NEXTera ENERGY
DUANE ARNOLD

Attachment 2 Contains ~~Proprietary Information~~

Withhold Attachment 2 from Public Disclosure in Accordance with 10 CFR 2.390

December 18, 2015

NG-15-0345
10 CFR 50.90

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

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

Supplemental Information for License Amendment Request (TSCR-144) to Revise and Relocate Pressure and Temperature Limit Curves to a Pressure and Temperature Limits Report

Reference: License Amendment Request (TSCR-144) to Revise and Relocate Pressure and Temperature Limit Curves to a Pressure and Temperature Limits Report, NG-15-0235, dated July 30, 2015 (ML15253A310)

In the referenced submittal, NextEra Energy Duane Arnold, LLC (hereafter, NextEra Energy Duane Arnold) submitted a request for an amendment to the Technical Specifications (TS) for Duane Arnold Energy Center (DAEC).

The referenced submittal did not contain an Affidavit of Proprietary Information from EPRI. That affidavit is included as Attachment 1 of this letter.

Attachment 2 of this letter provides replacement pages, which contain proprietary information, for Attachment 5 of the referenced submittal. Attachment 3 of this letter provides replacement pages for Attachment 6 of the reference submittal.

A001
NRR

Attachment 2 transmitted herewith contains ~~Proprietary Information~~.
When separated from Attachment 2, this document is decontrolled.

If you have any questions or require additional information, please contact J. Michael Davis at 319-851-7032.

Steven P. Brown

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

Attachments

cc: Regional Administrator, USNRC, Region III,
Project Manager, USNRC, Duane Arnold Energy Center
Resident Inspector, USNRC, Duane Arnold Energy Center
A. Leek (State of Iowa)

ATTACHMENT 1 TO NG-15-0345

NEXTERA ENERGY DUANE ARNOLD, LLC
DUANE ARNOLD ENERGY CENTER

EPRI Proprietary Affidavit to the NRC

4 pages follow

ELECTRIC POWER
RESEARCH INSTITUTE

KURT EDSINGER
Director, PWR & BWR Materials

Ref. EPRI Project Number 669

December 7, 2015

Document Control Desk
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Request for Withholding of the following Proprietary Information Included in:

FPL Energy Duane Arnold, LLC, Duane Arnold Energy Center Submittal to the NRC on "Pressure and Temperature Limits Report (PTLR) for 32 and 54 Effective Full-Power Years (EFPY)". (Attachment 5 to Duane Arnold Energy Center Letter NG-15-0235, dated July 30, 2015)

To Whom It May Concern:

This is a request under 10 C.F.R. §2.390(a)(4) that the U.S. Nuclear Regulatory Commission ("NRC") withhold from public disclosure the report identified in the enclosed Affidavit consisting of the proprietary information owned by Electric Power Research Institute, Inc. ("EPRI") identified in the attached report. Proprietary and non-proprietary versions of the Report and the Affidavit in support of this request are enclosed.

EPRI desires to disclose the Proprietary Information in confidence to assist the NRC review of the enclosed submittal to the NRC by FPL Energy Duane Arnold. The Proprietary Information is not to be divulged to anyone outside of the NRC or to any of its contractors, nor shall any copies be made of the Proprietary Information provided herein. EPRI welcomes any discussions and/or questions relating to the information enclosed.

If you have any questions about the legal aspects of this request for withholding, please do not hesitate to contact me at (650) 855-2271. Questions on the content of the Report should be directed to Andy McGehee of EPRI at (704) 502-6440.

Sincerely,

Attachment(s)
c: Sheldon Stuchell, NRC (sheldon.stuchell@nrc.gov)

EPRI | ELECTRIC POWER RESEARCH INSTITUTE

AFFIDAVIT

RE: Request for Withholding of the Following Proprietary Information Included In:

FPL Energy Duane Arnold, LLC, Duane Arnold Energy Center Submittal to the NRC on "Pressure and Temperature Limits Report (PTLR) for 32 and 54 Effective Full-Power Years (EFPY)". (Attachment 5 to Duane Arnold Energy Center Letter NG-15-0235, dated July 30, 2015)

I, Kurt Edsinger, being duly sworn, depose and state as follows:

I am the Director of PWR and BWR Materials at Electric Power Research Institute, Inc. whose principal office is located at 3420 Hillview Avenue, Palo Alto, CA. ("EPRI") and I have been specifically delegated responsibility for the above-listed report that contains EPRI Proprietary Information that is sought under this Affidavit to be withheld "Proprietary Information". I am authorized to apply to the U.S. Nuclear Regulatory Commission ("NRC") for the withholding of the Proprietary Information on behalf of EPRI.

EPRI Proprietary Information is identified in the above referenced report by double brackets. An example of such identification is as follows:

{{This sentence is an example}}

Tables containing EPRI Proprietary Information are identified with double brackets before and after the object. *The specific EPRI Proprietary Information is contained in Table 7 and Table 8 of the referenced document and is the chemistry factor for shell ring #2 plate heat B0673-1.*

EPRI requests that the Proprietary Information be withheld from the public on the following bases:

Withholding Based Upon Privileged And Confidential Trade Secrets Or Commercial Or Financial Information (see e.g., 10 C.F.R. § 2.390(a)(4):

a. The Proprietary Information is owned by EPRI and has been held in confidence by EPRI. All entities accepting copies of the Proprietary Information do so subject to written agreements imposing an obligation upon the recipient to maintain the confidentiality of the Proprietary Information. The Proprietary Information is disclosed only to parties who agree, in writing, to preserve the confidentiality thereof.

b. EPRI considers the Proprietary Information contained therein to constitute trade secrets of EPRI. As such, EPRI holds the Information in confidence and disclosure thereof is strictly limited to individuals and entities who have agreed, in writing, to maintain the confidentiality of the Information.

c. The information sought to be withheld is considered to be proprietary for the following reasons. EPRI made a substantial economic investment to develop the Proprietary Information and, by prohibiting public disclosure, EPRI derives an economic benefit in the form of licensing royalties and other additional fees from the confidential nature of the Proprietary Information. If the Proprietary Information were publicly available to consultants and/or other businesses providing services in the electric and/or nuclear power industry, they would

be able to use the Proprietary Information for their own commercial benefit and profit and without expending the substantial economic resources required of EPRI to develop the Proprietary Information.

d. EPRI's classification of the Proprietary Information as trade secrets is justified by the Uniform Trade Secrets Act which California adopted in 1984 and a version of which has been adopted by over forty states. The California Uniform Trade Secrets Act, California Civil Code §§3426 – 3426.11, defines a "trade secret" as follows:

> "'Trade secret' means information, including a formula, pattern, compilation, program device, method, technique, or process, that:
>
> (1) Derives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from its disclosure or use; and
>
> (2) Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy."

e. The Proprietary Information contained therein are not generally known or available to the public. EPRI developed the Information only after making a determination that the Proprietary Information was not available from public sources. EPRI made a substantial investment of both money and employee hours in the development of the Proprietary Information. EPRI was required to devote these resources and effort to derive the Proprietary Information. As a result of such effort and cost, both in terms of dollars spent and dedicated employee time, the Proprietary Information is highly valuable to EPRI.

f. A public disclosure of the Proprietary Information would be highly likely to cause substantial harm to EPRI's competitive position and the ability of EPRI to license the Proprietary Information both domestically and internationally. The Proprietary Information can only be acquired and/or duplicated by others using an equivalent investment of time and effort.

I have read the foregoing and the matters stated herein are true and correct to the best of my knowledge, information and belief. I make this affidavit under penalty of perjury under the laws of the United States of America and under the laws of the State of California.

Executed at 3420 Hillview Avenue, Palo Alto, CA being the premises and place of business of Electric Power Research Institute, Inc

Date: 12/7/2015

Kurt Edsinger

Civil Code 1189

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT **CIVIL CODE § 1189**

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
County of Santa Clara)

On December 7, 2015 before me, Berte A. Dahl Notary Public,
Date *Here Insert Name and Title of the Officer*

personally appeared Kurt Edelhoff
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Berte A. Dahl
Signature of Notary Public

BERTE A. DAHL
Commission # 2100695
Notary Public - California
Santa Clara County
My Comm. Expires Mar 20, 2019

Place Notary Seal Above

OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document
Title or Type of Document: Agreement Document Date: 12/07/2015
Number of Pages: 3 Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name:	Signer's Name:
☐ Corporate Officer — Title(s):	☐ Corporate Officer — Title(s):
☐ Partner — ☐ Limited ☐ General	☐ Partner — ☐ Limited ☐ General
☐ Individual ☐ Attorney in Fact	☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator	☐ Trustee ☐ Guardian or Conservator
☐ Other:	☐ Other:
Signer Is Representing:	Signer Is Representing:

ATTACHMENT 3 TO NG-15-0345

NEXTERA ENERGY DUANE ARNOLD, LLC
DUANE ARNOLD ENERGY CENTER

REPLACEMENT PAGES FOR ATTACHMENT 6 of NG-15-0235
LICENSE AMENDMENT REQUEST (TSCR-144)
TO REVISE AND RELOCATE PRESSURE AND TEMPERATURE LIMITS CURVES
TO A PRESSURE AND TEMPERATURE LIMITS REPORT

2 pages follow

Table 7: DAEC ART Table for 32 EFPY

	Description	ID No.	Heat No.	Lot No.	Initial RT_{NDT} (°F)	Chemistry		Chemistry Factor (°F)	Adjustments For 1/4t			
									ΔRT_{NDT}	Margin Terms		ART
						Cu (wt %)	Ni (wt %)		(°F)	σ_Δ (°F)	σ_i (°F)	(°F)
Plates	Shell Ring #1	1-18	C6439-2	-	40	0.09	0.51	58.0	36.5	17.0	0.0	110.5
Plates	Shell Ring #1	1-19	B0402-1	-	40	0.13	0.47	87.1	54.8	17.0	0.0	128.8
Plates	Shell Ring #2	1-20	B0436-2	-	10	0.15	0.64	111.0	76.8	17.0	0.0	120.8
Plates	Shell Ring #2	1-21	B0673-1	-	10	***0.15***	***0.65***	{{ }}[a, b, c, d, e, f]	102.0	8.5	0.0	129.0
Welds	Lower	D1,D2	432Z4521	B020A27A	-50	0.01	0.98	20.0	11.3	5.6	0.0	-27.5
Welds	Lower	D1,D2	432Z0471	B003A27A	-50	0.03	0.91	41.0	23.1	11.5	0.0	-3.8
Welds	Lower-Int	E1,E2	432Z4521	B020A27A	-50	0.01	0.98	20.0	12.7	6.4	0.0	-24.6
Welds	Lower-Int	E1,E2	432Z0471	B003A27A	-50	0.03	0.91	41.0	26.1	13.0	0.0	2.2
Welds	Girth	DE	09L853	L017A27A	-50	0.03	0.88	41.0	25.8	12.9	0.0	1.5
Welds	Girth	DE	07L669	K004A27A	-50	0.03	1.02	41.0	25.8	12.9	0.0	1.5
Welds	Girth	DE	CTY538	A027A27A	-50	0.03	0.83	41.0	25.8	12.9	0.0	1.5
Nozzles	Nozzle N16	-	Q2Q5VW	-	40	0.18	0.85	141.8	63.7	17.0	0.0	137.7
Nozzles	Nozzle N2	-	Q2Q6VW	-	40	0.18	0.84	141.6	29.2	14.6	0.0	98.5
Nozzle Welds	N2/N16 Nozzle Welds (bounding)	-	412Z051 08R4818 659T568 661Y494 661Y439	K910A27A K904A27A H721A27A F927A27A E916A27A	-50	0.03	1.00	41.0	18.4	9.2	0.0	-13.2

	Location		Wall Thickness (in.) Full	Wall Thickness (in.) 1/4t	Fluence at ID (n/cm^2)	Attenuation, 1/4t $e^{-0.24x}$	Fluence @ 1/4t (n/cm^2)	Fluence Factor, FF $f^{(0.28-0.10\log f)}$
Plates	Shell Ring #1	1-18	4.469	1.117	3.33E+18	0.765	2.55E+18	0.629
Plates	Shell Ring #1	1-19	4.469	1.117	3.33E+18	0.765	2.55E+18	0.629
Plates	Shell Ring #2	1-20	4.469	1.117	4.26E+18	0.765	3.26E+18	0.692
Plates	Shell Ring #2	1-21	4.469	1.117	4.26E+18	0.765	3.26E+18	0.692
Welds	Lower	D1,D2	4.469	1.117	2.55E+18	0.765	1.95E+18	0.563
Welds	Lower	D1,D2	4.469	1.117	2.55E+18	0.765	1.95E+18	0.563
Welds	Lower-Int	E1,E2	4.469	1.117	3.43E+18	0.765	2.62E+18	0.636
Welds	Lower-Int	E1,E2	4.469	1.117	3.43E+18	0.765	2.62E+18	0.636
Welds	Girth	DE	4.469	1.117	3.33E+18	0.765	2.55E+18	0.629
Welds	Girth	DE	4.469	1.117	3.33E+18	0.765	2.55E+18	0.629
Welds	Girth	DE	4.469	1.117	3.33E+18	0.765	2.55E+18	0.629
Nozzles	Nozzle N16	-	4.469	1.117	1.53E+18	0.765	1.17E+18	0.449
Nozzles	Nozzle N2	-	4.469	1.117	3.53E+17	0.765	2.70E+17	0.206
Nozzle Welds	Nozzle N16 (bounding)	-	4.469	1.117	1.53E+18	0.765	1.17E+18	0.449

Note: The source of redacted proprietary information is Reference [13]

REDACTED {{ }} PROPRIETARY INFORMATION

Table 8: DAEC ART Table for 54 EFPY

	Description	ID No.	Heat No.	Lot No.	Initial RT_{NDT} (°F)	Chemistry		Chemistry Factor (°F)	Adjustments For 1/4t			
						Cu (wt %)	Ni (wt %)		ΔRT_{NDT} (°F)	Margin Terms σ_Δ (°F)	Margin Terms σ_i (°F)	ART (°F)
Plates	Shell Ring #1	1-18	C6439-2	-	40	0.09	0.51	58.0	45.1	17.0	0.0	119.1
Plates	Shell Ring #1	1-19	B0402-1	-	40	0.13	0.47	87.1	67.8	17.0	0.0	141.8
Plates	Shell Ring #2	1-20	B0436-2	-	10	0.15	0.64	111.0	93.7	17.0	0.0	137.7
Plates	Shell Ring #2	1-21	B0673-1	-	10	***0.15***	***0.65***	{{ }}[a, b, c, d, e, f]	124.5	8.5	0.0	151.5
Welds	Lower	D1,D2	432Z4521	B020A27A	-50	0.01	0.98	20.0	14.1	7.0	0.0	-21.9
Welds	Lower	D1,D2	432Z0471	B003A27A	-50	0.03	0.91	41.0	28.8	14.4	0.0	7.7
Welds	Lower-Int	E1,E2	432Z4521	B020A27A	-50	0.01	0.98	20.0	15.6	7.8	0.0	-18.7
Welds	Lower-Int	E1,E2	432Z0471	B003A27A	-50	0.03	0.91	41.0	32.1	16.0	0.0	14.1
Welds	Girth	DE	09L853	L017A27A	-50	0.03	0.88	41.0	31.9	16.0	0.0	13.8
Welds	Girth	DE	07L669	K004A27A	-50	0.03	1.02	41.0	31.9	16.0	0.0	13.8
Welds	Girth	DE	CTY538	A027A27A	-50	0.03	0.83	41.0	31.9	16.0	0.0	13.8
Nozzles	Nozzle N16	-	Q2Q5VW	-	40	0.18	0.85	141.8	85.0	17.0	0.0	159.0
Nozzles	Nozzle N2	-	Q2Q6VW	-	40	0.18	0.84	141.6	40.4	17.0	0.0	114.4
Nozzle Welds	N2/N16 Nozzle Welds (bounding)	-	412Z051 08R4818 659T568 661Y494 661Y439	K910A27A K904A27A H721A27A F927A27A E916A27A	-50	0.03	1.00	41.0	24.6	12.3	0.0	-0.8

	Location		Wall Thickness (in.) Full	Wall Thickness (in.) 1/4t	Fluence at ID (n/cm^2)	Attenuation, 1/4t $e^{-0.24x}$	Fluence @ 1/4t (n/cm^2)	Fluence Factor, FF $f^{(0.28-0.10\log f)}$
Plates	Shell Ring #1	1-18	4.469	1.117	5.89E+18	0.765	4.50E+18	0.778
Plates	Shell Ring #1	1-19	4.469	1.117	5.89E+18	0.765	4.50E+18	0.778
Plates	Shell Ring #2	1-20	4.469	1.117	7.49E+18	0.765	5.73E+18	0.844
Plates	Shell Ring #2	1-21	4.469	1.117	7.49E+18	0.765	5.73E+18	0.844
Welds	Lower	D1,D2	4.469	1.117	4.45E+18	0.765	3.40E+18	0.703
Welds	Lower	D1,D2	4.469	1.117	4.45E+18	0.765	3.40E+18	0.703
Welds	Lower-Int	E1,E2	4.469	1.117	5.98E+18	0.765	4.57E+18	0.782
Welds	Lower-Int	E1,E2	4.469	1.117	5.98E+18	0.765	4.57E+18	0.782
Welds	Girth	DE	4.469	1.117	5.89E+18	0.765	4.50E+18	0.778
Welds	Girth	DE	4.469	1.117	5.89E+18	0.765	4.50E+18	0.778
Welds	Girth	DE	4.469	1.117	5.89E+18	0.765	4.50E+18	0.778
Nozzles	Nozzle N16		4.469	1.117	2.96E+18	0.765	2.26E+18	0.599
Nozzles	Nozzle N2		4.469	1.117	6.25E+17	0.765	4.78E+17	0.286
Nozzle Welds	Nozzle N16 (bounding)	-	4.469	1.117	2.96E+18	0.765	2.26E+18	0.599

Note: The source of redacted proprietary information is Reference [13]

REDACTED {{ }} PROPRIETARY INFORMATION