NEXTera ENERGY
DUANE ARNOLD

October 6, 2015

NG-15-0296
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
Renewed Op. License No. DPR-49

Licensee Event Report #2015-004

Please find attached the subject report submitted in accordance with 10 CFR 50.73. This letter makes no new commitments or changes to any existing commitments.

T. A. Vehec
Vice President, Duane Arnold Energy Center
NextEra Energy Duane Arnold, LLC

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

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NRR

NRC FORM 366 (02-2014) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 01/31/2017

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollects.Resource@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 Page 2 for required number of digits/characters for each block)

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

Both Doors in Secondary Containment Airlock Opened Concurrently

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
									N/A	N/A
08	27	2015	2015	- 004	- 00	10	06	2015	FACILITY NAME: N/A	DOCKET NUMBER: N/A

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*			
1	☐ 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)
10. POWER LEVEL	☐ 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)
100%	☐ 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

LICENSEE CONTACT	TELEPHONE NUMBER *(Include Area Code)*
Laura B. Swenzinski, Senior Licensing Engineer	(319) 851-7724

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
X	JM	IEL	Alarm Lock	N	N/A	N/A	N/A	N/A	N/A

14. SUPPLEMENTAL REPORT EXPECTED	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO				

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

On August 27, 2015, while operating at 100% power, workers opened doors concurrently when entering a secondary containment access airlock. The individuals involved each closed their respective doors upon encountering this unexpected condition; however, the result was a brief inoperability of secondary containment integrity. This resulted in an 8 hour reportable event. The Resident Inspector was notified, and an Event Notification was made pursuant to 10 CFR 50.72(b)(3)(v)(C) due to a condition at the time of discovery that prevented the fulfillment of the Secondary Containment safety function (Reference EN#52353).

Following the event, the doors were verified to be functioning properly via Surveillance Test Procedure. A Root Cause Evaluation was conducted in May 2015 which determined the root cause of this event is that the airlock door interlock is not designed to prevent more than one airlock door from opening under all possible conditions.

This event did not result in a safety system functional failure. There were no radiological releases associated with this event.

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NARRATIVE

I. Description of Event:

On August 27, 2015 at 0752, while operating at 100% power, the Control Room Supervisor (CRS) was notified that Door 225 and Door 227, both in Secondary Containment Airlock 216, had been opened concurrently. The doors being open at the same time caused a failure to meet SR 3.6.4.1.2 to verify that either the outer door(s) or the inner door(s) in each Secondary Containment access opening are closed. The identified condition caused Secondary Containment to be considered inoperable per TS LCO 3.6.4.1. The individuals involved immediately closed their respective doors upon encountering this unexpected condition. This action allowed SR 3.6.4.1.2 to be met, and restored Secondary Containment to an operable status.

This resulted in an 8 hour reportable event. The Resident Inspector was notified, and an Event Notification was made pursuant to 10 CFR 50.72(b)(3)(v)(C) due to a condition at the time of discovery that prevented the fulfillment of the Secondary Containment safety function (Reference EN#51353). Secondary containment leak tightness is required to ensure that the release of radioactive materials from the primary containment is restricted to those leakage paths and associated leakage rates assumed in the accident analysis and that fission products entrapped within the secondary containment structure will be treated by the Standby Gas Treatment System prior to discharge to the environment.

The Secondary Containment airlock utilizes an interlock device with an adjustable permanent magnet (mounted on the door), and an electromagnet (on the door frame) arranged in an electrical circuit so that door(s) are held closed and/or are allowed to open. Immediately following the event, on August 27, 2015 at 0952 hours, surveillance testing was performed satisfactorily per Surveillance Test Procedure (STP) 3.6.4.1-02, Secondary Containment Airlock Verification.

There were no radiological releases associated with this event. There were no other structures, systems or components inoperable at the start of this event that contributed to the event.

II. Assessment of Safety Consequences:

There were no actual safety consequences associated with this event; the potential safety consequences were minimal. Both doors on the airlock were open simultaneously for less than 10 seconds, and were able to close immediately upon discovery of the condition.

This event will not be reported as a safety system functional failure since an engineering analysis (Corrective Action ACE1968923-01) determined that the system is capable of performing its safety function during events when the airlock is open for less than 10 seconds. The post-LOCA dose calculation does not credit secondary containment integrity for mitigation of on-site and off-site doses for the first 5 minutes of the event. Therefore, this event is bounded by the existing dose calculation.

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This event did not result in a safety system functional failure. There were no automatically or manually initiated safety system responses.

III. Cause of Event:

Technical Specifications Surveillance Requirement SR 3.6.4.1.2 requires one inner or one outer secondary containment airlock door to be closed at all times. A Root Cause Evaluation was conducted in May 2015 which determined the root cause of this event is that the airlock door interlock is not designed to prevent more than one airlock door from opening under all possible conditions. Specifically, the interlock may allow opening both doors in an airlock if both permissive buttons are depressed simultaneously.

IV. Corrective Actions:

An operational check of the Secondary Containment door interlocks is performed monthly via STP 3.6.4.1-02, Secondary Containment Airlock Verification. Signs are installed at each airlock door instructing personnel who are accessing or leaving the airlock to wait 2 seconds after activating the interlock before opening the door. This 2 second delay allows additional time for the interlock mechanism to actuate and prevent the other door from being opened.

To further reduce the likelihood of recurrence, cameras have been installed at Door 228 on the Reactor Building side and at Door 225 on the Access control side. Monitors showing the view of the opposite camera are installed at these locations. Personnel have been instructed on how to use the monitors to prevent simultaneous airlock access. Additionally, Door 227 has been posted as emergency use only.

V. Additional Information:

Previous Similar Occurrences:

A review of DAEC Licensee Event Reports from the past 5 years identified five similar occurrences, reference LER 2013-006, LER 2014-002, LER 2014-003, LER 2015-001 and LER 2015-003.

A review of the corrective action program identified additional occurrences of airlock conditions causing momentary secondary containment inoperability - nine additional occurrences in the past two years, with five of those occurring in the last year.

EIIS System and Component Codes:

IEL Interlock

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Reporting Requirements:

This event is being reported as an event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to control the release of radioactive material, 10CFR50.73(a)(2)(v)(C).