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October 16, 1998
NG-98-1782

Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station 0-P1-17
Washington, D. C. 20555-0001

Subject: Duane Arnold Energy Center
Docket No: 50-331
Op. License No: DPR-49
Licensee Event Report #98-008
File: A-120

Dear Sirs:

The subject Licensee Event Report is herewith submitted in accordance with 10CFR50.73. There are no new commitments made in this letter.

Should you have any questions regarding this report, please contact this office.

Sincerely,

Dean Curtland Jr

Gary Van Middlesworth
Plant Manager - Nuclear

cc: Regional Administrator
Region III
U. S. Nuclear Regulatory Commission
801 Warrenville Road
Lisle, IL 60532

NRC Resident Inspector - DAEC
DOCU

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NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION
(6-1998)

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Duane Arnold Energy Center	05000331	1 OF 3

TITLE (4)
Inoperable Control Building Chiller due to Potential Loss of Control Air Supply

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
										05000
09	16	1998	1998	0 0 8	00	10	16	1998	FACILITY NAME	DOCKET NUMBER
										05000

OPERATING	1
POWER LEVEL (10)	100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)

	20.2201(b)		20.2203(a)(2)(v)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)
	20.2203(a)(1)		20.2203(a)(3)(i)		50.73(a)(2)(ii)		50.73(a)(2)(x)
	20.2203(a)(2)(i)		20.2203(a)(3)(ii)		50.73(a)(2)(iii)		73.71
	20.2203(a)(2)(ii)		20.2203(a)(4)		50.73(a)(2)(iv)		OTHER
	20.2203(a)(2)(iii)		50.36(c)(1)		50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A
	20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Clara Rushworth, Engineer - Licensing	(319) 851-7157

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

At 1540 on September 16, 1998, with the plant operating at 100% power, the "A" control building chiller was declared inoperable due to a determination that a control valve was supplied by air from a non-safety-related "common" line which, if lost, would result in the valve failing closed and preventing chill water flow to the control building A/C unit. The "B" chiller was not susceptible to this type of failure. A 30 day LCO was entered per Technical Specification (TS) Section 3.7.5. Since this condition is believed to have existed since initial plant start-up, this event is being reported pursuant to 10CFR50.73(a)(2)(i)(B) as a condition prohibited by TS.

A modification was performed to change the air supply from the "common" supply to the safety related "A" H&V instrument air compressor system. The modification was completed and the 30 day LCO exited on September 25, 1998.

This event had no effect on personnel safety or the safe operation of the plant. There was no impact on the health and safety of the public.

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Duane Arnold Energy Center	05000331	1998	0 0 8--	00	2 OF 3

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

I. DESCRIPTION OF EVENT:

At 1540 on September 16, 1998, the plant was operating at 100% power. Limiting conditions for operation (LCOs) were in effect for KAMAN 1 and SV-4334B (North Torus Spray Header CAD N2 Supply Outboard Isolation Valve) inoperability, but these had no effect on the event.

The "A" control building chiller was declared inoperable due to a determination that a control valve was supplied by air from a non-safety-related "common" line which, if lost, would result in the valve failing closed and preventing chill water flow to the control building A/C unit. Specifically, the 20 psig H&V instrument air supply to the control components for the cooling coil chill water control valve was fed by the "common" H&V instrument air supply. This "common" air supply automatically isolates to protect the "A" and "B" side air supplies if a low pressure condition should occur. A loss of the "common" air supply equates to a loss of air to control components resulting in a cooling coil chill water control valve failing closed, thereby preventing chill water flow to the cooling coil of the control building A/C unit. The "B" chiller was not susceptible to this type of failure since its chill water valve control components were supplied by the safety related "B" H&V instrument air compressor system, not the "common" supply.

A 30 day LCO was entered per Technical Specification (TS) Section 3.7.5, "Control Building Chiller (CBC) System." Since this condition had existed for longer than 30 days prior to the "A" chiller being declared inoperable, this event is being reported pursuant to 10CFR50.73(a)(2)(i)(B) as a condition prohibited by TS.

II. CAUSE OF EVENT:

The air supply design configuration for the "A" control building chiller would have resulted in the "A" chill water control valve failing closed in the event of the loss of the "common" air supply. This configuration was recognized during an engineering review of air compressor loads and requirements. A review of design documents did not provide a conclusive reason for this configuration for the "A" chiller. This condition is believed to have existed since initial plant start-up.

III. ANALYSIS OF EVENT

The CBC system provides temperature control for the control building HVAC system under both normal and accident conditions. The CBC System consists of two independent, redundant subsystems that provide cooling of control room air.

The two completely redundant chillers provide temperature control to ensure control room habitability and equipment operability during and after accident conditions as well as during normal operation. One operable CBC subsystem is adequate to perform the control building air conditioning function.

This event had no effect on personnel safety or the safe operation of the plant. There was no impact on the health and safety of the public. The normal plant air system is highly reliable. Plant procedures specify compensatory actions which would be taken to maintain the control room temperature at an acceptable level if chiller function is lost. These actions include using the adjacent computer room air conditioner to cool the control room, opening doors, and using air handling units and fans to increase air circulation. The probability of an event occurring requiring control building isolation is low, alternate cooling methods are available, and the "B" CBC subsystem was not susceptible to the same failure.

IV. CORRECTIVE ACTION

A modification was performed to change the instrument air supply for the "A" control components for the cooling coil chill water control valve from the "common" supply to the safety related "A" H&V instrument air compressor system. The modification was completed and the 30 day "A" chiller LCO exited on September 25, 1998. This change ensures a safety related air supply to the "A" Control Building HVAC control components to ensure that the "A" chiller will perform its intended safety function.

The engineering review that identified this discrepancy is ongoing and results will be tracked via the corrective action program.

V. ADDITIONAL INFORMATION

A) Previous similar events

A review of DAEC LERs since 1984 identified LERs 93-11, 92-19 and 92-16 concerning chiller inoperability. None of these LERs were related to instrument air supplies to the chillers.

B) EIIS System and Component Codes

Chilled Water System - KM
Control Building HVAC - VI