

Iowa Electric Light and Power Company

July 31, 1991
DAEC-91-0635

Mr. A. Bert Davis
Regional Administrator
Region III
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

Subject: Duane Arnold Energy Center
Docket No: 50-331
Op. License DPR-49
Licensee Event Report #91-006

Gentlemen:

In accordance with 10 CFR 50.73 please find attached a copy of the subject
Licensee Event Report.

Very truly yours,

David L. Wilson

David L. Wilson
Plant Superintendent - Nuclear

DLW/JSA/pwj

cc: Director of Nuclear Reactor Regulation
Document Control Desk
U.S. Nuclear Regulatory Commission
Mail Station P1-137
Washington, D. C. 20555

NRC Resident Inspector - DAEC

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LICENSEE EVENT REPORT (LER)

EXPIRES 4/30/92

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-53) U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555 AND TO THE PAPERWORK REDUCTION PROJECT (3150-0124) OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

FACILITY NAME (1)

DOCKET NUMBER (2)

PAGE 3

Duane Arnold Energy Center

0 5 0 0 0 3 3 1 1 OF 0 3

TITLE: Primary Containment Isolation System Half Group III Isolation Due to a Blown Fuse
Associated with a Refuel Pool Exhaust Radiation Monitor

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 (5)
07	11	91	91	006	0	07	31	91	None		0 5 0 0 0
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following): (11)											
OPERATING MODE (9)		N									
POWER LEVEL (10)		110.0									
20.402(b)		20.406(c)		X		50.73(a)(2)(iv)		73.71(b)			
20.406(a)(1)(i)		50.38(c)(1)				50.73(a)(2)(v)		73.71(c)			
20.406(a)(1)(ii)		50.38(c)(2)				50.73(a)(2)(vi)		OTHER (Specify in Abstract below and in Test NRC Form 306A)			
20.406(a)(1)(iii)		50.73(a)(2)(iii)				50.73(a)(2)(vii)(A)					
20.406(a)(1)(iv)		50.73(a)(2)(iv)				50.73(a)(2)(vii)(B)					
20.406(a)(1)(v)		50.73(a)(2)(iii)				50.73(a)(2)(ix)					

LICENSEE CONTACT FOR THIS LER (12)

NAME

TELEPHONE NUMBER

Jeff S. Axline, Technical Support Engineer

AREA CODE

3 1 9 8 5 1 - 7 6 1 0 1 0

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFAC TURE	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFAC TURE	REPORTABLE TO NRC
X	EIDFIU		B 5.6 19	No					

SUPPLEMENTAL REPORT EXPECTED (14)

EXPECTED SUBMISSION DATE (15)

MONTH YEAR

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YES (1) or complete EXPECTED SUBMISSION DATE:

XX

NO

ABSTRACT (Limit to 1400 spaces - approximately fifteen single space typewritten lines) (16)

On July 11, 1991, the plant was operating at 100% power when a primary containment isolation system group III ('A' side) isolation occurred along with the initiation of the 'A' standby gas treatment system and isolation of secondary containment. Investigation of the isolation determined that a fuse had blown in the circuit which supplies power to the 'A' refuel pool exhaust radiation monitor. Following replacement of the fuse, the isolation was reset.

The cause of the group III isolation was loss of power to the 'A' refuel pool exhaust radiation monitor. On a loss of power, the monitor defaults to the tripped condition. Investigation into the cause for the blown fuse did not identify any conditions which would have caused the fuse to blow. The blown fuse was replaced without further problems.

This event had no effect on the safe operation of the plant.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

EXPIRES 4/30/92

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-530) U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

DOCKET NUMBER (2)

LER NUMBER:

PAGE(1)

Duane Arnold Energy Center

05000331

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

I. DESCRIPTION OF EVENT:

On July 11, 1991 at 2110 hours, the plant was operating at 100% power when a Primary Containment Isolation System (PCIS) group III ('A' side) isolation occurred along with initiation of the 'A' Standby Gas Treatment System (SGTS) and isolation of secondary containment. Investigation of the isolation determined that a fuse had blown in the circuit which supplies power to the 'A' refuel pool exhaust radiation monitor.

II. CAUSE OF EVENT

The cause of the group III isolation was loss of power to the 'A' refuel pool exhaust radiation monitor. On a loss of power, the monitor defaults to the tripped condition. Investigation into the cause for the blown fuse (Bussmann type MIN 5) did not identify any conditions which would have caused the fuse to blow.

III. ANALYSIS OF EVENT

This event had no effect on the safe operation of the plant. The group III isolation, SGTS, and secondary containment isolation all functioned as designed in response to the trip signal received from the 'A' refuel pool exhaust radiation monitor. Had this event occurred under different plant conditions, the effect on safe operation would have been the same.

IV. CORRECTIVE ACTION

Immediate corrective actions were to determine the cause for the isolation. Following determination that the group III isolation was caused by a blown fuse, and not a high radiation condition, the fuse was replaced. At 2136 hours the isolation was reset. No further problems occurred.

Further investigation determined that the fuse which had blown (internal inspection of the fuse determined it had blown, versus mechanical failure) was the correct size as indicated on applicable design drawings. In addition, the circuit load was measured and found to be 1 amp which is significantly less than the 5 amp fuse rating. Review of the vendor manual ratings for the equipment on the affected circuit also verified that the expected maximum load on the circuit is less than half of the fuse rating.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

EXPIRES: 4/30/92

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545 AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

FACILITY NAME (1) Duane Arnold Energy Center	DOCKET NUMBER (2) 05000331	LER NUMBER (8)			PAGE (3)		
		YEAR 91	SEQUENTIAL NUMBER - 006	REVISION NUMBER - 00	3	OF	3

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

With normal circuit loading being well under the fuse rating, the cause for the blown fuse is limited to two basic failure types; a momentary overcurrent condition, or fuse degradation which caused it to blow at a current value less than its rated value. No evidence was found to indicate a momentary short/overcurrent condition had occurred. The fuse manufacturer was contacted regarding causes for a fuse to blow at less than rated current. The manufacturer didn't have any data associated with fuse failures of this type, however, they stated that excessive heat at the fuse caused by high resistance connections on the fuse clip could degrade the fuse. Inspection of the fuse holder and its connections did not identify any problems.

V. ADDITIONAL INFORMATION

A) PREVIOUS SIMILAR EVENTS

A review of DAEC LERs since 1984 did not identify any previous events where a blown fuse was the cause of the event.

B) EIIIS SYSTEM AND COMPONENT CODES

Systems: JM
BH
ED

Components: ED-FU