

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Duane Arnold Energy Center										DOCKET NUMBER (2) 0 5 0 0 0 3 3 1										PAGE (3) 1 OF 02		
TITLE (4) Inadvertent RPS Actuations																						
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	6	1	0	8	5	8	5	0	2	0	0	0	7	1	0	8	5	0	5	0	0	0
OPERATING MODE (9) N		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)																				
POWER LEVEL (10) 0 0 0		20.402(b)				20.406(a)				<input checked="" type="checkbox"/> 50.73(a)(2)(iv)				73.71(b)								
		20.406(a)(1)(i)				50.38(a)(1)				<input type="checkbox"/> 50.73(a)(2)(v)				73.71(a)								
		20.406(a)(1)(ii)				50.38(a)(2)				<input type="checkbox"/> 50.73(a)(2)(vi)				OTHER (Specify in Abstract below and in Text, NRC Form 365A)								
		20.406(a)(1)(iii)				50.73(a)(2)(i)				<input type="checkbox"/> 50.73(a)(2)(viii)(A)												
		20.406(a)(1)(iv)				50.73(a)(2)(ii)				<input type="checkbox"/> 50.73(a)(2)(viii)(B)												
		20.406(a)(1)(v)				50.73(a)(2)(iii)				<input type="checkbox"/> 50.73(a)(2)(ix)												
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 NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS													
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR								
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)										<input checked="" type="checkbox"/> NO												

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

On 6/10/85 at 1450 hours, with the reactor in refuel mode and fuel in the vessel, a worker coming to the aid of an injured co-worker inadvertently bumped and manually tripped the supply feeder breaker from the Startup Transformer to Essential Bus 1A4, deenergizing the bus. The "B" side of the Reactor Protection System (RPS) and Groups 2, 3, 4, and 5 isolations actuated and the "B" Standby Diesel Generator auto-started on the momentary loss of power to 1A4. Essential Bus 1A4 automatically transferred to the Standby Transformer within seconds per design. The "B" Diesel did not load and was secured.

At 1504 hours, the "B" RPS logic was reenergized, but could not be reset until all its instruments had had sufficient warmup time. At 1505 hours, a momentary upscale "A" Average Power Range Monitor signal resulted in actuation of the "A" RPS logic, and a full scram. During the scram a control rod valved out to prevent insertion during maintenance activities inserted after receiving increased cooling water flow. At 1506 hours, immediately after the "A" RPS logic was reset, a second full RPS trip occurred due to a high Scram Discharge Volume Level signal which had not been bypassed while resetting the logic. At 1512 the "A" and "B" RPS logics were reset.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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 5 - 0 2 0 - 0 0 0 2 OF 0 2	LER NUMBER (6):			PAGE (3):		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			

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

On 6/10/85 at 1450 hours, with the reactor in refuel mode and fuel in the vessel, a worker performing grinding work in the 1A4 ("B") essential switchgear room fell off scaffolding due to a mild (120V AC) electric shock. The shock occurred when his hand grinder power cord was cut and was shorted out by a rough edge on the ventilation ducting on which he was working. A second worker on the scaffolding jumped to the floor to aid the fallen worker, and in the process inadvertently bumped and manually tripped the supply feeder breaker from the Startup Transformer (EIS system code EA) to Essential Bus 1A4 (EB), deenergizing the bus. The shocked worker was not seriously injured.

The "B" side of the Reactor Protection System (JC) logic, fed from the 1A4 bus, actuated on loss of power. The "B" Emergency Diesel Generator (EK) auto-started. Group 2, 3, 4, and 5 isolations (JM) and the "B" Standby Gas Treatment System (BH) actuated as designed. Also per design, Essential Bus 1A4 automatically transferred to the Standby Transformer within seconds following loss of power. Therefore, the "B" Emergency Diesel Generator did not load, and was secured shortly thereafter.

At 1504 hours, the "B" Reactor Protection System logic was reenergized. However, the RPS logic could not be reset and cleared because the main steam line high radiation monitors continued to provide a downscale trip signal. This was due to insufficient warm-up time following their power loss. At 1505 hours, a momentary upscale signal from the "A" Average Power Range Monitor (IG) actuated the "A" Reactor Protection System, resulting in a full scram. During the current outage, some problems have been experienced with noise spikes in the APRM circuitry. Maintenance activities are in progress to isolate spurious APRM noise.

At the time of the scram, all control rods were fully inserted, with the exception of two rods at position 46 (48 equals full-out). These control rods had been valved out (one with and one without cooling water) to prevent insertion while their control cells were defueled for maintenance. Following the full RPS scram signal, the rod receiving cooling water was found to have inserted. Investigation revealed that at the time of the scram, cooling water for the 87 already full-in Control Rods (AA) had been diverted to this CRD unit per plant design. Although the active Control Rod Drive pump had been load shed upon loss of power to Essential Bus 1A4, it is concluded enough pressure remained in the CRD cooling water header to insert the control rod. The control rod was later visually inspected, found not to have been damaged by the insertion, and then withdrawn.

At 1506 hours, immediately after the "A" Reactor Protection System logic had been reset from the spurious APRM signal, a second RPS trip occurred due to high Scram Discharge Volume (SDV) level. The SDV had not drained since the prior scram, and the operators had neglected to bypass the SDV High Level trip, which allows the RPS logic to be reset. The second RPS trip did not result in control rod motion.

At 1512 hours, following clearing of the "B" RPS main steam line downscale signal, the "A" and "B" RPS logics were reset. The Group 3 isolation was reset at 1516 hours, and Essential Bus 1A4 was transferred back to the Startup Transformer at 1537. There was no effect on the health and safety of the public from this event.

Iowa Electric Light and Power Company

July 10, 1985
DAEC-85-0590

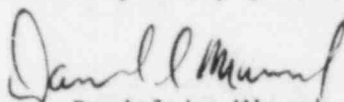
U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555

Subject: Duane Arnold Energy Center
Docket No. 50-331
Op. License DPR-49
Licensee Event Report No. 85-020

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/JRP/kp

attachment

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

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