NEXTera ENERGY
DUANE ARNOLD

December 16, 2010

NG-10-0626
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 #2010-004-00

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.

Christopher R. Costanzo
Vice President, Duane Arnold Energy Center
NextEra Energy Duane Arnold, LLC

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

LICENSEE EVENT REPORT (LER)

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

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.

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Duane Arnold Energy Center	05000331	1 OF 3

4. TITLE

Linear Indication Found During Examination of Safe-End to Nozzle Welds

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	DOCUMENT NUMBER
									N/A	**05000**
10	29	10	2010	004	0	12	16	10	N/A	**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)	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	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
☒ YES (*If yes, complete 15. EXPECTED SUBMISSION DATE*) ☐ NO		01	22	2011

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

Safe-end to nozzle weld RRA-F002A was scheduled in Refuel Outage (RFO) 22 as an examination under BWRVIP-75 and as a successive examination under ASME Section XI. On October 29, 2010, UT examination of the N2A reactor recirculation riser safe-end to nozzle weld, RRA-F002A, identified a circumferential flaw. The RRA-F002A circumferential weld indication was approximately 6.5" and 71% through-wall (TW), and identified as Inner Diameter (ID) surface connected. As part of the BWRVIP and ASME Section XI Inspection Programs, the inspection population was expanded to determine the extent of condition. There were three additional welds that required examination in accordance with guidance BWRVIP-75. The welds were RRG-F002A, RRF-F002A, and RRH-F002A. The UT examinations for all three welds were completed with no indications of flaws noted.

RRA-F002A was subsequently overlaid following verbal approval on November 15, 2010 of the relief request dated November 10, 2010 (ML 103160155).

The root cause and safety consequences of this event will be documented in a supplement to this Licensee Event Report. There were no Systems, Structures, or Components inoperable at the time of the event that contributed to the event.

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

I. Description of Event:

During the Duane Arnold refueling outage 22 (RFO22), ultrasonic (UT) examinations of welds susceptible to IGSCC were performed in accordance with the BWRVIP-75 and ASME Section XI inspection programs. On October 29, 2010, while in Mode 5 and shutdown for RFO22 for refueling activities, UT examination of the N2A reactor recirculation riser safe-end to nozzle weld, RRA-F002A, identified a circumferential flaw. The RRA-F002A circumferential weld indication was approximately 6.5" and 71% through-wall (TW) and identified as Inner Diameter (ID) surface connected. As part of the BWRVIP and ASME Section XI Inspection Programs, the inspection population was expanded to determine the extent of condition. There were three additional welds that required examination in accordance with guidance BWRVIP-75. The welds were RRG-F002A, RRF-F002A, and RRH-F002A. The UT examinations for all three welds were completed with no indications of flaws noted.

RRA-F002A was subsequently overlaid under an NRC verbally approved relief request.

This event was reported to the NRC as an 8 hour event under 10 CFR 50.72(b)(3)(ii)(A), Any event or condition that results in: (A) The condition of the nuclear power plant, including its principal safety barriers, as documented in Event Notification number 46379.

II. Assessment of Safety Consequences:

This report is being submitted pursuant to 10CFR50.73(a)(2)(ii)(A).

An evaluation of the known sized flaws is currently being performed to determine whether the flaw identified on RRA-F002A met the acceptance criteria established in ASME Section XI, IWB-3600. This evaluation will be included in the sites currently open Root Cause Evaluation and reported as a supplemental Licensed Event Report (LER).

This event did not result in a Safety System Functional Failure.

III. Cause of Event:

An evaluation of the flaws is currently being performed to determine the cause of the flaw identified on RRA-F002A. This evaluation will be included in the sites currently open Root Cause Evaluation and reported as a supplemental LER.

IV. Corrective Actions:

A modification was planned to perform repairs of the safe-end to nozzle welds. The repair was to overlay the flawed weld with material (Alloy 52) resistant to Stress Corrosion Cracking (SCC). The implementation of the overlay required a relief request from the NRC to approve the use of a non-NRC approved code case (N-504-4). The overlay was successfully applied and the ultrasonic examination results were found to be acceptable.

Any additional corrective actions initiated from the RCE for this event will be documented in the supplement to this LER.

V. Additional Information:

Previous Similar Occurrences:

Previous Similar Occurrences:

1. LER 1999-006, "Indications in Recirculation Riser Nozzle-to-Safe End Welds."

In 1999, stress corrosion cracking was found in two safe-end to nozzle welds (RRB-F002 and RRD-F002). Both of these welds were overlaid using an approved relief request from the NRC.

2. LER 2007-003, "Linear indications found during UT examination of safe-end to nozzle welds."

In 2007, stress corrosion cracking was found in two safe-end to nozzle welds (RRF-F002 and RRC-F002). Both of these welds were overlaid using an approved relief request from the NRC.

EIIS System and Component Codes:

AD - Reactor Recirculation System

Reporting Requirements:

This report is being submitted under 10 CFR 50.73(a)(2)(ii)(A)