Attachment 3 and Attachment 4 contain information requested to be withheld from public disclosure under 10 CFR 2.390

L-2018-059
10 CFR 54.17
10 CFR 2.390

March 1, 2018

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555-0001

Re: Florida Power & Light Company
Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Turkey Point Units 3 and 4 Subsequent
License Renewal Application - Supplement 3

Reference:

1. FPL Letter L-2018-004 to NRC dated January 30, 2018, Turkey Point Units 3 and 4 Subsequent License Renewal Application
2. FPL Letter L-2018-039 to NRC dated February 9, 2018, Turkey Point Units 3 and 4 Subsequent License Renewal Application - Supplement 1
3. FPL Letter L-2018-053 to NRC dated February 16, 2018, Turkey Point Units 3 and 4 Subsequent License Renewal Application - Supplement 2

Florida Power & Light Company (FPL) submitted a subsequent license renewal application (SLRA) for Turkey Point Units 3 and 4 to NRC on January 30, 2018 (Reference 1) and supplemented by References 2 and 3. FPL's vendor, Framatome Inc. (formerly known as AREVA Inc.) has determined that some additional information in the public version of the application should be considered proprietary. This letter provides an updated Framatome affidavit for the withholding of information from public disclosures in accordance with 10 CFR 2.390.

Accordingly, FPL is providing the following updates to its SLRA to properly reflect the status of this information and associated changes to the enclosures to Reference 1 as listed below.

- Attachment 1 to this letter includes a revised affidavit and conforming changes to Enclosure 2 of the SLRA letter (Reference 1), which are the applications for withholding under 10 CFR 2.390. This information supersedes the same information provided in Reference 3.
- Attachment 2 to this letter includes replacement pages for the changes to Enclosure 3 of the SLRA letter (Reference 1), which is the public version of the SLRA.
- Attachment 3 to this letter includes replacement pages for the nonpublic (proprietary) version of the SLRA letter (Reference 1). The nonpublic (proprietary) version of the application is Attachment 1 to Enclosure 5 of the SLRA letter which includes the documents withheld under 10 CFR 2.390.

A084
NRR

Attachment 3 and Attachment 4 contain information requested to be withheld from public disclosure under 10 CFR 2.390

- Attachment 4 is replacement files on optical storage medium (OSM) for the SLR application (both the public version Enclosure 3 and nonpublic (proprietary) version Enclosure 5, Attachment 1) which incorporates Supplements 1, 2, & 3.

Attachment 4, which provides a replacement file for the SLR application (both the public and nonpublic (proprietary) versions), incorporates Supplements 1, 2, & 3 with revision bars in the right margin along with the SLRA supplement number (1, 2, or 3) that revised the information.

FPL will provide a revised submittal, which will include a complete version of each of the affected SLRA Enclosures identified in this letter, prior to the end of the NRC acceptance review period.

FPL requests Attachment 3 & 4(nonpublic version of the application only) of this letter to be withheld from public disclosure under 10 CFR 2.390. The affected replacement pages are considered proprietary and are covered by the affidavit included in Attachment 1 or each supplement letter, as appropriate.

If you have any questions, or need additional information, please contact William Maher, Senior Licensing Director, at 561-691-2294.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on March 1, 2018.

Sincerely,

William D. Maher
Senior Licensing Director
Florida Power & Light Company

Attachments:

1. Replacement Affidavit and Conforming Changes for Enclosure 2 to FPL Letter L-2018-004 dated 01-30-2018
2. Replacement Pages to the Public Version of the SLRA in Enclosure 3 to FPL Letter L-2018-004 dated 01-30-2018
3. Replacement Pages to the Proprietary Version of the SLRA in Enclosure 5 Attachment 1 to FPL Letter L-2018-004 dated 01-30-2018 Withhold under 10 CFR 2.390
4. Replacement SLRA OSM

WDM/RFB

Attachment 3 and Attachment 4 contain information requested to be withheld from public disclosure under 10 CFR 2.390

cc: w/o Attachments 3 & 4
Regional Administrator, USNRC, Region II
Project Manager, USNRC, Turkey Point Nuclear Plant
Project Manager, USNRC, SLRA
Senior Resident Inspector, USNRC, Turkey Point Nuclear Plant
Project Manager, USNRC, SLRA Environment
Ms. Cindy Becker, Florida Department of Health

Attachment 3 and Attachment 4 contain information requested to be withheld from public disclosure under 10 CFR 2.390

Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
L-2018-059 Attachment 1 (5 Total Pages)

Replacement Affidavit and Conforming Changes for Enclosure 2 to FPL Letter L-2018-004 dated 01-30-2018	
1	Enclosure 2, Attachment 6, Replace Cover Page (1 Page)
2	Enclosure 2, Attachment 6, Framatome (formerly known as AREVA Inc.) Replace Affidavit - (3 Pages)

Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
L-2018-004 Enclosure 2 Attachment 6 Page 1 of 4

Enclosure 2

Applications for Withholding

Proprietary Information from Public Disclosure

Pursuant to 10 CFR 2.390(a)(4)

Attachment 6:

Affidavit dated ~~December 15, 2017~~ February 26, 2018
for withholding for Areva CUFs in SLRA tables
(Enclosure 5 Attachment 1- SLRA Section 4, Attachment 4 & Attachment 5)

AFFIDAVIT

COMMONWEALTH OF VIRGINIA)
) ss.
CITY OF LYNCHBURG)

1. My name is Philip A. Opsal. I am Manager, Product Licensing, for Framatome Inc. (Framatome, formally known as AREVA Inc.) and as such I am authorized to execute this Affidavit.

2. I am familiar with the criteria applied by Framatome to determine whether certain Framatome information is proprietary. I am familiar with the policies established by Framatome to ensure the proper application of these criteria.

3. I am familiar with the Framatome information contained in the Section 4 of the Florida Power & Light Company, Turkey Point Nuclear Plant Units 3 and 4 Subsequent License Renewal Application, Docket Nos. 50-250 and 50-251, L-2018-004, January 2018, which is referred to herein as "Document." Certain information contained in the Tables and pages of this Document listed below has been classified by Framatome as proprietary in accordance with the policies established by Framatome for the control and protection of proprietary and confidential information.

i. Page 4.2-6 of Section 4, "Reactor Vessel Neutron Embrittlement Analysis,"
ii. Table 4.2.2-1, "RTPTS Calculations for Turkey Point Unit 3 Extended Beltline Materials at 72 EFPY,"
iii. Table 4.2.2-2, "RTPTS Calculations for Turkey Point Unit 4 Extended Beltline Materials at 72 EFPY,"
iv. Table 4.2.3-1, "Turkey Point Unit 3 Predicted Position 1.2 USE Values at 72 EFPY,"

v. Table 4.2.3-2, "Turkey Point Unit 4 Predicted Position 1.2 USE Values at 72 EFPY,"

vi. Table 4.2.4-1, "Turkey Point Unit 3 ART Calculations for 72 EFPY,"

vii. Table 4.2.4-2, "Turkey Point Unit 4 ART Calculations for 72 EFPY,"

viii. Table 4.3-1, "PTN Unit 3 and Unit 4 60-Year Fatigue Cumulative Usage Factors for Reactor Coolant System Components,"

ix. Table 4.3.3-2, "80-Year Environmentally Assisted Fatigue CUFs," and

x. Pages 4.3-22, 4.3-23 and 4.3-24 of Section 4, "Time-Limited Aging Analyses,"

4. This Document contains information of a proprietary and confidential nature and is of the type customarily held in confidence by Framatome and not made available to the public. Based on my experience, I am aware that other companies regard information of the kind contained in this Document as proprietary and confidential.

5. This Document has been made available to the U.S. Nuclear Regulatory Commission in confidence with the request that the information contained in this Document be withheld from public disclosure. The request for withholding of proprietary information is made in accordance with 10 CFR 2.390. The information for which withholding from disclosure is requested qualifies under 10 CFR 2.390(a)(4) "Trade secrets and commercial or financial information."

6. The following criteria are customarily applied by Framatome to determine whether information should be classified as proprietary:

(a) The information reveals details of Framatome's research and development plans and programs or their results.

(b) Use of the information by a competitor would permit the competitor to significantly reduce its expenditures, in time or resources, to design, produce, or market a similar product or service.

(c) The information includes test data or analytical techniques concerning a process, methodology, or component, the application of which results in a competitive advantage for Framatome.

(d) The information reveals certain distinguishing aspects of a process, methodology, or component, the exclusive use of which provides a competitive advantage for Framatome in product optimization or marketability.

(e) The information is vital to a competitive advantage held by Framatome, would be helpful to competitors to Framatome, and would likely cause substantial harm to the competitive position of Framatome.

The information in this Document is considered proprietary for the reasons set forth in paragraphs 6(d) and 6(e) above.

7. In accordance with Framatome's policies governing the protection and control of information, proprietary information contained in this Document has been made available, on a limited basis, to others outside Framatome only as required and under suitable agreement providing for nondisclosure and limited use of the information.

8. Framatome policy requires that proprietary information be kept in a secured file or area and distributed on a need-to-know basis.

9. The foregoing statements are true and correct to the best of my knowledge, information, and belief.

Philip A. Opsal

SUBSCRIBED before me this 26th
day of February, 2018.

Sherry L. McFaden

Sherry L. McFaden
NOTARY PUBLIC, COMMONWEALTH OF VIRGINIA
MY COMMISSION EXPIRES: 10/31/18
Reg. # 7079129

SHERRY L. MCFADEN
Notary Public
Commonwealth of Virginia
7079129
My Commission Expires Oct 31, 2018

Attachment 3 and Attachment 4 contain information requested to be withheld from public disclosure under 10 CFR 2.390

Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
L-2018-059 Attachment 2 (11 Total Pages)

Replacement Pages to the Public Version of the SLRA in Enclosure 3 to FPL Letter L-2018-004 dated 01-30-2018	
1	Enclosure 3, SLRA Section 4, Replace the following pages listed below with the attached pages: 4.2-6 4.2-7 4.2-8 4.2-9 4.2-10 4.2-16 4.2-18 4.2-21 4.2-22 4.2-23

These methods were used to calculate the RT_{PTS} for the PTN reactor vessel limiting materials at the end of the SPEO, 72 EFPY. The calculated RT_{PTS} values for Turkey Point Units 3 and 4 reactor vessels at 72 EFPY are shown in Tables 4.2.2-1 and 4.2.2-2, respectively.

The limiting RT_{PTS} value for Turkey Point Unit 3 reactor vessel shell forgings at 72 EFPY is [ ], which corresponds to the upper shell forging. The limiting RT_{PTS} value for the Unit 3 circumferentially-oriented welds at 72 EFPY is 261°F, which corresponds to the intermediate-to-lower shell circumferential weld (Heat # 71249). | Supplement 3

The limiting RT_{PTS} value for Turkey Point Unit 4 reactor vessel shell forgings at 72 EFPY is [ ], which corresponds to the upper shell forging. The limiting RT_{PTS} value for the Unit 4 circumferentially-oriented welds at 72 EFPY is 261°F, which corresponds to the intermediate shell forging-to-lower shell circumferential weld (Heat # 71249). | Supplement 3

As shown in Tables 4.2.2-1 and 4.2.2-2, the calculated RT_{PTS} values at 72 EFPY for the PTN reactor vessels are less than the 10 CFR 50.61(b)(2) screening criteria of 270°F for intermediate and lower shells and 300°F for the circumferential welds. Based upon the revised calculations, additional measures will not be required for the PTN reactor vessels during the SPEO.

TLAA Disposition: 10 CFR 54.21(c)(1)(ii)

The PTS analyses have been projected to the end of the SPEO.

Table 4.2.2-1
RT_{PTS} Calculations for Turkey Point Unit 3 Extended Beltline Materials at 72 EFPY

Table 4.2.2-1: RT_{PTS} Calculations for Turkey Point Unit 3 Extended Beltline Materials at 72 EFPY

Reactor Vessel Material	Cu (Wt. %)	Ni (Wt. %)	CF[1] (°F)	Fluence (n/cm², E>1.0 MeV)	FF[2]	$RT_{NDT(U)}$[3] (°F)	$\acute{c}RT_{NDT}$[4] (°F)	σ_u[3] (°F)	$\sigma_{\acute{c}}$[5] (°F)	Margin (°F)	RT_{PTS} (°F)	PTS Limit (°F)	
Upper Shell (US) Forging	[ ]	0.68	[ ]	1.13×10^{19}	1.03	50	[ ]	0.0	[ ]	[ ]	[ ]	270	Supplement 3
Intermediate Shell (IS) Forging	0.058	0.70	37.0	1.08×10^{20}	1.52	40	56	0.0	17.0	34.0	130	270	
IS using Surveillance Data	0.058	0.70	6.9	1.08×10^{20}	1.52	40	10	0.0	5.2	10.5	61	270	
Lower Shell (LS) Forging	0.079	0.67	51.0	9.86×10^{19}	1.51	30	77	0.0	17.0	34.0	141	270	
LS using Surveillance Data	0.079	0.67	48.7	9.86×10^{19}	1.51	30	74	0.0	8.5	17.0	121	270	
Lower Head Ring (transition)	[ ]	0.69	[ ]	1.36×10^{17}	0.13	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	270	Supplement 3
Inlet Nozzle 1	0.16	0.76	122.00	2.37×10^{17}	0.19	[ ]	23	[ ]	11.6	[ ]	[ ]	270	Supplement 3
Inlet Nozzle 2	0.16	0.74	121.50	2.37×10^{17}	0.19	[ ]	23	[ ]	11.6	[ ]	[ ]	270	Supplement 3
Inlet Nozzle 3	0.16	0.8	123.00	2.37×10^{17}	0.19	[ ]	23	[ ]	11.7	[ ]	[ ]	270	Supplement 3
Outlet Nozzle 1	0.16	0.79	122.8	2.00×10^{17}	0.17	[ ]	21	[ ]	10.6	[ ]	[ ]	270	Supplement 3
Outlet Nozzle 2	0.16	0.72	121.00	2.00×10^{17}	0.17	[ ]	21	[ ]	10.4	[ ]	[ ]	270	Supplement 3
Outlet Nozzle 3	0.16	0.72	121.00	2.00×10^{17}	0.17	[ ]	21	[ ]	10.4	[ ]	[ ]	270	Supplement 3
Inlet Nozzle Weld 1	[ ]	[ ]	[ ]	2.37×10^{17}	0.19	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	270	Supplement 3
Inlet Nozzle Weld 2	[ ]	[ ]	[ ]	2.37×10^{17}	0.19	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	270	Supplement 3
Inlet Nozzle Weld 3	[ ]	[ ]	[ ]	2.37×10^{17}	0.19	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	270	Supplement 3
Outlet Nozzle Weld	[ ]	[ ]	[ ]	2.00×10^{17}	0.17	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	270	Supplement 3
US to IS Circumferential Weld	0.26	0.60	180.0	1.13×10^{19}	1.03	-33.2	186	12.2	28.0	61.1	214	300	
IS to LS Circumferential Weld	0.23	0.59	167.6	9.86×10^{19}	1.51	-53.5	253	12.8	28.0	61.6	261	300	

Table 4.2.2-1: RT_{PTS} Calculations for Turkey Point Unit 3 Extended Beltline Materials at 72 EFPY

Reactor Vessel Material	Cu (Wt. %)	Ni (Wt. %)	CF[1] (°F)	Fluence (n/cm^2, E>1.0 MeV)	FF[2]	$RT_{NDT(U)}$[3] (°F)	ćRT_{NDT}[4] (°F)	σ_u[3] (°F)	$\sigma_ć$[5] (°F)	Margin (°F)	RT_{PTS} (°F)	PTS Limit (°F)
IS to LS using Surveillance Data	0.23	0.59	151.1	9.86×10^{19}	1.51	-53.5	228	12.8	28.0	61.6	236	300
LS to Transition Ring Circumferential Weld	0.23	0.52	157.4	1.36×10^{17}	0.13	[ ]	21	[ ]	10.6	[ ]	[ ]	300

Supplement 3

Notes for Table 4.2.2-1

1. Value calculated using Regulatory Guide 1.99, Revision 2.
2. FF = fluence factor = $f^{(0.28-0.10*\log(f))}$.
3. Initial RT_{NDT} values are for unirradiated material. Note that σ_U = 0°F for measured test values.
4. ćRT_{NDT} = CF * FF where CF = chemistry factor.
5. Per 10 CFR 50.61, the base metal $\sigma_ć$= 17°F for Position 1.1 and $\sigma_ć$ = 8.5°F for Position 2.1 with credible surveillance data; the weld metal $\sigma_ć$ = 28°F for Position 1.1 and $\sigma_ć$ = 14°F for Position 2.1 with credible surveillance data. However, $\sigma_ć$ need not exceed 0.5 *ćRT_{NDT}.

Table 4.2.2-2
RT_{PTS} Calculations for Turkey Point Unit 4 Extended Beltline Materials at 72 EFPY

Table 4.2.2-2: RT_{PTS} Calculations for Turkey Point Unit 4 Extended Beltline Materials at 72 EFPY

Reactor Vessel Material	Cu (Wt. %)	Ni (Wt. %)	CF[1] (°F)	Fluence (n/cm^2, E>1.0 MeV)	FF[2]	$RT_{NDT(U)}$[3] (°F)	ćRT_{NDT}[4] (°F)	σ_u[3] (°F)	$\sigma_{ć}$[5] (°F)	Margin (°F)	RT_{PTS} (°F)	PTS Limit (°F)	
Upper Shell (US) Forging	[ ]	0.70	[ ]	1.15×10^{19}	1.04	40	[ ]	0.0	[ ]	[ ]	[ ]	270	Supplement 3
Intermediate Shell (IS) Forging	0.054	0.69	33.4	1.08×10^{20}	1.52	50	51	0.0	17.0	34.0	135	270	
Lower Shell (LS) Forging	0.056	0.74	34.6	9.81×10^{19}	1.51	40	52	0.0	17.0	34.0	126	270	
LS using Surveillance Data	0.056	0.74	4.9	9.81×10^{19}	1.51	40	7	0.0	3.7	7.3	55	270	
Lower Head Ring (transition)	[ ]	0.69	[ ]	1.36×10^{17}	0.13	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	270	Supplement 3
Inlet Nozzle 1	0.08	0.71	51.0	2.49×10^{17}	0.20	[ ]	10	[ ]	5.0	[ ]	[ ]	270	Supplement 3
Inlet Nozzle 2	0.16	0.84	123.4	2.49×10^{17}	0.20	[ ]	24	[ ]	12.1	[ ]	[ ]	270	Supplement 3
Inlet Nozzle 3	0.16	0.75	121.8	2.49×10^{17}	0.20	[ ]	24	[ ]	12.0	[ ]	[ ]	270	Supplement 3
Outlet Nozzle 1	0.16	0.78	122.5	2.01×10^{17}	0.17	[ ]	21	[ ]	10.6	[ ]	[ ]	270	Supplement 3
Outlet Nozzle 2	0.16	0.68	120.0	2.01×10^{17}	0.17	[ ]	21	[ ]	10.4	[ ]	[ ]	270	Supplement 3
Outlet Nozzle 3	0.16	0.70	120.5	2.01×10^{17}	0.17	[ ]	21	[ ]	10.4	[ ]	[ ]	270	Supplement 3
Inlet Nozzle Weld 1	[ ]	[ ]	[ ]	2.49×10^{17}	0.20	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	270	Supplement 3
Inlet Nozzle Weld 2	[ ]	[ ]	[ ]	2.49×10^{17}	0.20	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	270	Supplement 3
Inlet Nozzle Weld 3	[ ]	[ ]	[ ]	2.49×10^{17}	0.20	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	270	Supplement 3
Outlet Nozzle Weld 1	[ ]	[ ]	[ ]	2.01×10^{17}	0.17	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	270	Supplement 3
Outlet Nozzle Weld 2[6]	[ ]	[ ]	[ ]	2.01×10^{17}	0.17	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	270	Supplement 3
US to IS Circumferential Weld[7]	0.26	0.60	180.0	1.15×10^{19}	1.04	-33.2	187	12.2	28.0	61.1	215	300	
IS to LS Circumferential Weld	0.23	0.59	167.6	9.81×10^{19}	1.51	-53.5	253	12.8	28.0	61.6	261	300	

Table 4.2.2-2: RT_{PTS} Calculations for Turkey Point Unit 4 Extended Beltline Materials at 72 EFPY

Reactor Vessel Material	Cu (Wt. %)	Ni (Wt. %)	CF(1) (°F)	Fluence (n/cm^2, E>1.0 MeV)	FF(2)	$RT_{NDT(U)}$(3) (°F)	ćRT_{NDT}(4) (°F)	σ_u(3) (°F)	$\sigma_ć$(5) (°F)	Margin (°F)	RT_{PTS} (°F)	PTS Limit (°F)
IS to LS using Surveillance Data	0.23	0.59	151.1	9.81×10^{19}	1.51	-53.5	228	12.8	28.0	61.6	236	300
LS to Transition Ring Circumferential Weld	0.23	0.52	157.4	1.36×10^{17}	0.13	[ ]	21	[ ]	10.6	[ ]	[ ]	300

Supplement 3

Notes for Table 4.2.2-2

1. Value calculated using Regulatory Guide 1.99, Revision 2.
2. FF = fluence factor = $f^{(0.28-0.10*\log(f))}$.
3. Initial RT_{NDT} values are for unirradiated material. Note that σ_U = 0°F for measured test values.
4. ćRT_{NDT} = CF * FF where CF = chemistry factor.
5. Per 10 CFR 50.61, the base metal $\sigma_ć$ = 17°F for Position 1.1 and $\sigma_ć$ = 8.5°F for Position 2.1 with credible surveillance data; the weld metal $\sigma_ć$ = 28°F for Position 1.1 and $\sigma_ć$ = 14°F for Position 2.1 with credible surveillance data. However, $\sigma_ć$ need not exceed 0.5 *ćRT_{NDT}.
6. Unit 4 has an additional outlet weld because of use of different material.
7. Inside 67%. Outside 33% N/A for PTS.

Table 4.2.3-1
Turkey Point Unit 3 Predicted Position 1.2 USE Values at 72 EFPY

Reactor Vessel Material	Cu (Wt. %)	¼T EOL Fluence[1] (n/cm^2, E>1.0 MeV)	Unirradiated USE (ft-lb)	Projected USE Decrease (%)[2][3]	Projected EOL USE(ft-lb)	
Upper Shell (US) Forging	[ ]	6.59×10^{18}	99	[ ]	[ ]	Supplement 3
Intermediate Shell (IS) Forging	0.058	6.78×10^{19}	93	30	65	
Lower Shell (LS) Forging	0.079	6.19×10^{19}	100	30	70	
Lower Head Ring (transition)	[ ]	1.02×10^{17}	97	[ ]	[ ]	Supplement 3
US to IS Circumferential Weld	0.26	7.10×10^{18}	[ ]	36	[ ][4]	Supplement 3
IS to LS Circumferential Weld	0.23	6.19×10^{19}	[ ]	60	[ ][4]	Supplement 3
LS to Transition Ring Circumferential Weld	0.23	1.02×10^{17}	[ ]	22	[ ]	Supplement 3
Inlet Nozzle 1	0.16	1.27×10^{17}	109	15	93	
Inlet Nozzle 2	0.16	1.27×10^{17}	109	15	93	
Inlet Nozzle 3	0.16	1.27×10^{17}	109	15	93	
Outlet Nozzle 1	0.16	1.05×10^{17}	109	15	93	
Outlet Nozzle 2	0.16	1.05×10^{17}	109	15	93	
Outlet Nozzle 3	0.16	1.05×10^{17}	109	15	93	
Inlet Nozzle Weld 1	[ ]	1.27×10^{17}	[ ]	[ ]	[ ]	Supplement 3
Inlet Nozzle Weld 2	[ ]	1.27×10^{17}	[ ]	[ ]	[ ]	Supplement 3
Inlet Nozzle Weld 3	[ ]	1.27×10^{17}	[ ]	[ ]	[ ]	Supplement 3
Outlet Nozzle Weld	[ ]	1.05×10^{17}	[ ]	[ ]	[ ]	Supplement 3

Table 4.2.3-2
Turkey Point Unit 4 Predicted Position 1.2 USE Values at 72 EFPY

Reactor Vessel Material	Cu (Wt. %)	¼T EOL Fluence[1] (n/cm^2, E>1.0 MeV)	Unirradiated USE (ft-lb)	Projected USE Decrease (%)[2][3]	Projected EOL USE(ft-lb)	
Upper Shell (US) Forging	[ ]	6.70×10^{18}	103	[ ]	[ ]	| Supplement 3
Intermediate Shell (IS) Forging	0.054	6.78×10^{19}	88	30	62	
Lower Shell (LS) Forging	0.056	6.16×10^{19}	97	30	68	
Lower Head Ring (transition)	[ ]	1.02×10^{17}	109	[ ]	[ ]	| Supplement 3
US to IS Circumferential Weld (Inner 67%)	0.26	7.22×10^{18}	[ ]	36	[ ][4]	| Supplement 3
US to IS Circumferential Weld (Outer 33%)	0.32	2.85×10^{18}	[ ]	36	[ ][4][5]	| Supplement 3
IS to LS Circumferential Weld	0.23	6.16×10^{19}	[ ]	60	[ ][4]	| Supplement 3
LS to Transition Ring Circumferential Weld	0.23	1.02×10^{17}	[ ]	11	[ ]	| Supplement 3
Inlet Nozzle 1	0.08	1.45×10^{17}	109	15	97	
Inlet Nozzle 2	0.16	1.45×10^{17}	109	15	93	
Inlet Nozzle 3	0.16	1.45×10^{17}	105	15	89	
Outlet Nozzle 1	0.16	1.17×10^{17}	107	15	91	
Outlet Nozzle 2	0.16	1.17×10^{17}	104	15	88	
Outlet Nozzle 3	0.16	1.17×10^{17}	93	15	79	
Inlet Nozzle Weld 1	[ ]	1.45×10^{17}	[ ]	[ ]	[ ]	| Supplement 3
Inlet Nozzle Weld 2	[ ]	1.45×10^{17}	[ ]	[ ]	[ ]	| Supplement 3
Inlet Nozzle Weld 3	[ ]	1.45×10^{17}	[ ]	[ ]	[ ][4]	| Supplement 3
Outlet Nozzle Weld 1	[ ]	1.17×10^{17}	[ ]	[ ]	[ ]	| Supplement 3
Outlet Nozzle Weld 2[6]	[ ]	1.17×10^{17}	[ ]	[ ]	[ ][4]	| Supplement 3

Table 4.2.4-1
Turkey Point Unit 3 ART Calculations for 72 EFPY

Table 4.2.4-1: Turkey Point Unit 3 ART Calculations for 72 EFPY

Reactor Vessel Material	Reg. Guide 1.99 Rev. 2 Position	CF (°F)	$RT_{NDT(U)}$ (°F)	σ_u (°F)	σ_Δ[1] (°F)	Margin (°F)	¼T Fluence (n/cm^2, E>1.0 MeV)	¼T FF	¼T ΔRT_{NDT} (°F)	¼T ART (°F)	¾T Fluence (n/cm^2, E>1.0 MeV)	¾T FF	¾T ΔRT_{NDT} (°F)	¾T ART (°F)	
Upper Shell (US) Forging	1.1	[ ]	50	0.0	[ ]	[ ]	6.59×10^{18}	0.88	[ ]	[ ]	2.24×10^{18}	0.60	[ ]	[ ]	Supplement 3
Intermediate Shell (IS) Forging	1.1	37.0	40	0.0	17.0	34.0	6.78×10^{19}	1.46	53.9	128	2.68×10^{19}	1.26	47	121	
IS using Surveillance Data	2.1	6.9	40	0.0	5.0	10.0	6.78×10^{19}	1.46	10.0	60	2.68×10^{19}	1.26	9	59	
Lower Shell (LS) Forging	1.1	51.0	30	0.0	17.0	34.0	6.19×10^{19}	1.44	73.6	138	2.44×10^{19}	1.24	63	127	
LS using Surveillance Data	2.1	48.7	30	0.0	17.0	34.0	6.19×10^{19}	1.44	70.2	134	2.44×10^{19}	1.24	60	124	
Lower Head Ring (transition)	1.1	[ ]	[ ]	[ ]	[ ]	[ ]	1.04×10^{17}	0.11	[ ]	[ ]	N/A[2]	N/A	N/A	N/A	Supplement 3
Inlet Nozzle 1	1.1	122.0	[ ]	[ ]	8.3	[ ]	1.38×10^{17}	0.14	16.6	[ ]	N/A[2]	N/A	N/A	N/A	Supplement 3
Inlet Nozzle 2	1.1	121.5	[ ]	[ ]	8.3	[ ]	1.38×10^{17}	0.14	16.5	[ ]	N/A[2]	N/A	N/A	N/A	Supplement 3
Inlet Nozzle 3	1.1	123.0	[ ]	[ ]	8.4	[ ]	1.38×10^{17}	0.14	16.7	[ ]	N/A[2]	N/A	N/A	N/A	Supplement 3
Outlet Nozzle 1	1.1	122.8	[ ]	[ ]	7.5	[ ]	1.17×10^{17}	0.12	14.9	[ ]	N/A[2]	N/A	N/A	N/A	Supplement 3
Outlet Nozzle 2	1.1	121.00	[ ]	[ ]	7.4	[ ]	1.17×10^{17}	0.12	14.7	[ ]	N/A[2]	N/A	N/A	N/A	Supplement 3
Outlet Nozzle 3	1.1	121.00	[ ]	[ ]	7.4	[ ]	1.17×10^{17}	0.12	14.7	[ ]	N/A[2]	N/A	N/A	N/A	Supplement 3
Inlet Nozzle Weld	1.1	[ ]	[ ]	[ ]	[ ]	[ ]	1.38×10^{17}	0.14	[ ]	[ ]	N/A[2]	N/A	N/A	N/A	Supplement 3
Inlet Nozzle Weld	1.1	[ ]	[ ]	[ ]	[ ]	[ ]	1.38×10^{17}	0.14	[ ]	[ ]	N/A[2]	N/A	N/A	N/A	Supplement 3
Inlet Nozzle Weld	1.1	[ ]	[ ]	[ ]	[ ]	[ ]	1.38×10^{17}	0.14	[ ]	[ ]	N/A[2]	N/A	N/A	N/A	Supplement 3
Outlet Nozzle Weld	1.1	[ ]	[ ]	[ ]	[ ]	[ ]	1.17×10^{17}	0.12	[ ]	[ ]	N/A[2]	N/A	N/A	N/A	Supplement 3
US to IS Circumferential Weld	1.1	180.0	-33.2	12.2	28.0	61.1	7.10×10^{18}	0.90	162.7	191	2.80×10^{18}	0.65	117	145	

Table 4.2.4-1: Turkey Point Unit 3 ART Calculations for 72 EFPY

Reactor Vessel Material	Reg. Guide 1.99 Rev. 2 Position	CF (°F)	$RT_{NDT(U)}$ (°F)	σ_u (°F)	$\sigma_{\acute{c}}$[1] (°F)	Margin (°F)	¼T Fluence (n/cm², E>1.0 MeV)	¼T FF	¼T ćRTNDT (°F)	¼T ART (°F)	¾T Fluence (n/cm², E>1.0 MeV)	¾T FF	¾T ćRTNDT (°F)	¾T ART (°F)
IS to LS Circumferential Weld	1.1	167.6	-53.5	12.8	28.0	61.6	6.19×10^{19}	1.44	241.7	250	2.44×10^{19}	1.24	208	216
IS to LS using Surveillance Data	2.1	151.1	-53.5	12.8	28.0	61.6	6.19×10^{19}	1.44	217.5	226	2.44×10^{19}	1.24	187	195
LS to Transition Ring Circumferential Weld	1.1	157.4	[ ]	[ ]	8.8	[ ]	1.02×10^{17}	0.11	17.5	[ ]	N/A[2]	N/A	N/A	N/A

Supplement 3

Notes for Table 4.2.4-1

1. For ¾T ćRTNDT that is less than $\sigma_{\acute{c}}$, the ¾T used the same value as the $\sigma_{\acute{c}}$ for ¼T for simplicity since the ćRTNDT for these materials were not limiting.
2. For the inlet and outlet nozzles and welds, and the lower transition ring and weld, only the ¼T attenuated fluences were calculated and considered equal at the ¾T locations.

Table 4.2.4-2
Turkey Point Unit 4 ART Calculations for 72 EFPY

Reactor Vessel Material	Reg. Guide 1.99 Rev. 2 Position	CF (°F)	$RT_{NDT(U)}$ (°F)	σ_u (°F)	σ_Δ[1] (°F)	Margin (°F)	¼T Fluence (n/cm², E>1.0 MeV)	¼T FF	¼T ΔRT_{NDT} (°F)	¼T ART (°F)	¾T Fluence (n/cm², E>1.0 MeV)	¾T FF	¾T ΔRT_{NDT} (°F)	¾T ART (°F)	
Upper Shell (US) Forging	1.1	[ ]	40	0.0	[ ]	[ ]	6.70×10^{18}	0.89	[ ]	[ ]	2.28×10^{18}	0.60	[ ]	[ ]	Supplement 3
Intermediate Shell (IS) Forging	1.1	33.4	50	0.0	17.0	34.0	6.78×10^{19}	1.46	48.7	133	2.68×10^{19}	1.26	42	126	
Lower Shell (LS) Forging	1.1	34.6	40	0.0	17.0	34.0	6.16×10^{19}	1.44	49.9	124	2.43×10^{19}	1.24	43	117	
LS using Surveillance Data	2.1	4.9	50	0.0	3.5	7.0	6.16×10^{19}	1.44	7.0	54	2.43×10^{19}	1.24	6	53	
Lower Head Ring (transition)	1.1	[ ]	[ ]	[ ]	[ ]	[ ]	1.02×10^{17}	0.11	[ ]	[ ]	N/A[2]	N/A	N/A	N/A	Supplement 3
Inlet Nozzle 1	1.1	51.0	[ ]	[ ]	3.6	[ ]	1.45×10^{17}	0.14	7.2	[ ]	N/A[2]	N/A	N/A	N/A	Supplement 3
Inlet Nozzle 2	1.1	123.4	[ ]	[ ]	8.7	[ ]	1.45×10^{17}	0.14	17.3	[ ]	N/A[2]	N/A	N/A	N/A	Supplement 3
Inlet Nozzle 3	1.1	121.8	[ ]	[ ]	8.5	[ ]	1.45×10^{17}	0.14	17.1	[ ]	N/A[2]	N/A	N/A	N/A	Supplement 3
Outlet Nozzle 1	1.1	122.5	[ ]	[ ]	7.5	[ ]	1.17×10^{17}	0.12	14.9	[ ]	N/A[2]	N/A	N/A	N/A	Supplement 3
Outlet Nozzle 2	1.1	120.0	[ ]	[ ]	7.3	[ ]	1.17×10^{17}	0.12	14.6	[ ]	N/A[2]	N/A	N/A	N/A	Supplement 3
Outlet Nozzle 3	1.1	120.5	[ ]	[ ]	7.3	[ ]	1.17×10^{17}	0.12	14.7	[ ]	N/A[2]	N/A	N/A	N/A	Supplement 3
Inlet Nozzle Weld 1	1.1	[ ]	[ ]	[ ]	[ ]	[ ]	1.45×10^{17}	0.14	[ ]	[ ]	N/A[2]	N/A	N/A	N/A	Supplement 3
Inlet Nozzle Weld 2	1.1	[ ]	[ ]	[ ]	[ ]	[ ]	1.45×10^{17}	0.14	[ ]	[ ]	N/A[2]	N/A	N/A	N/A	Supplement 3
Inlet Nozzle Weld 3	1.1	[ ]	[ ]	[ ]	[ ]	[ ]	1.45×10^{17}	0.14	[ ]	[ ]	N/A[2]	N/A	N/A	N/A	Supplement 3
Outlet Nozzle Weld 1	1.1	[ ]	[ ]	[ ]	[ ]	[ ]	1.17×10^{17}	0.12	[ ]	[ ]	N/A[2]	N/A	N/A	N/A	Supplement 3
Outlet Nozzle Weld 2	1.1	[ ]	[ ]	[ ]	[ ]	[ ]	1.17×10^{17}	0.12	[ ]	[ ]	N/A[2]	N/A	N/A	N/A	Supplement 3
US to IS Circumferential Weld Inside 67%[3]	1.1	180.0	-33.2	12.2	28.0	61.1	7.22×10^{18}	0.91	163.6	191	N/A	N/A	N/A	N/A	
US to IS Circumferential Weld Outside 33%[4]	1.1	199.3	-31.1	13.7	28.0	62.3	N/A	N/A	N/A	N/A	2.85×10^{18}	0.66	131	162	
IS to LS Circumferential Weld	1.1	167.55	-53.5	12.8	28.0	61.6	6.16×10^{19}	1.44	241.5	250	2.43×10^{19}	1.24	208	216	
IS to LS using Surveillance Data	2.1	151.1	-53.5	12.8	28.0	61.6	6.16×10^{19}	1.44	217.7	226	2.43×10^{19}	1.24	187	195	
LS to Transition Ring Circumferential Weld	1.1	157.4	[ ]	[ ]	8.8	[ ]	1.02×10^{17}	0.11	17.5	[ ]	N/A[2]	N/A	N/A	N/A	Supplement 3