NEXTera ENERGY
DUANE ARNOLD

August 30, 2012

NG-12-0346
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 #2012-004-00

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.

Richard L. Anderson
Vice President, Duane Arnold Energy Center
NextEra Energy Duane Arnold, LLC

IE22
NRR

NRC FORM 366 (10-2010) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES: 10/31/2013

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 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

High Pressure Coolant Injection Declared Inoperable

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	05000
07	02	12	2012	004	0	08	30	12	FACILITY NAME N/A	DOCKET NUMBER 05000

9. OPERATING MODE

1

10. POWER LEVEL

100%

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)	VOLUNTARY LER

12. LICENSEE CONTACT FOR THIS LER

NAME	TELEPHONE NUMBER *(Include Area Code)*
Robert J. Murrell, Engineering Analyst	(319) 851-7900

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 July 2, 2012, at 15:05, while operating at 100% power, a spurious isolation of the High Pressure Coolant Injection (HPCI) Outboard Steam Supply Valve and Outboard Torus Suction Valve occurred. The isolation resulted from a trip of the HPCI Steam Leak Detection (SLD) system. Immediate investigations into the event determined that there was no steam leak and the probable cause was from a bad connection in the SLD system. Subsequent investigation identified a broken solid conductor thermocouple extension wire. The wire was damaged earlier in the day as part of maintenance activities investigating erroneous readings on unrelated circuits. The damaged wire was replaced and HPCI was declared operable on July 3, 2012, at 0002. The root cause of this event was an inadequate installation position of a recorder in the control room panel. The recorder was installed in such a manner that the removal of its terminal cover placed excessive stress on the thermocouple wire resulting in its failure.

This condition was reported under 10 CFR 50.72(b)(3)(v)(D), any event or condition that at the time of discovery could have prevented the fulfillment of the safety function of the structures or systems that are needed to mitigate the consequences of an accident. Reference EN#48064.

The safety significance of this event was minimized by the fact that all other Emergency Core Cooling Systems (ECCS) remained fully operable during the time that HPCI was inoperable.

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		YEAR	SEQUENTIAL NUMBER	REV NO.	
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NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

I. Description of Event:

On July 2, 2012, at 15:05, while operating at 100% power, a spurious isolation of the High Pressure Coolant Injection (HPCI) (System Code BG) Outboard Steam Supply Valve and Outboard Torus Suction Valve occurred. The isolation resulted from a trip of the HPCI Steam Leak Detection (SLD) system. Immediate investigations into the event determined that there was no steam leak and the probable cause was from a bad connection in the SLD system. Subsequent investigation identified a broken solid conductor thermocouple extension wire. The wire was damaged earlier in the day as part of maintenance activities investigating erroneous readings unrelated circuits. The damaged wire was replaced and HPCI was declared operable on July 3, 2012, at 0002.

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

II. Assessment of Safety Consequences:

During the period HPCI was inoperable, all other Emergency Core Cooling Systems were operable, and therefore fully capable of mitigating the consequences of an accident had it occurred.

This event did result in a safety system functional failure.

III. Cause of Event:

A root cause evaluation was completed for this event. The root cause of this event was an inadequate installation position of a recorder in the control room panel. The recorder was installed in February 2007 in such a manner that the removal of its terminal cover placed excessive stress on the thermocouple wire resulting in its failure.

IV. Corrective Actions:

On July 03, 2012, all maintenance activities associated with replacing the failed thermocouple wire were completed, and HPCI was declared operable.

The following actions are planned to address the root cause of this event:

Installation of signs inside the cabinet containing the SLD thermocouple wires warning of the potential fragility of the wires in the vicinity of the terminal covers for the associated recorders.

Completion of an inspection of other thermocouple wires associated with recorders installed by the Engineering Change Package that installed the recorder identified as the root cause of this event.

Revision of the model Work Order associated with work inside the cabinet containing the SLD thermocouple wires to require maintenance technicians be briefed on the susceptibility of the SLD wires to break.

V. Additional Information:

Previous Similar Occurrences:

A review of License Event Reports from the past 5 years did not identify any previous similar occurrences where HPCI was declared inoperable due to an invalid SLD isolation.

EIIS System and Component Codes:

BJ - High Pressure Coolant Injection System (BWR)

Reporting Requirements:

This event is being reported as an Event or Condition that Could Have Prevented Fulfillment of a Safety Function, 10CFR50.73(a)(2)(v)(D). Additionally, this event was reported under 50.72(b)(3)(v)(D), any event or condition that at the time of discovery could have prevented the fulfillment of the safety function of the structures or systems that are needed to mitigate the consequences of an accidentjidiekdihfjiejfieikdbobmurrelll. Reference EN#48064.