bourdon tube was pressurized for some time, the tube may have reset (closed) slightly and consequently caused the switch to trip late. This lack of adequate pressurization prior to the surveillance performed on 5/17 may have allowed a small, unnoticed setpoint drift to have compounded itself by the time of the subsequent test of 6/19. Engineering review is in progress as a result of previous random drift problems with these instruments. We have increased the priority of this activity and are closely monitoring instrument performance by onsite Technical Engineering pending a permanent solution that will result from this review.

In support of an ongoing power uprate program, analyses has been performed assuming a RPS high pressure scram setpoint of 1067 psig. The analyses demonstrates acceptable plant transient response. Hence, the nonconservative drift had no affect on the safe operation of the plant or public health and safety. This is the first time multiple pressure switches have been found out of tolerance in the nonconservative direction so as not to allow reactor high pressure scram within the instrument tolerance band (\pm 1%).

Iowa Electric Light and Power Company

July 19, 1984

DAEC-84-458

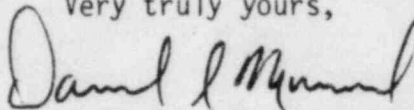
U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555

Subject: Duane Arnold Energy Center
Docket No. 50-331
Op. License DPR-49
Licensee Event Report No. 84-023

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
Duane Arnold Energy Center

DLM/MHS/kp

attachment

cc: Mr. James G. Keppler
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799 Roosevelt Road
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NRC Resident Inspector - DAEC

File A-118a

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