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FPL Energy.
Duane Arnold Energy Center

April 13, 2007

NG-07-0324
10 CFR 50.73

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555-0001

Duane Arnold Energy Center
Docket 50-331
License No. DPR-49

Licensee Event Report #2007-002-00

Please find attached the subject Licensee Event Report (LER) submitted in accordance with 10 CFR 50.73. This letter contains no new NRC commitments.

Gary Van Middlesworth
Site Vice President, Duane Arnold Energy Center
FPL Energy Duane Arnold, LLC

cc: Administrator, Region III, USNRC
Project Manager, DAEC, USNRC
Resident Inspector, DAEC, USNRC

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NRC FORM 366 (6-2004) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 06/30/2007

Estimated burden per response to comply with this mandatory collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

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

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
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4. TITLE

Loss of Control of Control Building Boundary

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
										05000
02	12	2007	2007	- 2 -	0	04	13	2007	FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE

5

10. POWER LEVEL

0

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*

☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ OTHER
☐ 20.2203(a)(2)(vi)	☑ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER *(Include Area Code)*
Thomas R. Byrne - Senior Licensing Engineer	(319) 851-7929

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

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED

○ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ◉ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

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

On February 12, 2007 during Refueling Outage 20 in Mode 5, testing was performed to determine how the control building envelope was affected by opening 2 four inch penetrations from the turbine building into the cable spreading room. Subsequent to the completion of the testing, it was discovered that three additional penetrations had been opened between the control room and cable spreading room, rendering the control building boundary inoperable for a period of time longer than that allowed by Technical Specification 3.7.4, Condition F. Core Alterations had been in progress at the time and were suspended upon discovery that the control building boundary was inoperable.

The control room and cable spreading room are both within the control building boundary. Previously, it was not understood that opening of penetrations within the control building envelope compartments could render the control building boundary inoperable. Additionally, workers were not required to inform the control room operators when penetrations between control building compartments were opened.

There were no actual safety consequences and no effect on public health and safety as a result of this event.

This report is submitted pursuant to the requirements of 10 CFR 50.73(a)(2)(i)(B).

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

I. Description of Event:

Sometime on or about February 11, 2007, 3 eight inch penetrations were opened between the control room floor and the cable spreading room. The exact time that the 3 eight inch penetrations were opened is unclear. When this event was determined to be reportable, the temporary contract personnel who opened the penetrations were unavailable for interviews, since they had already left the plant site. The time they were opened has been estimated to be around midnight on February 11, 2007.

On February 12, 2007 at 0416, a test was performed to evaluate the impact of opening 2 four inch penetrations between the turbine building and the cable spreading room on control room positive pressure. The initial value of the control room pressure for the test was 0.1 inch of water. This value was established with the 3 eight inch penetrations open. At the beginning of the test, data was stable and showed an acceptable value for the control building pressure. The test was completed on February 12, 2007 at 0519.

However, the final pressure measured from the test showed a value of 0.095 inches of water. During the performance of the test, controls were not in place to limit opening of doors to the control room, which would lower the measured pressure, and the conditions for performance of a surveillance test meeting the requirements of Technical Specification Surveillance Requirement 3.7.4.4 were not established. Consequently, as a result of the final measured control room pressure and the uncertainty associated with the test conditions, the control building boundary was conservatively declared inoperable February 12, 2007 at 1052. The control building boundary had potentially been inoperable for as much as 34 hours and 52 minutes with Core Alterations in progress, a condition prohibited by Technical Specifications. Technical Specification 3.7.4, Condition F requires that Core Alterations be suspended immediately upon discovery of an inoperable control building boundary. Subsequent surveillance testing proved the ability of the Standby Filter Unit (SFU) System to fulfill its function to maintain a control room positive pressure of greater than or equal to 0.1 inches water gauge relative to the outside atmosphere during the isolation mode of operation.

There were no other structures, systems, or components inoperable at the start of the event that contributed to the event.

II. Assessment of Safety Consequences:

There was no adverse effect to the plant. Once the condition was identified, fuel movement was immediately suspended per the requirements of Technical Specification 3.7.4, Condition F.

Based on the testing completed, it is believed that the SFU System was available during the time period the control building boundary was declared inoperable and could have maintained the required positive pressure and, therefore, no loss of filtration occurred. Therefore, it is believed that control building habitability was maintained during the period that the penetrations were opened.

A quantitative assessment of the risk associated with this event was not performed since this event did not involve a loss of residual heat removal, a loss of offsite power or a loss of reactor inventory, and therefore had no effect on Core Damage Frequency (CDF) or Large Early Release Fraction (LERF). It is

believed that the SFU system would still mitigate those accidents for which it is designed to mitigate in the refueling mode, such as a fuel handling accident, with no effect on LERF.

By assessment of the control building design, it is believed air flows would have progressed from the control room to the cable spreading room. This is supported by the fact that the air supply to the control room is designed to maintain the control room at a higher pressure. Therefore, it is believed no inleakage from the cable spreading room to the control room will occur.

III. Cause of Event:

Previously, it was not understood that opening of penetrations within the control building envelope compartments could render the control building boundary inoperable. The control building at the Duane Arnold Energy Center (DAEC) is atypical in that the control room is not isolated from the rest of the control building. The control room proper is to be capable of being maintained at greater than or equal to 0.1 inches of water positive pressure with respect to the outside atmosphere. This assures that unfiltered air does not reach the control room in the isolation mode. Other areas of the control building that directly communicate with the control room via HVAC system ductwork or doors are also required to maintain a positive pressure relative to the adjacent areas outside the control building. This will assure that leakage is from the control building to the adjacent areas or outdoors.

The work order steps that opened the 3 eight inch penetrations between the control room floor and the cable spreading room were not followed properly, thereby creating a condition that the control room operators were not aware of. DAEC staff also did not understand that opening of penetrations within the control building envelope compartments could render the control building boundary inoperable. Additionally, workers were not directly required to inform the control room operators that they were opening control building penetrations within the control building.

IV. Corrective Actions:

- Procedure ACP 1408.1, Work Orders, was updated to require that, in order to open any penetration in the control building envelope, a control building penetration control form be filled out and forwarded to the control room supervisor for signature prior to opening the penetration. This ensures that control room operators will be made aware of any plans to open control building penetrations and judge whether these plans are acceptable based on the current plant operating mode or other condition specified in the Technical Specification Applicability. (PCR045165)

- Plant personnel were coached on appropriate work controls with respect to control room operator notification prior to starting work.

- Operators will be briefed on this event and the administrative changes made to prevent recurrence during upcoming Operator Requal Training. (RFT045699)

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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

V. Additional Information:

Previous Similar Occurrences:

A review of LERs and operator logs at the DAEC over the last 5 years identified no LERs or other similar events with similar causes.

EIIS System and Component Codes:

Control Building/Control Complex Environmental Control System VI

Reporting Requirements:

This report is being submitted under 10 CFR 50.73(a)(2)(i)(B).