



Duane Arnold Energy Center  
3277 DAEC Road  
Palo, IA 52324  
Telephone 319 851 7611  
Fax 319 851 7611

November 22, 1995  
NG-95-3420

Mr. Hubert J. Miller  
Regional Administrator  
Region III  
U. S. Nuclear Regulatory Commission  
801 Warrenville Road  
Lisle, IL 60532

Subject: Duane Arnold Energy Center  
Docket No: 50-331  
Op. License No: DPR-49  
Licensee Event Report #95-011  
File: A-118a

Gentlemen:

Please find attached a copy of the subject Licensee Event Report (LER) in accordance with 10CFR50.73. The following new commitment is made in this letter:

Information surrounding this LER will be presented to the technical staff during semi-annual Engineering Support Training by August 31, 1996.

Sincerely,

Gary VanMiddlesworth  
Plant Manager, Nuclear

cc: **Director of Nuclear Reactor Regulation**  
Document Control Desk  
U. S. Nuclear Regulatory Commission  
Mail Station P1-37  
Washington, D. C. 20555-0001

NRC Resident Inspector - DAEC

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An IES Industries Company

**LICENSEE EVENT REPORT (LER)**

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

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST, 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, 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) 05000-331	PAGE (3) 1 OF 3
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TITLE (4)  
Elevated Standby Diesel Generator Room Temperature Leads to a High Generator Bearing Temperature

EVENT DATE (8)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)		
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER	
10	19	95	95	-- 011	-- 00	11	22	95	FACILITY NAME	DOCKET NUMBER 05000	
										DOCKET NUMBER 05000	
OPERATING MODE (9) 1 POWER LEVEL (10) 100 <b>THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)</b>											
			20.2201(b)			20.2203(a)(2)(v)			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)		<input checked="" type="checkbox"/> 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 Robert Murrell, Licensing Specialist	TELEPHONE NUMBER (Include Area Code) (319) 851-7900
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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)

YES (If yes, complete EXPECTED SUBMISSION DATE).	<input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On October 19, 1995, at 0033, during the performance of Surveillance Test Procedure (STP) 48A001M, "Standby Diesel Generator Monthly Operability Test," the 'A' Standby Diesel Generator (SBDG) outboard bearing temperature reached 205 degrees F after running for approximately 2 hours and 15 minutes. The bearing high temperature alarm setpoint is 200 degrees F. The A SBDG was secured at that time and declared inoperable. A seven day Limiting Condition for Operation (LCO) was entered. It was noted at that time that the room ventilation dampers were closed. Investigation later revealed that the 'A' SBDG room temperature controller, TC 7000A, had been installed incorrectly on October 10, 1995. On October 20, 1995, TC 7000A was configured properly and operability testing on the 'A' SBDG was completed satisfactorily. The LCO was exited on October 20, 1995, at 2126.

A comprehensive review and analysis has shown that the SBDG was operable at all times with the improperly configured controller installed. Therefore this event is being reported on a voluntary basis.

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

**LICENSEE EVENT REPORT (LER)**  
TEXT CONTINUATION

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Duane Arnold Energy Center	05000-331	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 3
		95	-- 011	-- 00	

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

**I. DESCRIPTION OF EVENT**

On October 19, 1995, at 0033, during performance of Surveillance Test Procedure (STP) 48A001M, "Standby Diesel Generator (SBDG) Monthly Operability Test," the 'A' Standby Diesel Generator (SBDG) outboard bearing temperature reached 205 degrees F after running for approximately 2 hours and 15 minutes. The A SBDG was secured at that time and declared inoperable. A seven day LCO was entered. It was noted at that time that the room ventilation dampers were closed. Investigation later revealed that the SBDG room temperature controller, Temperature Controller (TC) 7000A, had been installed incorrectly on October 10, 1995. On October 20, 1995, TC 7000A was configured properly and operability testing was completed satisfactorily. The LCO was exited on October 20, 1995, at 2126.

**II. CAUSE OF EVENT**

A review of maintenance history revealed that on June 20, 1995, Corrective Maintenance Action Request (CMAR) A26493 was initiated due to SBDG room temperature control concerns. Specifically, the temperature indication did not reflect actual room temperatures. Troubleshooting efforts on June 30, 1995 identified TC 7000A as being inoperable. As an interim measure to ensure proper room ventilation, Temporary Modification 95-183 was installed to fail the ventilation system in a safe mode of operation (recirculation dampers closed and inlet dampers open).

On August 18, 1995, CMAR A26493 was added to Engineered Maintenance Action (EMA) A25470G to replace the failed controller (model number T-9011) with a new controller (model number T5800-1).

On October 9, 1995, the EM was released for work. The Instrument & Control (I&C) technicians obtained the new controller and prepared to calibrate it on the bench. As part of the calibration process, the technicians obtained the appropriate data (input, output and allowable setpoints) from the previous calibration data sheet and transcribed the data onto the new calibration data sheet. With the data correctly transcribed (as it was in this case), the data sheet indicates that the controller is reverse acting (a positive input signal results in a decreasing output signal and vice versa). In this case the controller should have been set up as reverse acting which would have required that the pneumatic jumpers on the controller be repositioned. However, the technicians failed to recognize the need to reposition the pneumatic jumpers to reflect a reverse acting configuration. After the calibration data was transcribed, the technicians commenced to calibrate the controller in accordance with Maintenance Department Procedure I.PC-J073-005, "Johnson Controls, INC., Series T-5800 Pneumatic Receiver-Controllers". During the performance of the calibration, the technicians mistakenly recorded the as left data that was obtained while inserting a positive signal in the "as left" section of the data sheet for the negative signal and vice versa. In doing this, the technicians again failed to recognize that the controller was set up in the incorrect configuration.

The technicians subsequently replaced the old controller with the new model and performed the required maintenance testing (controller controlling room temperature satisfactorily, no air leaks at tubing/connections). The post maintenance testing designated in this case was inadequate in that it was without specific criteria on what was required to ensure that the controller was functioning properly. Therefore, the controller was left installed incorrectly which subsequently led to the SBDG being secured during the performance of surveillance testing on October 19, 1995, as a result of high generator outboard bearing temperature.

**LICENSEE EVENT REPORT (LER)**  
TEXT CONTINUATION

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TEXT (If more space is required, use additional copies of NRC Form 366A (1,1))

### III. ANALYSIS OF EVENT

An engineering analysis has determined that the effects of the inlet dampers being closed on the SBDG are minimal. A completed analysis shows that during the time frame from installation of the controller to termination of the operability test (due to the bearing reaching an administrative limit for generator bearing high temperature), the SBDG was operable for the duration of the event and would have performed its required safety function had an emergency start signal been received. This analysis shows that on the highest ambient air temperature (85 degrees F) during the period, the SBDG room temperature would stabilize out at 137 degrees F. This is based upon operator actions of opening the SBDG room door as noted in the annunciator response procedure (which annunciates at 140 degrees F) for high room temperature. This stable room temperature is below the limiting temperature for the room (SBDG governor electronics life expectancy will start to decrease at 150 degrees F).

### IV. CORRECTIVE ACTIONS

On October 20, 1995 the controller was re-configured properly and an oil sample was obtained from the SBDG outboard generator bearing. Results from the sample show no evidence of bearing degradation. The oil was changed out as a conservative measure. A fact finding meeting was held with the personnel involved with the replacement of the controller. Operability testing on the SBDG was completed satisfactorily and the LCO was exited on October 20, 1995.

The 'B' SBDG ventilation temperature controller was verified to be installed correctly. Additionally, other similar controllers installed in the plant were inspected to ensure the controllers were installed correctly. No deficiencies were identified.

Personnel involved with the installation of the controller were counseled as to management expectations.

Additionally, information surrounding this issue will be provided to the technical staff during semi-annual Engineering Support Training. This action will be completed by August 31, 1996.

### V. ADDITIONAL INFORMATION

#### A. Previous similar events:

There is no history of previous similar events.

#### B. EHS System and Component Codes:

EK: Emergency Onsite Power Supply System