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INDUSTRIES INC.

February 15, 1994
NG-94-0640

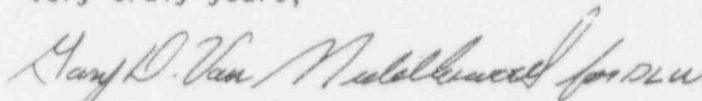
Mr. John B. Martin
Regional Administrator
Region III
U. S. Nuclear Regulatory Commission
801 Warrenville Road
Lisle, IL 60532

Subject: Duane Arnold Energy Center
Docket No: 50-331
Op. License DPR-49
Licensee Event Report #94-003

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
Plant Superintendent - Nuclear

DLW/PC/eah

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)

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

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20543-0001, 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 5
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TITLE (4)
Failure to Establish Secondary Containment During Routine Maintenance

EVENT DATE (5)			LER NUMBER (6)			REPORT NUMBER (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
01	19	94	94	003	00	02	15	94		05000
										05000

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)			
POWER LEVEL (10) 100	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> OTHER
	<input type="checkbox"/> 20.405(a)(1)(iii)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	(Specify in Abstract below and in Text, NRC Form 366A)
	<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME Paul Collingsworth, Technical Support Engineer	TELEPHONE NUMBER (include Area Code) (319) 851-7481
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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 DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On January 24, 1994, while the plant was operating at 100% power, it was determined that Technical Specification Table 3.2-A action statement for the Off Gas vent radiation monitors (RM4116A/B) had not been complied with during routine maintenance on January 19, 1994. The routine maintenance performed on January 19, 1994 had removed these monitors from service without establishing Secondary Containment integrity with the Standby Gas Treatment System operating within one hour.

The Off Gas vent radiation monitors were removed from service on January 19, 1994 at 0235 hour and returned to service on January 19, 1994 at 1414 hours. The Kaman effluent radiation monitors (RM-4176/RM-4175) for the Off Gas stack were operable during the subject maintenance with no abnormal trends indicated. The containment vent and purge valves were closed. All other Primary Containment Isolation System (PCIS) group III instrument isolation functions were operable. There was no effect on the safe operation of the plant.

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

EXPIRES 5-31-95

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TEXT (If more space is required, use additional NRC Form 368A) (17)

I. DESCRIPTION OF EVENT:

On January 24, 1994, the plant was operating at 100% power. There were no Limiting Conditions of Operation (LCO). During the conduct of routine operator log reviews it was discovered that Technical Specification table 3.2-A action statement for the Off Gas vent radiation monitor had not been complied with during maintenance on January 19, 1994.

Technical Specification 3.2.A.1 states that the isolation actuation instrumentation channels shall be operable as shown in table 3.2-A. T.S. Table 3.2-A "Isolation Actuation Instrumentation Action" for the Off Gas vent stack-high radiation requires at least one channel operable per trip system. If this requirement cannot be met Action 26 of T.S. table 3.2-A requires that secondary containment integrity be established with the Standby Gas Treatment System operating within one hour.

The maintenance activity performed on January 19, 1994 required isolating both of the Off Gas vent pipe radiation monitors. Action statement 26 in Technical Specification table (T.S.3.2-A) was not recognized. The radiation monitors were removed from service on January 19, 1994 at 0235 hours and returned to service at 1414 hours.

This condition was identified by the Operations Shift Supervisor at 0838 hours on January 24, 1994. This event was determined to be reportable pursuant to 10CFR50.73(a)(2)(v)(c) and 10CFR50.72(b)(2) (iii)(c) as a condition that alone could have prevented the fulfilment of a safety function since the primary containment isolation system (PCIS) group III signal from the Off Gas vent was not functional during the maintenance activity.

A review of the Operator logs, Operations Shift Supervisor log, and the Containment Isolation Monitoring System (CIMS) log, indicated that all other PCIS group III isolation instrumentation was operable during the subject maintenance on January 19, 1994. The containment vent and purge valves were closed. In addition, the Kaman Off Gas Effluent Monitoring Systems (RM-4176/4175) were operable and indicated no abnormal trends.

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

EXPIRES: 5-31-95

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

II. CAUSE OF EVENT:

The cause of the event was an improperly prepared work document. A contributing factor to the improper work document preparation was the incomplete implementation of Technical Specification amendment 193 which was completed in July 1993. The plant operating procedure referenced to plan the work document for the Off Gas vent pipe radiation monitors did not include the specific operator action prescribed in the applicable technical specification for an inoperable Off Gas radiation monitor.

Other contributing factors include the failure of personnel to follow established work practices concerning use of applicable reference procedures during planning and lack of proper work authorization. Only one plant procedure was referenced to plan the subject work. The second review by the on-shift OSS failed to recognize the inadequate pre-maintenance requirements prescribed on the subject work document.

III. ANALYSIS OF EVENT:

The Off Gas vent pipe radiation monitor isolation signals were added to the containment isolation system to comply with the requirements of NUREG-0737 Item II.E.4.2 (7). This item concerned the automatic closure of the containment vent and purge valves on a high radiation signal. This isolation signal provides the assurance necessary to protect the public against the release of radiation during most severe accident conditions without relying on the operator for manual actions, or automatic isolation based upon relatively slow responses to releases of radioactivity.

The containment vent and purge valves are normally closed except while purging. These valves may be periodically opened for containment venting during normal operations, reactor heatup, or cooldown to control containment pressure. These valves remained closed during the maintenance on January 19, 1994 for the Off Gas radiations monitors.

The post maintenance testing results were found acceptable following the planned maintenance on the sample line for the Off Gas vent pipe radiation monitors. This testing demonstrated that the two radiation monitors were monitoring radiation and capable of performing their required PCIS group III isolation function. The Kaman Off Gas effluent radiation monitors (RM4176/RM4175) were operable throughout the duration of the subject maintenance and would have alerted the operator to increasing levels in the Off Gas system. All other group III PCIS isolation signals were capable of fulfilling the safety function of limiting the release of radioactivity.

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

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TEXT (If more space is required, use additional NRC Form 305A) (17)

IV. CORRECTIVE ACTIONS:

The license amendment process has been revised as documented in Nuclear Generation Division (NGD 102.11) "Nuclear Generation Division Preparation, Review and Processing of Technical Specification/Operating License Change Requests" and Nuclear Licensing Department procedure 1610.1 "Preparation, Review and Processing of Technical Specification/License Change Requests" to ensure complete implementation of a Technical Specification Amendment. An assessment of the effectiveness of the license amendment process will be conducted by Quality Assurance during the scheduled Technical Specification audit. This assessment will be completed by June 1, 1994.

The annunciator response procedures for the off gas vent radiation monitors were revised to ensure the correct action statement was specified. The applicable operating instructions were reviewed and the appropriate action statements were added. This event was discussed with all operations department personnel and the importance of complying with the action statements contained within the plant technical specifications emphasized. The maintenance work documents for the off gas vent radiation monitors were reviewed and revised as necessary to reflect the correct action statement for equipment inoperability.

Additional training will be provided to operations personnel involved in planning and conducting maintenance on the importance of referencing technical specification and complying with the applicable action statements. This training will be completed by June 30, 1994.

A review of all plant procedures impacted by Technical Specification Amendment 193 will be conducted to ensure the applicable action statements are included. This review and required procedure revisions will be completed by April 1, 1994.

V. ADDITIONAL INFORMATION:

A. Previous Similar Events

A review of the DAEC LER's since 1984 identified the following:

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

- LER 93-02, 07, 08
- LER 92-02, 15
- LER 91-11
- LER 90-12
- LER 89-12
- LER 88-05, 12
- LER 87-19, 25
- LER 86-15, 20
- LER 85-32

These LER's reported inadequate tests or procedures.

B. The EIIS System and Component Codes

- JM - Containment Isolation Control System
- BH - Emergency/Standby Gas Treatment System
- IL - Radiation Monitoring System
- IP - Post Accident Monitoring System
- IQ - Sequence of Events Monitoring System
- YL - Plant Exhaust System
- MON - Monitor
- RI - Radiation Indicator

This report is being submitted pursuant to 10CFR50.73(a)(2)(i)(B) and 10CFR50.73(a)(2)(v).