



June 15, 2010

NG-10-0328
10 CFR 50.55a

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

Response to Supplemental Request for Additional Information Related to Relief
Request for 1st Period Limited Weld Examinations

- Reference:
1. Letter, Richard L. Anderson (NextEra Energy Duane Arnold, LLC) to Document Control Desk (USNRC), Relief Request for 1st Period Limited Weld Examinations, dated July 30, 2009, NG-09-0539 (ML092230346)
 2. Letter, Christopher R. Costanzo (NextEra Energy Duane Arnold, LLC) to Document Control Desk (USNRC), Response to Request for Additional Information Related to Relief Request for 1st Period Limited Weld Examinations, dated February 25, 2010, NG-10-0094 (ML100680431)

Reference 1 provided a request for relief regarding the 1st period limited weld examinations. This relief is requested for the Fourth Ten year Interval of the Inservice Inspection Program for the Duane Arnold Energy Center (DAEC), which ends on February 21, 2014.

Reference 2 provided additional information regarding the request for relief regarding the 1st period limited weld examinations of Reference 1.

In an email dated May 24, 2010, the Staff issued another request for additional information regarding Reference 1. The response to this email is provided in the enclosure to this letter.

NextEra Energy Duane Arnold, LLC requests approval of the requests of Reference 1 by July 30, 2010.

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This letter contains no new commitments nor revises any previous commitments.

If you have any questions, please contact Steve Catron at (319) 851-7234.

A handwritten signature in black ink that reads "Christopher R. Costanzo". The signature is written in a cursive style with a large initial 'C'.

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

Enclosure

Enclosure

**Response to Request for Additional Information Related to Relief Request for
1st Period Limited Weld Examinations**

**Response to Request for Additional Information Related to Relief Request for
1st Period Limited Weld Examinations**

NRC Question #1:

For CUA-J024 weld in the Reactor Water Cleanup System, this is a weld between a forged penetration and a cast valve, 50% coverage was probably the best coverage to be expected by the inspection. You have said in the July 30, 2009 submittal that 50% coverage is OK because the weld is not susceptible to IGSCC. But the only reason that weld is in RI Category 2 is because it is susceptible to IGSCC, otherwise, it is Category 4. Please clarify this apparent discrepancy.

NextEra Energy Duane Arnold Response:

The CUA-J024 weld in the Reactor Water Cleanup System is a Category 4 weld. Please refer to Attachment 1 for 4th interval inspection information for Category 4 welds from the Duane Arnold Energy Center (DAEC).

NRC Question #2:

There is an inconsistency in the documentation provided. Page 1 of 1 on report no. UT-07-029 "UT Calibration/Examination" shows the exam angle of the Search Unit as "60°," and the mode is listed as "shear." But Page 2 of 2 on UT-07-028 "Supplemental Report" shows a sketch of the inspection configuration and it includes a notation that the transducer was at "60°" RL, not 60°, shear mode. Please clarify.

NextEra Energy Duane Arnold Response:

On UT-07-029, the mode should have been listed as Longitudinal. This is a typographical error; the datasheet has been corrected and an image of the corrected datasheet is provided as Attachment 2.

NRC Question #3:

Please clearly identify the wave modality, insonification angles, and scan directions used for all ultrasonic examinations.

NextEra Energy Duane Arnold Response:

The following table is provided with information from the examination datasheets:

Weld	Wave Mode	Insonification Angles	Scan Direction
HCC-C001	Refracted Longitudinal	60°	Upstream (Axial), CW & CCW (Parallel)
RMA-J004	Shear Longitudinal	45° 60°	Downstream, CW & CCW Downstream
CUA-J024	Shear Longitudinal	45° 60°	Upstream, CW & CCW Upstream

NRC Question #4:

Did the inspection exam category R-A meet ASME Code, Section XI, App VIII qualification requirements?

NextEra Energy Duane Arnold Response:

Yes, ASME Section XI Code Case N-578 paragraph -2500 (c) states “Examination qualification and methods and personnel qualifications shall be in accordance with the Edition and Addenda of Section XI specified in the Owner’s Inservice Inspection Program.”

NRC Question #5:

Supply a description of the materials of construction for the B1.40 RV head to flange weld and the R1.16 RMA-J004 weld.

NextEra Energy Duane Arnold Response:

Please refer to the following table for materials of construction:

Weld	Materials
HCC-C001	A508 Class 2 – head flange SA533 Class 1 GR. B – side plate
RMA-J004	A182 304SS - sock-o-let A240 304SS – pipe

NRC Question #6:

Provide a better copy of the photo in submittal for CUA-J024 weld.

NextEra Energy Duane Arnold Response:

Please refer to Attachment 3 for photos.

NRC Question #7:

The original July 30, 2009 submittal includes the following statement:

“The Nondestructive Examination (NDE) procedure used for this examination incorporates the examination techniques qualified under Appendix VIII of the ASME Section XI Code by the Performance Demonstration Initiative (PDI). That procedure was approved under Relief Request NDE-R008 on January 31, 2007.”

The January 31, 2007 document provides authorization to use an alternative to Code requirements, not NRC approval of a procedure. Reword this paragraph to reflect the fact that the NRC authorized the use of the alternative for the remainder of the 4th ISI interval at DAEC.

NextEra Energy Duane Arnold Response:

NextEra Energy Duane Arnold hereby rewords the statement in Reference 1 as follows (change in italics):

“The Nondestructive Examination (NDE) procedure used for this examination incorporates the examination techniques qualified under Appendix VIII of the ASME Section XI Code by the Performance Demonstration Initiative (PDI). That *alternative* was approved under Relief Request NDE-R008 on January 31, 2007.”

References:

1. Letter, Richard L. Anderson (NextEra Energy Duane Arnold, LLC) to Document Control Desk (USNRC), Relief Request for 1st Period Limited Weld Examinations, dated July 30, 2009, NG-09-0539 (ML092230346)
2. Letter, Christopher R. Costanzo (NextEra Energy Duane Arnold, LLC) to Document Control Desk (USNRC), Response to Request for Additional Information Related to Relief Request for 1st Period Limited Weld Examinations, dated February 25, 2010, NG-10-0094 (ML100680431)

Attachment 1
4th Interval History for Category 4 Welds

Duane Arnold Nuclear Plant

4th Interval

Category 4

Category, Item No., Class	Summary No. ComplID System	Outage / Scope / Method Type / Procedure	Dwg/ISO No. Comp. Desc. Code Case	Period		
				Period 1	Period 2	Period 3
R-A R1.16-4 1	61200-RI CSA-F002A CS	RFO-21 / ISI / UT / / ACP1211.38 SE EXT - SAFEEND	1.2-07 SHT-01 AUG	RFO-20-1 c - - - c - - -	RFO-22 - - - - - - - -	RFO-23 - - - - - - - -
R-A R1.16-4 1	61400-RI CSA-F004 CS	RFO-21 / ISI / UT / / ACP1211.38 PIPE - PIPE	1.2-07 SHT-01 AUG	c - - - c - - -	- - - - - - - -	- - - - - - - -
R-A R1.16-4 1	61600-RI CSA-J003 CS	RFO-21 / AUG / UT / / ACP1211.20 RFO-22 / ISI / UT / / ACP1211.20	1.2-07 SHT-01 AUG	- - - - c - - -	- - - - s - - -	- - - - - - - -
R-A R1.16-4 1	64500-RI CSB-F002A CS	RFO-20-1 / ISI / UT / UT / ACP1211.38 RFO-20-1 / ISI / UT / UT / ACP1211.38 RFO-20-1 / ISI / UT / UT / ACP1211.38 RFO-20-1 / ISI / UT / UT / ACP1211.38	1.2-08 SHT-01 SAFEEND - SVE Extension AUG	c - - - c - - -	- - - - - - - -	- - - - b - - -
R-A R1.16-4 1	64700-RI CSB-F004 CS	RFO-22 / ISI / UT / / ACP1211.38 PIPE - PIPE	1.2-08 SHT-01 AUG	- - - - c - - -	s - - - - - - -	- - - - b - - -
R-A R1.16-4 1	64900-RI CSB-J003 CS	RFO-20-1 / ISI / UT / UT / ACP1211.20 RFO-20-1 / ISI / UT / UT / ACP1211.20	1.2-08 SHT-01 PIPE AUG	c - - - c - - -	- - - - - - - -	- - - - b - - -
R-A R1.16-4 1	74600-RI CUA-J024 CU	RFO-20-1 / ISI / UT / UT / ACP1211.20 RFO-20-1 / ISI / UT / UT / ACP1211.20	1.2-11A SHT-01 PIPE - MOTOR OPERATED GATE AUG	c - - - c - - -	- - - - - - - -	- - - - b - - -
R-A R1.16-4 1	103000-RI RCA-F002 RC	RFO-22 / AUG / UT / / Zetec_OmniScanPA_03	1.2-19A SHT-01 NOZZLE - SAFEEND AUG	- - - - c - - -	- - - - b - - -	- - - - - - - -
R-A R1.16-4 1	103200-RI RCA-J003 RC	1.2-19A SHT-01 SAFEEND - PIPE	1.2-19A SHT-01 AUG	- - - - - - - -	- - - - - - - -	- - - - - - - -

Duane Arnold Nuclear Plant

4th Interval

Category 4

			Period 1	Period 2	Period 3
Category, Item No., Class	Summary No. ComplID System	Outage / Scope / Method Type / Procedure	RFO-20-1 RFO-21	RFO-22	RFO-23
R-A	103500-RI	RFO-22 / ISI / UT / / ACP1211.20 □ 1.2-19A SHT-01 PIPE - 90 DEGREE LONG RADIUS ELBOW	-	s	-
R1.16-4 1	RCA-J004 RC	ISI AUG	-	-	-
R-A	103900-RI	RFO-22 / ISI / UT / / ACP1211.20 □ 1.2-19A SHT-01 90 DEGREE LONG RADIUS ELBOW - PIPE	-	s	-
R1.16-4 1	RCA-J005 RC	ISI AUG	-	-	-
R-A	104500-RI	1.2-19A SHT-01 PIPE	-	-	-
R1.16-4 1	RCA-J006 RC	ISI AUG	-	-	-
R-A	104800-RI	1.2-19A SHT-01 PIPE	-	-	-
R1.16-4 1	RCA-J008 RC	ISI AUG	-	-	-
R-A	105100-RI	RFO-23 / ISI / / / □ 1.2-19A SHT-01 PIPE - 90 DEGREE LONG RADIUS ELBOW	-	-	s
R1.16-4 1	RCA-J012 RC	ISI AUG	-	-	-
R-A	105500-RI	1.2-19A SHT-01 90 DEGREE LONG RADIUS ELBOW - MOTOR OPERATED GATE	-	-	-
R1.16-4 1	RCA-J013 RC	ISI AUG	-	-	-
R-A	105700-RI	1.2-19A SHT-01 MOTOR OPERATED GATE - PIPE	-	-	-
R1.16-4 1	RCA-J015 RC	ISI AUG	-	-	-
R-A	106400-RI	RFO-22 / ISI / UT / / ACP1211.20 □ 1.2-19A SHT-01 PIPE - 90 DEGREE SHORT RADIUS ELBOW	-	s	-
R1.16-4 1	RCA-J021 RC	ISI AUG	-	-	-
R-A	106800-RI	1.2-19A SHT-01 90 DEGREE SHORT RADIUS ELBOW - UNKNOWN PUMP TYPE -	-	-	-
R1.16-4 1	RCA-J022 RC	ISI AUG	-	-	-

Duane Arnold Nuclear Plant

4th Interval

Category 4

Category, Item No., Class	Summary No. ComplID System	Outage / Scope / Method Type / Procedure	Dwg/ISO No. Comp. Desc. Code Case	Period 1			Period 2			Period 3		
				RFO-20-1	RFO-21		RFO-22			RFO-23		
R-A	107000-RI		1.2-19A SHT-01	-	-	-	-	-	-	-	-	-
R1.16-4	RCA-J024		UNKNOWN PUMP TYPE - PIPE	-	-	-	-	-	-	-	-	-
1	RC		AUG	-	-	-	-	-	-	-	-	-
R-A	107500-RI		1.2-19A SHT-01	-	-	-	-	-	-	-	-	-
R1.16-4	RCA-J028		PIPE - MOTOR OPERATED GATE	-	-	-	-	-	-	-	-	-
1	RC		AUG	-	-	-	-	-	-	-	-	-
R-A	107700-RI		1.2-19A SHT-01	-	-	-	-	-	-	-	-	-
R1.16-4	RCA-J030		MOTOR OPERATED GATE - 90 DEGREE	-	-	-	-	-	-	-	-	-
1	RC		LONG RADIUS ELBOW	-	-	-	-	-	-	-	-	-
R-A	108100-RI		1.2-19A SHT-01	-	-	-	-	-	-	-	-	-
R1.16-4	RCA-J032		90 DEGREE LONG RADIUS ELBOW -	-	-	-	-	-	-	-	-	-
1	RC		PIPE	-	-	-	-	-	-	-	-	-
R-A	108800-RI		1.2-19A SHT-01	-	-	-	-	-	-	-	-	-
R1.16-4	RCA-J038		PIPE	-	-	-	-	-	-	-	-	-
1	RC		AUG	-	-	-	-	-	-	-	-	-
R-A	109300-RI		1.2-19A SHT-01	c	-	-	-	-	-	-	-	-
R1.16-4	RCA-J041		RFO-20-1 / ISI / UT / UT /	-	-	-	-	-	-	-	-	-
1	RC		ACP1211.20	-	-	-	-	-	-	-	-	-
			RFO-20-1 / ISI / UT / UT /	-	-	-	-	-	-	-	-	-
			ACP1211.20	-	-	-	-	-	-	-	-	-
			RFO-20-1 / ISI / UT / UT /	-	-	-	-	-	-	-	-	-
			ACP1211.20	-	-	-	-	-	-	-	-	-
			RFO-20-1 / ISI / UT / UT /	-	-	-	-	-	-	-	-	-
			ACP1211.20	-	-	-	-	-	-	-	-	-
R-A	126100-RI		1.2-21A SHT-01	-	c	-	-	-	-	-	-	-
R1.16-4	RCB-F002		RFO-21 / ISI / UT / / ACP1211.38	-	c	-	-	-	-	-	-	-
1	RC		NOZZLE - SAFEEND	-	B	-	-	-	-	-	-	-
			Zetec_OmniScanPA_03	-	-	-	-	-	-	-	-	-
R-A	126300-RI		1.2-21A SHT-01	-	-	-	-	-	-	-	-	-
R1.16-4	RCB-J003		SAFEEND - PIPE	-	-	-	-	-	-	-	-	-
1	RC		AUG	-	-	-	-	-	-	-	-	-
R-A	126700-RI		1.2-21A SHT-01	-	-	-	-	-	-	-	-	-
R1.16-4	RCB-J004		PIPE - 90 DEGREE LONG RADIUS	-	-	-	-	-	-	-	-	-
1	RC		ELBOW	-	-	-	-	-	-	-	-	-
			AUG	-	-	-	-	-	-	-	-	-

Duane Arnold Nuclear Plant

4th Interval

Category 4

Category, Summary No.			Outage / Scope / Method			Dwg/ISO No.			Period 1	Period 2	Period 3	
Item No., Class	ComplID System	ComplD System	Type / Procedure	Type / Procedure	Type / Procedure	Comp. Desc. Code Case	Comp. Desc. Code Case	Comp. Desc. Code Case	RF0-20-1	RF0-21	RF0-22	RF0-23
R-A	127300-RI					1.2-21A SHT-01	1.2-21A SHT-01	1.2-21A SHT-01	-	-	-	-
R1.16-4	RCB-J005	RC				90 DEGREE LONG RADIUS ELBOW - PIPE	AUG		-	-	-	-
1									-	-	-	-
R-A	127600-RI					1.2-21A SHT-01	1.2-21A SHT-01	1.2-21A SHT-01	-	-	-	-
R1.16-4	RCB-J006	RC				PIPE - TEE	AUG		-	-	-	-
1									-	-	-	-
R-A	128000-RI					1.2-21A SHT-01	1.2-21A SHT-01	1.2-21A SHT-01	-	-	-	-
R1.16-4	RCB-J007	RC				TEE - PIPE	AUG		-	-	-	-
1									-	-	-	-
R-A	128800-RI					1.2-21A SHT-01	1.2-21A SHT-01	1.2-21A SHT-01	-	-	-	-
R1.16-4	RCB-J015	RC				PIPE - 90 DEGREE LONG RADIUS ELBOW	AUG		-	-	-	-
1									-	-	-	-
R-A	129200-RI					1.2-21A SHT-01	1.2-21A SHT-01	1.2-21A SHT-01	-	-	-	-
R1.16-4	RCB-J016	RC				90 DEGREE LONG RADIUS ELBOW - MOTOR OPERATED GATE	AUG		-	-	-	-
1									-	-	-	-
R-A	129400-RI					1.2-21A SHT-01	1.2-21A SHT-01	1.2-21A SHT-01	-	-	-	-
R1.16-4	RCB-J018	RC				MOTOR OPERATED GATE - PIPE	AUG		-	-	-	-
1									-	-	-	-
R-A	130100-RI					1.2-21A SHT-01	1.2-21A SHT-01	1.2-21A SHT-01	-	-	-	-
R1.16-4	RCB-J024	RC				PIPE - 90 DEGREE SHORT RADIUS ELBOW	AUG		-	-	-	-
1									-	-	-	-
R-A	130500-RI					1.2-21A SHT-01	1.2-21A SHT-01	1.2-21A SHT-01	-	-	-	-
R1.16-4	RCB-J025	RC				90 DEGREE SHORT RADIUS ELBOW - UNKNOWN PUMP TYPE -	AUG		-	-	-	-
1									-	-	-	-
R-A	130700-RI					1.2-21A SHT-01	1.2-21A SHT-01	1.2-21A SHT-01	-	-	-	-
R1.16-4	RCB-J027	RC				UNKNOWN PUMP TYPE - PIPE	AUG		-	-	-	-
1									-	-	-	-

Duane Arnold Nuclear Plant
4th Interval
Category 4

Category, Item No., Class	Summary No. ComplID System	Outage / Scope / Method Type / Procedure	Dwg/ISO No. Comp. Desc. Code Case	Period 1			Period 2			Period 3		
				RFO-20-1	RFO-21	RFO-22	RFO-22	RFO-23	RFO-23	RFO-23		
R-A	131200-RI		1.2-21A SHT-01	-	-	-	-	-	-	-	-	-
R1.16-4	RCB-J031		PIPE - MOTOR OPERATED GATE	-	-	-	-	-	-	-	-	-
1	RC		AUG	-	-	-	-	-	-	-	-	-
R-A	131400-RI		1.2-21A SHT-01	-	-	-	-	-	-	-	-	-
R1.16-4	RCB-J033		MOTOR OPERATED GATE - 90 DEGREE	-	-	-	-	-	-	-	-	-
1	RC		LONG RADIUS ELBOW	-	-	-	-	-	-	-	-	-
R-A	131800-RI		1.2-21A SHT-01	-	-	-	-	-	-	-	-	-
R1.16-4	RCB-J035		90 DEGREE LONG RADIUS ELBOW -	-	-	-	-	-	-	-	-	-
1	RC		PIPE	-	-	-	-	-	-	-	-	-
R-A	132500-RI		1.2-21A SHT-01	-	-	-	-	-	-	-	-	-
R1.16-4	RCB-J041		PIPE	-	-	-	-	-	-	-	-	-
1	RC		AUG	-	-	-	-	-	-	-	-	-
R-A	133000-RI		1.2-21A SHT-01	-	-	-	-	-	-	-	-	-
R1.16-4	RCB-J044		PIPE - TEE	-	-	-	-	-	-	-	-	-
1	RC		AUG	-	-	-	-	-	-	-	-	-
R-A	89700-RI		1.2-14 SHT-01	-	-	-	-	-	-	-	-	-
R1.16-4	RHB-F003	RFO-22 / ISI / UT / / ACP1211.38	PIPE - PIPE	-	-	-	-	-	-	-	-	-
1	RH		AUG	-	-	-	-	-	-	-	-	-

Attachment 2
Revised UT-07-029 “UT Calibration/Examination”



FPL Energy
Deane Arnold Energy Center

UT Calibration/Examination

Site/Unit: DAEC / 1
Summary No.: 74600-RI
Workscope: ISI

Procedure: ACP1211.20
Procedure Rev.: 6
Work Order No.: 1135836

Outage No.: RFO-20-1
Report No.: UT-07-029
Page: 1 of 1

Code: ASME 2001 Ed thru 2003 Add Cat./Item: R-A/R1.16-4 Location: RB270
Drawing No.: 1.2-11A SHT-01 Description: PIPE - MOTOR OPERATED GATE
System ID: CU
Component ID: CUA-J024 Size/Length: .90" / 15.75" Thickness/Diameter: 0.580" / 5.0" OD
Limitations: Single sided due to valve configuration Start Time: 1416 Finish Time: 1422

Instrument Settings
Serial No.: 01LCBL Manufacturer: Krautkramer Model: USN 60 SW
Delay: 07.050 Range: 3.0" M'tl Cal/Vel: .2304 Pulsar: Square
Damping: 500Ω Reject: 0% Rep. Rate: AutoHigh Freq.: 2.00 MHz
Filter: Fixed Mode: FullWave Voltage: 450 Other: PulseWidth 250 ns
Ax. Gain (dB): 58 Circ. Gain (dB): 58
10 Screen Div. = 3.0 in. of Sound Path
Linearity Report No.: L-07-001

Search Unit
Serial No.: 05-335 Manufacturer: RTD
Size: 2 (7x10 mm) Shape: Rect Freq.: 2.0 MHz Style: TRL2
Exam Angle: 60° # of Elements: Dual Mode: FED 9/26/10 - Shear Long.
Measured Angle: 60° Wedge Style: N/A
Search Unit Cable
Type: RG-174 Length: 6' No. Conn.: 0

Cal. Checks	Time	Date
Initial Cal.	0720	2/12/2007
Inter. Cal.	1416	2/12/2007
Inter. Cal.	1422	2/12/2007
Inter. Cal.	N/A	
Final Cal.	1505	2/12/2007

Couplant
Cal. Batch: 06225
Type: Ultragel II
Mfg.: Sonotech
Exam Batch: 06225
Type: Ultragel II
Mfg.: Sonotech

Reference Block
Serial No.: LMT-032
Type: SS Rompas

Axial Orientated Search Unit			
Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
1" Notch	80	7.0	2.04"
N/A			

Circumferential Orientated Search Unit			
Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
N/A			

Reference/Simulator Block				
Gain dB	Reflector	Signal Amplitude %	Sweep Division	Sound Path
48	SDH	60	45	1.43"
N/A				

Calibration Block
Cal. Block No.: 5539 Thickness .5"-2.0" Dia.: Flat
Cal. Blk. Temp. 78° Temp. Tool: 253987 Comp. Temp.: 78° Temp. Tool: 253987
Scan Coverage
Upstream Downstream Scan dB: 64
CW CCW Scan dB: N/A
Exam Surface: OD Surface Condition: Blended

Recordable Indication(s): Yes No (If Yes, Ref. Attached Ultrasonic Indication Report.)

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: 50% Reviewed Previous Data: Yes

Comments: **No downstream scans due to valve configuration. Reference Coverage plot on 45° angle report# UT-07-028.**

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Davis, Layn R	III-PDI	<i>[Signature]</i>	2/12/2007	Blechinger, Todd P.	<i>[Signature]</i>	3/4/07
Pollock, Norm E.	I	<i>[Signature]</i>	2/12/2007	Dohmen, Frank E.	<i>[Signature]</i>	3/5/07
N/A	N/A	<i>[Signature]</i>		Bowers, Jeremy	<i>[Signature]</i>	3-5-07

Attachment 3
CUA-J024 Weld Photos



CUA-J024

MO-2701

16 2:22PM



X-15

CUA-J024

16 2:21PM