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ACCESSION NBR:9101080121 DOC.DATE: 90/12/27 NOTARIZED: NO DOCKET #
FACIL:50-331 Duane Arnold Energy Center, Iowa Electric Light & Pow 05000331
AUTH.NAME AUTHOR AFFILIATION
MCGEE,R. Iowa Electric Light & Power Co.
HANNEN,R.L. Iowa Electric Light & Power Co.
RECIP.NAME RECIPIENT AFFILIATION

DAVIS,A.B. Region 3 (Post 820201)

SUBJECT: LER 90-021-00:on 901204,RWCU sys 'B' side logic primary containment isolation sys actuation occurred.Caused by high HX room differential temp.Special test performed & new isolation setpoint of 49 F determined.W/901227 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 4
TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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Iowa Electric Light and Power Company

December 27, 1990
DAEC-90-1069

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 #90-021

Gentlemen:

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

Very truly yours,

Rick L. Hannen
Plant Superintendent - Nuclear

RLH/RMcG/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

Dr. William R. Jacobs, Jr.
GDS Associates, Inc.
Suite 720
1850 Parkway Place
Marietta, GA 30068-8237

File A-118a

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NRC Form 366A (6-89) U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

APPROVED OMB NO.3150-0104

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 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), 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 (4) PCIS Group V Reactor Water Cleanup Isolation Due to Sensed High Heat Exchanger Room Differential Temperature

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)
1 2	0 4	9 0	9 0	0 2 1	0 0	1 2	2 7	9 0	None	0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	1 0 0	20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
		20.402(c)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.402(c)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		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)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Ronald McGee, Technical Support Specialist	AREA CODE 3 1 9 8 5 1 - 7 6 0 2

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

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 December 4, 1990 at 1859 hours a Reactor Water Cleanup (RWCU) System ('B' side logic) Primary Containment Isolation System (PCIS Group V) actuation occurred. The plant was operating at 100% power. All automatic actions due to the isolation signal occurred.

The system actuated conservatively in response to a sensed high room differential temperature caused by a cold ambient inlet temperature.

Corrective actions for this event include performance of a Special Test which determined a new isolation setpoint and data collection which will be utilized to calculate new maximum allowable setpoints in an effort to preclude further unwarranted isolations.

I. DESCRIPTION OF EVENT:

On December 4, 1990 at 1859 hours a Reactor Water Cleanup (RWCU) System ('B' side logic) Primary Containment Isolation System (PCIS Group V) actuation occurred. The plant was operating at 100% power. All automatic actions due to the isolation signal occurred.

II. CAUSE OF EVENT

The differential temperature monitored by Differential Temperature Switch TDS 2743F (Steam Leak Detection System), which measures the temperature rise across the RWCU Heat Exchanger Room, exceeded its 43 degree F. delta-T setpoint. The highest observed reading was 44 degrees F. differential. Technical Specifications require the trip setpoint to be set at 14 degrees F. above the 100% operating room differential temperature to ensure that a steam leak in the Heat Exchanger Room would be detected, and automatic isolation of the RWCU system would occur.

The inlet side temperature element for TDS 2743F was recently relocated. Following this relocation, a new trip setpoint was not initially established which resulted in a RWCU PCIS isolation on September 10, 1990 as reported in Licensee Event Report 90-013. A Special Test was then performed to determine a new 100% operating room differential temperature which resulted in the switch trip setpoint being adjusted to 43 degrees F. delta-T.

On 12-4-90, outside air temperatures lowered, due to a cold front entering the area, causing Reactor Building ambient temperatures to decrease, thus lowering the inlet temperature to the RWCU Heat Exchanger Room. The Heat Exchanger room outlet air temperature does not change linearly with inlet temperature. This causes the room differential temperature to rise as inlet temperature lowers.

A Special Test to determine Heat Exchanger room differential temperatures during the winter months was scheduled, but had not been performed prior to this event as review of the monthly differential temperature readings indicated that existing differential temperatures were not changing significantly.

The root cause for this event has been determined to be conservatism inherent to the RWCU steam leak detection system design. This conservatism favors reliable steam leak detection as opposed to prevention of occasional unwarranted isolations which have no safety significance.

III. ANALYSIS OF EVENT

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

The system actuated conservatively in response to a sensed high differential temperature. All automatic actions occurred properly. RWCU has no safety related functions other than isolation and does not prevent any ECCS system from providing adequate core cooling while isolated.

IV. CORRECTIVE ACTIONS

The RWCU Special Test was performed and a new isolation setpoint of 49 degrees F. delta-T was determined. The RWCU system was returned to service on December 6, 1990.

As members of the BWR Owners Group Leak Detection Improvement Committee, DAEC will continue to incorporate system improvements based on NRC approved committee recommendations. Currently, the BWROG committee is reviewing a proposed request to delete the delta-T isolation requirement from Technical Specifications.

Data will be collected and utilized in calculating differential temperature isolation setpoints for the RWCU Heat Exchanger room leak detection system which will continue to provide adequate leak detection capability while providing for an optimum of expected room inlet temperature variance without causing unnecessary isolations. Adequate data will be available and the calculation will be complete by 6-30-91.

V. ADDITIONAL INFORMATION

A. No failed components were identified during this event.
B. Previous Licensee Event Reports concerning high differential temperature RWCU isolations include LERs 86-04, 86-12, 87-01, 87-03, 87-24, 88-10, and 90-13.
C. Reactor Water Cleanup (RWCU) - EIIS System Code CE;
Primary Containment Isolation System (PCIS) - EIIS System Code JM;
Steam Leak Detection System (SLD) - EIIS System Code IJ.