

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Duane Arnold Energy Center										DOCKET NUMBER (2) 0 5 0 0 0 3 1 3 1 1										PAGE (3) 1 OF 0 14																													
TITLE (4) Too Few Average Power Range Monitor Downscale Trip Channels																																																	
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)																
																											None						0 5 0 0 0 0 0 0 0 0																
0 7			3 1			8 5			8 5			0 3			7 0			0 0			0 8			3 0			8 5									0 5 0 0 0 0 0 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) 01913						20.402(b)						20.406(a)						50.73(a)(2)(iv)						73.71(b)																									
						20.406(a)(1)(i)						50.38(a)(1)						50.73(a)(2)(v)						73.71(c)																									
						20.406(a)(1)(ii)						50.38(a)(2)						50.73(a)(2)(vi)						X OTHER (Specify in Abstract below and in Text, NRC Form 366A)																									
						20.406(a)(1)(iii)						50.73(a)(2)(i)						50.73(a)(2)(viii)(A)																															
						20.406(a)(1)(iv)						50.73(a)(2)(ii)						50.73(a)(2)(viii)(B)																															
20.406(a)(1)(v)						50.73(a)(2)(iii)						50.73(a)(2)(ix)																																					
LICENSEE CONTACT FOR THIS LER (12)																																																	
NAME James R. Probst, Technical Support Engineer																				TELEPHONE NUMBER 319 8511-71308																													
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																			
YES (If yes, complete EXPECTED SUBMISSION DATE)																				X NO																													
ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)																																																	
<p>On July 31, 1985, with the reactor in run mode at 93% power, the inoperable "C" Intermediate Range Monitor (IRM) was taken out of bypass (with an Inoperable trip remaining in place) to comply with an apparent Technical Specification Table 3.1-1 requirement of two operable Average Power Range Monitor (APRM) Downscale Trip instrument channels per Reactor Protection System (RPS) Trip System. Per plant design, when an IRM is bypassed, its companion APRM Downscale Trip Function is also bypassed. Within the "A" RPS Trip System, with the "A" APRM having been previously bypassed due to the possibility of an inoperability trip, the "C" IRM was bypassed on July 23, 1985 due to inoperability. This left only one operable APRM Downscale Trip instrument channel in the "A" RPS Trip system. Plant Technical Specification Table 3.1-1 permits one bypassed IRM, and one bypassed APRM per RPS Trip System, while at the same time appears to require two operable APRM Downscale Trip instrument channels per RPS Trip System while in the run mode. The Technical Specifications do not clearly address the effect upon APRM Downscale trip instrument channels of bypassing IRMs. Clarification of the Technical Specifications and investigation into the feasibility of altering this logic are being pursued.</p> <p>This Licensee Event Report is being submitted pursuant to the "Other" category of the LER form to document this event and the Technical Specification inconsistency.</p>																																																	
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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)	DOCKET NUMBER (2)	LER NUMBER (5)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Duane Arnold Energy Center	0500033185	—	037	—	00	02	OF 04

TEXT (If more space is required, use additional NRC Form 386A's) (17)

Between July 23 and July 31, the reactor was in run mode and startup was proceeding following a refuel outage. The Intermediate Range Monitors (IRM, EIIS System IG) detectors had been retracted. The "A" Average Power Range Monitor (APRM, EIIS System IG) had previously been bypassed due to the possibility of a "too few inputs" inoperability trip. The "C" IRM was bypassed on July 23 due to inoperability. Per plant design, this rendered the "C" APRM Downscale Trip inoperable. With the "A" APRM already bypassed, the only available APRM Downscale instrument channel in the "A" Reactor Protection System Trip System (RPS, EIIS System JC) was from the "E" APRM.

The "A" RPS Trip System has three APRM channels ("A", "C" and "E") and three companion IRM channels ("A", "C" and "E"). When an IRM channel is bypassed, then its companion APRM Downscale Trip channel is also bypassed. (APRM "A" and IRM "A"; APRM "B" and IRM "B" are examples of companion channels, see page 4 for a logic diagram). Therefore, when the "C" IRM was bypassed on July 23, its companion "C" APRM Downscale Trip channel was also bypassed.

The Technical Specifications do not clearly address the effect upon APRM downscale trip channels of bypassing IRMs. Technical Specifications Table 3.1-1 allows one APRM channel to be bypassed per RPS Trip System and one IRM channel to be bypassed per RPS Trip System. Bypassing in the same RPS Trip System one APRM channel and one non-companion IRM channel will result in only one APRM Downscale Trip channel remaining operable for that RPS trip system. However, Technical Specification Table 3.1-1 also appears to require two APRM Downscale Trip channels per RPS trip system when in run mode. The APRM Downscale Trip line in Technical Specifications Table 3.1-1 does not have the usual designation symbol for required operability in the run mode column (as it does for the other applicable APRM functions), but instead in that column references a note which states, "The APRM downscale trip is automatically bypassed when the IRM instrumentation is operable and not high."

On July 31, 1985, the reactor was in run mode at 93% power with the "A" APRM and "C" IRM still bypassed. At 1800 hours, the Operations Shift Supervisor determined that the apparent Technical Specification Table 3.1-1 requirement for a minimum of two operable APRM Downscale instrument channels per RPS Trip System noted above was not being met. Consequently, the inoperable "C" IRM was unbypassed (with the "C" IRM inoperability trip remaining in place). This rendered the "C" APRM Downscale Trip operable, which gave the "A" RPS Trip System two operable APRM Downscale Trips ("C" and "E"). The relationship between the IRM bypass and its companion APRM Downscale Trip has since been emphasized to Operations personnel.

This Licensee Event Report is being submitted pursuant to the "Other" category of the LER form per NUREG-1022 to document this event and the Technical Specification inconsistency. Iowa Electric is currently considering submitting a request for clarification of the Technical Specifications with regards to the APRM Downscale Trip.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
Duane Arnold Energy Center	0 5 0 0 0 3 3 1	8 5	— 0 3 7	— 0 0	0 3	OF 0 4

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

The APRM Downscale signal occurs when the APRM reads less than or equal to 5% power. An APRM Downscale trip with a companion IRM Upscale or Inoperability trip while in the run mode results in an RPS logic channel trip. When the plant is in run mode, and the APRMs have been verified as reading above 5% power, the IRMs are withdrawn, which prevents them from reading upscale. This eliminates the need for an APRM Downscale with companion IRM Upscale RPS logic channel trip. Duane Arnold Energy Center and the system designer, General Electric, are currently determining the purpose of this RPS logic channel trip, and the feasibility of its elimination.

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):

05000331

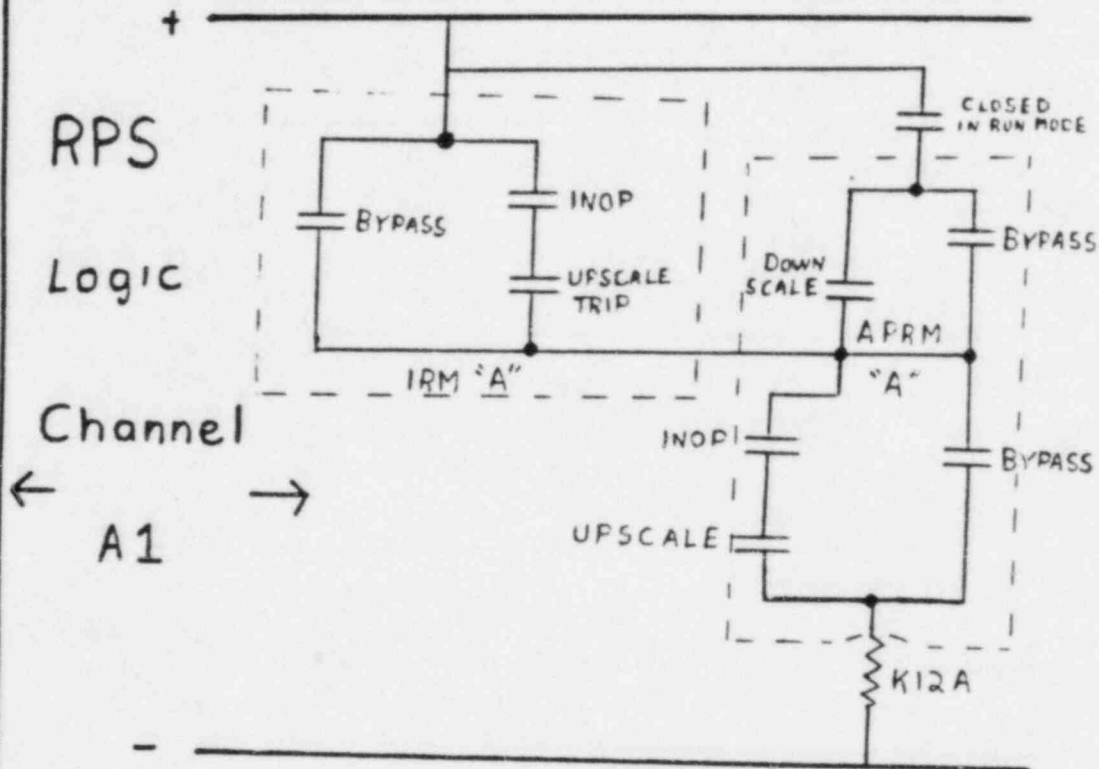
LER NUMBER (5):

YEAR	SEQUENTIAL NUMBER	REVISION NUMBER
85	037	00

PAGE (3):

04 OF 04

TEXT (If more space is required, use additional NRC Form 386A (9-83))



CONTACTS ARE SHOWN DE-ENERGIZED.

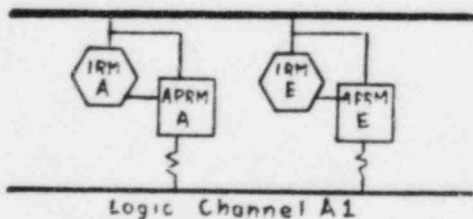
RPS IS NORMALLY ENERGIZED (DE-ENERGIZED TO ACTUATE).

BYPASS CONTACTS CLOSE ON BYPASS SELECTION.

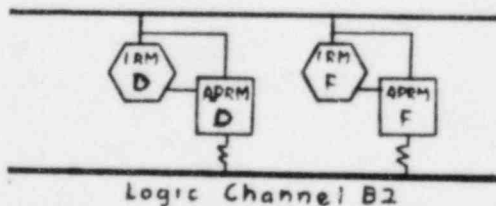
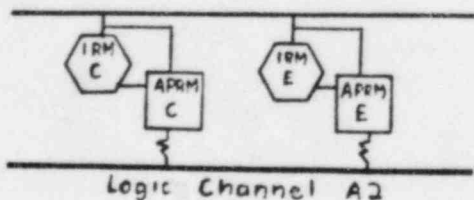
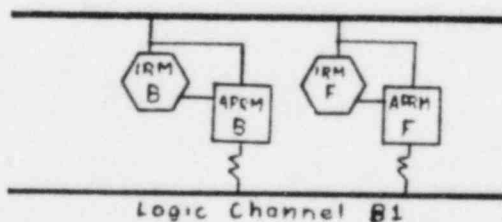
ALL CONTACTS OTHER THAN BYPASS OPEN ON THEIR RESPECTIVE TRIPS.

A FULL RPS TRIP IS ACTUATION OF LOGIC CHANNEL A1 OR A2 PLUS ACTUATION OF LOGIC CHANNEL B1 OR B2.

RPS TRIP SYSTEM "A"



RPS TRIP SYSTEM "B"



Iowa Electric Light and Power Company

August 30, 1985

DAEC-85-764

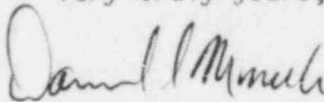
U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555

Subject: Duane Arnold Energy Center
Docket No. 50-331
Op. License DPR-49
Licensee Event Report No. 85-037

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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