ATTACHMENT 1P CONTAINS INFORMATION REQUESTED TO BE WITHHELD FROM PUBLIC DISCLOSURE UNDER 10 CFR 2.390

FPL.

L-2018-212
10 CFR 54.17

November 19, 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
NUREG/CR-6909 Revision 1 Methodology Update SLRA Revisions

References:

1. FPL Letter L-2018-004 to NRC dated January 30, 2018, Turkey Point Units 3 and 4 Subsequent License Renewal Application (ADAMS Accession No. ML18037A812)
2. FPL Letter L-2018-082 to NRC dated April 10, 2018, Turkey Point Units 3 and 4 Subsequent License Renewal Application – Revision 1 (ADAMS Accession No. ML18113A134)
3. FPL Letter L-2018-174 to NRC dated October 24, 2018, Turkey Point Units 3 and 4 Subsequent License Renewal Application Safety Review Requests for Additional Information (RAI) Set 4 Responses

Florida Power & Light Company (FPL) submitted a subsequent license renewal application (SLRA) for Turkey Point Units 3 and 4 to the NRC on January 30, 2018 (Reference 1) and SLRA Revision 1 on April 10, 2018 (Reference 2).

The purpose of this letter is to provide, as attachments to this letter, public (Attachment 1) and proprietary (Attachment 1P) SLRA update revisions stemming from an SLRA NRC In-Office Audit follow-up item regarding application of NUREG/CR-6909 Revision 1 methodology (as described in the Reference 3 FPL letter). Each attachment and associated information enclosures amend the SLRA and are indexed on page 2 of this letter.

Attachment 1P contains proprietary information (enclosed within brackets and/or marked 'Withhold from Public Disclosure Under 10 CFR 2.390') that FPL requests be withheld from public disclosure under 10 CFR 2.390(a)(4). The withholding request applications for this proprietary information are enclosed with, or referenced within, Attachments 1 and 1P. Please refer to the enclosure cover sheets for Enclosures 1, 3 and 9 of Attachments 1 and 1P for a listing of the proprietary information each withholding request application applies to.

A084
NRR

If you have any questions, or need additional information, please contact me at 561-691-2294.

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

Executed on November 19, 2018.

Sincerely,

William Maher
Senior Licensing Director
Florida Power & Light Company

WDM/RFO

Attachments: 2 SLRA Update Revisions (refer to Letter Attachment Index)

Enclosures: 24 SLRA Update Revisions Enclosures (refer to Letter Enclosures Index)

LETTER ATTACHMENT INDEX			
Attachment	**SLRA Update Revision**	**Attachment**	**SLRA Update Revision**
1	Public (Non-Proprietary)	1P	Proprietary

LETTER ENCLOSURES INDEX			
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Enclosure 1 (SLRA Enclosure 2 Attachment 2)

Westinghouse Letter CAW-18-4804 dated September 18, 2018, Application for Withholding Proprietary Information from Public Disclosure

Applies to:

Attachment 1 Enclosure 2 (SLRA Enclosure 4, Attachment 7): Westinghouse LTR-CECO-17-025-NP (Non-Proprietary), Revision 3, Environmentally Assisted Fatigue Evaluation of the Turkey Point Unit 3 and Unit 4 Replacement Steam Generators, September 14, 2018

Attachment 1 Enclosure 12 (SLRA Enclosure 4 Attachment 5). Structural Integrity Associates Engineering Report No. 1700109.401P, Revision 8 - REDACTED, Evaluation of Environmentally-Assisted Fatigue for Turkey Point Units 3 and 4 for Subsequent License Renewal, October 26, 2018

Attachment 14 Enclosure of FPL Letter L-2018-174 to NRC dated October 24, 2018, Turkey Point Units 3 and 4 Subsequent License Renewal Application, Safety Review Requests for Additional Information (RAI) Set 4 Responses (SLRA Enclosure 4 Attachment 7): Westinghouse Letter LTR-SDA-II-17-13-NP (Non-Proprietary), Revision 4, Environmentally Assisted Fatigue Evaluation of the Turkey Point Unit 3 and Unit 4 Pressurizer Upper Head and Shell and Reactor Vessel Core Support Blocks, September 14, 2018 (ADAMS Accession No. ML18299A114)

Westinghouse Non-Proprietary Class 3

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USA

U.S. Nuclear Regulatory Commission
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CAW-18-4804

September 18, 2018

APPLICATION FOR WITHHOLDING PROPRIETARY INFORMATION FROM PUBLIC DISCLOSURE

Subject: LTR-SDA-II-17-13-P, Rev. 4, "Environmentally Assisted Fatigue Evaluation of the Turkey Point Unit 3 and Unit 4 Pressurizer Upper Head and Shell and Reactor Vessel Core Support Blocks (Westinghouse Proprietary Class 2)" (Proprietary)

LTR-CECO-17-025-P, Rev. 3, "Environmentally Assisted Fatigue Evaluation of the Turkey Point Unit 3 and Unit 4 Replacement Steam Generators" (Proprietary)

The Application for Withholding Proprietary Information from Public Disclosure is submitted by Westinghouse Electric Company LLC ("Westinghouse"), pursuant to the provisions of paragraph (b)(1) of Section 2.390 of the Nuclear Regulatory Commission's ("Commission's") regulations. It contains commercial strategic information proprietary to Westinghouse and customarily held in confidence.

The proprietary information for which withholding is being requested in the above-referenced report is further identified in Affidavit CAW-18-4804 signed by the owner of the proprietary information, Westinghouse. The Affidavit, which accompanies this letter, sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of 10 CFR Section 2.390 of the Commission's regulations.

Accordingly, this letter authorizes the utilization of the accompanying Affidavit by Florida Power & Light Company.

Correspondence with respect to the proprietary aspects of the Application for Withholding or the Westinghouse Affidavit should reference CAW-18-4804 and should be addressed to James A. Gresham, Consulting Engineer, Licensing and Regulatory Affairs, Westinghouse Electric Company, 1000 Westinghouse Drive, Building 2 Suite 259, Cranberry Township, Pennsylvania 16066.

James A. Gresham
Licensing and Regulatory Affairs

CAW-18-4804

AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

ss

COUNTY OF BUTLER:

I, James A. Gresham, am authorized to execute this Affidavit on behalf of Westinghouse Electric Company LLC ("Westinghouse") and declare that the averments of fact set forth in this Affidavit are true and correct to the best of my knowledge, information, and belief.

Executed on: 9/18/18

James A. Gresham
Licensing and Regulatory Affairs

(1) I am Consulting Engineer, Licensing and Regulatory Affairs, Westinghouse Electric Company LLC ("Westinghouse"), and as such, I have been specifically delegated the function of reviewing the proprietary information sought to be withheld from public disclosure in connection with nuclear power plant licensing and rule making proceedings, and am authorized to apply for its withholding on behalf of Westinghouse.

(2) I am making this Affidavit in conformance with the provisions of 10 CFR Section 2.390 of the Nuclear Regulatory Commission's ("Commission's") regulations and in conjunction with the Westinghouse Application for Withholding Proprietary Information from Public Disclosure accompanying this Affidavit.

(3) I have personal knowledge of the criteria and procedures utilized by Westinghouse in designating information as a trade secret, privileged or as confidential commercial or financial information.

(4) Pursuant to the provisions of paragraph (b)(4) of Section 2.390 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure should be withheld.

(i) The information sought to be withheld from public disclosure is owned and has been held in confidence by Westinghouse.

(ii) The information is of a type customarily held in confidence by Westinghouse and not customarily disclosed to the public. Westinghouse has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The application of that system and the substance of that system constitute Westinghouse policy and provide the rational basis required.

Under that system, information is held in confidence if it falls in one or more of several types, the release of which might result in the loss of an existing or potential competitive advantage, as follows:

(a) The information reveals the distinguishing aspects of a process (or component, structure, tool, method, etc.) where prevention of its use by any of

Westinghouse's competitors without license from Westinghouse constitutes a competitive economic advantage over other companies.

(b) It consists of supporting data, including test data, relative to a process (or component, structure, tool, method, etc.), the application of which data secures a competitive economic advantage (e.g., by optimization or improved marketability).

(c) Its use by a competitor would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing a similar product.

(d) It reveals cost or price information, production capacities, budget levels, or commercial strategies of Westinghouse, its customers or suppliers.

(e) It reveals aspects of past, present, or future Westinghouse or customer funded development plans and programs of potential commercial value to Westinghouse.

(f) It contains patentable ideas, for which patent protection may be desirable.

(iii) There are sound policy reasons behind the Westinghouse system which include the following:

(a) The use of such information by Westinghouse gives Westinghouse a competitive advantage over its competitors. It is, therefore, withheld from disclosure to protect the Westinghouse competitive position.

(b) It is information that is marketable in many ways. The extent to which such information is available to competitors diminishes the Westinghouse ability to sell products and services involving the use of the information.

(c) Use by our competitor would put Westinghouse at a competitive disadvantage by reducing his expenditure of resources at our expense.

(d) Each component of proprietary information pertinent to a particular competitive advantage is potentially as valuable as the total competitive advantage. If competitors acquire components of proprietary information, any one component may be the key to the entire puzzle, thereby depriving Westinghouse of a competitive advantage.

(e) Unrestricted disclosure would jeopardize the position of prominence of Westinghouse in the world market, and thereby give a market advantage to the competition of those countries.

(f) The Westinghouse capacity to invest corporate assets in research and development depends upon the success in obtaining and maintaining a competitive advantage.

(iv) The information is being transmitted to the Commission in confidence and, under the provisions of 10 CFR Section 2.390, is to be received in confidence by the Commission.

(v) The information sought to be protected is not available in public sources or available information has not been previously employed in the same original manner or method to the best of our knowledge and belief.

(vi) The proprietary information sought to be withheld in this submittal is that which is appropriately marked in LTR-SDA-II-17-13-P, Rev. 4, "Environmentally Assisted Fatigue Evaluation of the Turkey Point Unit 3 and Unit 4 Pressurizer Upper Head and Shell and Reactor Vessel Core Support Blocks (Westinghouse Proprietary Class 2)" (Proprietary), dated September 18, 2018 and LTR-CECO-17-025-P, Rev. 3, "Environmentally Assisted Fatigue Evaluation of the Turkey Point Unit 3 and Unit 4 Replacement Steam Generators" (Proprietary), dated September 14, 2018, for submittal to the Commission, being transmitted by Florida Power & Light Company letter. The proprietary information as submitted by Westinghouse is that associated with Westinghouse's request for NRC approval of LTR-SDA-II-17-13-P and LTR-CECO-17-025-P, and may be used only for that purpose.

(a) This information is part of that which will enable Westinghouse to provide a technical justification for acceptability of environmental assisted fatigue for various components for Turkey Point Units 3 and 4 in support of their subsequent license renewal program.

(b) Further, this information has substantial commercial value as follows:

(i) Westinghouse plans to sell the use of similar information to its customers for the purpose of supporting other subsequent license renewal programs.

(ii) Westinghouse can sell support and defense of industry guidelines and acceptance criteria for plant-specific applications.

(iii) The information requested to be withheld reveals the distinguishing aspects of a methodology which was developed by Westinghouse.

Public disclosure of this proprietary information is likely to cause substantial harm to the competitive position of Westinghouse because it would enhance the ability of competitors to provide similar technical evaluation justifications and licensing defense services for commercial power reactors without commensurate expenses. Also, public disclosure of the information would enable others to use the information to meet NRC requirements for licensing documentation without purchasing the right to use the information.

The development of the technology described in part by the information is the result of applying the results of many years of experience in an intensive Westinghouse effort and the expenditure of a considerable sum of money.

In order for competitors of Westinghouse to duplicate this information, similar technical programs would have to be performed and a significant manpower effort, having the requisite talent and experience, would have to be expended.

Further the deponent sayeth not.

PROPRIETARY INFORMATION NOTICE

Transmitted herewith are proprietary and non-proprietary versions of a document, furnished to the NRC in connection with requests for generic and/or plant-specific review and approval.

In order to conform to the requirements of 10 CFR 2.390 of the Commission's regulations concerning the protection of proprietary information so submitted to the NRC, the information which is proprietary in the proprietary versions is contained within brackets, and where the proprietary information has been deleted in the non-proprietary versions, only the brackets remain (the information that was contained within the brackets in the proprietary versions having been deleted). The justification for claiming the information so designated as proprietary is indicated in both versions by means of lower case letters (a) through (f) located as a superscript immediately following the brackets enclosing each item of information being identified as proprietary or in the margin opposite such information. These lower case letters refer to the types of information Westinghouse customarily holds in confidence identified in Sections (4)(ii)(a) through (4)(ii)(f) of the Affidavit accompanying this transmittal pursuant to 10 CFR 2.390(b)(1).

COPYRIGHT NOTICE

The reports transmitted herewith each bear a Westinghouse copyright notice. The NRC is permitted to make the number of copies of the information contained in these reports which are necessary for its internal use in connection with generic and plant-specific reviews and approvals as well as the issuance, denial, amendment, transfer, renewal, modification, suspension, revocation, or violation of a license, permit, order, or regulation subject to the requirements of 10 CFR 2.390 regarding restrictions on public disclosure to the extent such information has been identified as proprietary by Westinghouse, copyright protection notwithstanding. With respect to the non-proprietary versions of these reports, the NRC is permitted to make the number of copies beyond those necessary for its internal use which are necessary in order to have one copy available for public viewing in the appropriate docket files in the public document room in Washington, DC and in local public document rooms as may be required by NRC regulations if the number of copies submitted is insufficient for this purpose. Copies made by the NRC must include the copyright notice in all instances and the proprietary notice if the original was identified as proprietary.

cc: w/o Attachment 1P

Senior Resident Inspector, USNRC, Turkey Point Nuclear
Regional Administrator, USNRC, Region II
Project Manager, USNRC, Turkey Point Nuclear
Plant Project Manager, USNRC, SLRA
Plant Project Manager, USNRC, SLRA Environmental
Ms. Cindy Becker, Florida Department of Health

Enclosure 2 (SLRA Enclosure 4 Attachment 7)

Westinghouse LTR-CECO-17-025-NP (Non-Proprietary), Revision 3, Environmentally Assisted Fatigue Evaluation of the Turkey Point Unit 3 and Unit 4 Replacement Steam Generators
September 14, 2018

Westinghouse Non-Proprietary Class 3

Westinghouse

To: John T. Ahearn
Date: September 14, 2018

cc: Nicole D. Vitale

From: Kim J. Romanko
Your ref:

Ext: 724-722-5104
Our ref: LTR-CECO-17-025-NP, Rev. 3

Fax: (724) 722-5889

Subject: **Environmentally Assisted Fatigue Evaluation of the Turkey Point Unit 3 and Unit 4 Replacement Steam Generators**

References:

1. FPL Purchase Order: 2000249045, September 29, 2017. (Attached in EDMS)
2. Calculation Note: CN-CECO-17-002, Revision 1, "Evaluation of the Turkey Point Units 3 and 4 Divider Plate and Tube Fatigue for an 80-year Plant Life," October 2018. (Westinghouse Proprietary)
3. FPL Letter: NNPWEC-17-0227, Revision 0, "Formal Transmittal of Inputs for Westinghouse Evaluation of Environmentally Assisted Fatigue at Turkey Point Units 3 & 4," October 17, 2017.
4. NUREG/CR-6909, Revision 1, "Effect of LWR Water Environments on the Fatigue Life of Reactor Materials," (ADAMS Package ML16319A004).
5. Design Specification: 953362, Revision 3, "Florida Power & Light Turkey Point Units 3 & 4 Replacement Steam Generators – Reactor Coolant System," April 2009.

(Note: Change bars are used in the left margins where substantial or technical changes occurred. Change bars are not used for editorial changes such as formatting changes and minor non-technical corrections.)

The purpose of this letter is to provide results from the environmentally assisted fatigue (EAF) analysis performed for the Turkey Point Unit 3 and Unit 4 replacement steam generators (RSGs) primary side subcomponents in support of Subsequent License Renewal (SLR). This letter provides the letter report deliverable, outlined in Purchase Order 2000249045, Reference 1.

Revision 2 of this letter is generated to identify the Reference 2 change to Revision 1 and to update the reference to NUREG-6909, Revision 1, Reference 4, which is now "Final." Revision 3 of this letter is generated to add the export control statement at the end of this letter. There is no change to the tabulated values contained herein from Revision 1 of this letter. Consistent with the requirements of Westinghouse procedure BMS-LGL-84 for information to be transmitted to the NRC, a "Proprietary Class 2" and "Non-Proprietary Class 3" version of this document, LTR-CECO-17-025, is generated with the designator of "-P" and "-NP" added to the letter number to designate proprietary and non-proprietary versions, respectively. There is no

change to the Revision 1 data of this letter as presented. Revisions 2 and 3 changes are marked with a vertical bar in the left margin.

Described in Reference 1, the screening EAF evaluation is performed for two (2) sentinel RSG locations, divider plate and tubes, for which Westinghouse has the analyses of record (AOR). The EAF analysis, Reference 2, is an internal calculation, from which the results reported below were extracted. The calculation, Reference 2, is based on design transient information provided in Reference 3. Table 1 summarizes the results of the RSG EAF evaluations, including the baseline fatigue cumulative usage factors (CUF), the environmental fatigue correction factors (F_{en}), and the final EAF cumulative usage factors (CUF_{en}) for the critical RSG subcomponents, Reference 1. The analyses documented in Reference 2 were performed considering the F_{en} formulas and fatigue curves from Reference 4. The basis for the CUF_{en} utilizes both design and projected transient cycles, References 5 and 3, respectively. The transient cycles used for the two (2) RSG subcomponents, divider plate and tubes, is provided in Table 2. The transient cycles defined in Table 2 now constitute the RSG design basis for the EAF analysis.

Table 1: EAF Evaluation Results

Equipment	Component	Material	CUF [1]	F_{en}	CUF_{en}
RSG	Divider Plate	Ni-Cr-Fe Alloy (SB-168)	[ ]^{a,c}	[ ]^{a,c}	0.881
RSG	Tubes	Ni-Cr-Fe Alloy (SB-163)	[ ]^{a,c}	[ ]^{a,c}	0.903

Notes:

1. The CUF is derived by using design and projected design transient cycles defined in Table 2 below.

Table 2: Design and Projected Cycles Used in the EAF Evaluation

Transient	Number of Cycles D-Spec.	Projected Cycles Envelope
Heatup	---	181
Cooldown	---	181
Plant Loading	---	533
Plant Unloading	---	533 (1)
10% Step Load Increase	---	164 (2)
10% Step Load Decrease	---	164
Reactor Trip	400	---
50% Step Load Decrease	200	---
Hot Standby	25000	---
Steady-State Fluctuations	Infinite	---
Loss of Flow	80	---
Loss of Load	80	---
Initial Primary Hydro Test	1	---
Subsequent Primary Hydro Test	50	---
Initial Secondary Hydro Test	10	---
Secondary Pressure Test	50	---
Primary/Secondary Leak Test	15	---
Secondary/Primary Leak Test	15	---

Notes:

1. Projected cycle envelope for Turkey Point Unit 3 and 4 is 451 cycles. Conservatively made the number of cycles to be the same as the "Plant Unloading" projected cycles.
2. Projected cycle envelope for Turkey Point Unit 3 and 4 is 82 cycles. Conservatively made the number of cycles to be the same as the "10% Step Load Decrease" projected cycles.

If you have any questions, please contact the undersigned.

Thank you,

Author: Electronically Approved *
Kim J. Romanko
Component Engineering & Chemistry Operations

Verifier: Electronically Approved *
Joshua R. Phillips
Component Engineering & Chemistry Operations

Approved: Electronically Approved *
Jesse S. Baron for Nicole D. Vitale, Manager
Component Engineering & Chemistry Operations

** Electronically Approved Records Are Authenticated in the Electronic Document Management System*

Approval Information

Author Approval Romanko Kim Sep-14-2018 10:49:08
Verifier Approval Phillips Joshua Sep-14-2018 11:22:06
Manager Approval Baron Jesse S Sep-14-2018 11:33:54

Files approved on Sep-14-2018

Enclosure 3 (SLRA Enclosure 2 Attachment 7)

Framatome Application for Withholding Proprietary Information from Public Disclosure, October 12, 2018

Applies to:

Attachment 1 Enclosure 4 (SLRA Enclosure 4, Attachment 8): Framatome Calculation No. 32-9280707, Revision 001, Turkey Point 3 & 4 CRDM Nozzle to Adapter Weld Connection EAF Evaluation, October 5, 2018 (Non-Proprietary)

Attachment 1 Enclosure 5 (SLRA Enclosure 4, Attachment 8): Framatome Calculation No. 32-9280708, Revision 001, Turkey Point 3 & 4 Replacement RVCH CRDM Nozzle EAF Analysis, October 5, 2018 (Non-Proprietary)

Attachment 1 Enclosure 6 (SLRA Enclosure 4, Attachment 8): Framatome Calculation No. 32-92800709, Revision 001, TP CRDM Latch Housing Environmentally Assisted Fatigue, October 4, 2018 (Non-Proprietary)

Attachment 1 Enclosure 7 (SLRA Enclosure 4, Attachment 8): Framatome Calculation No. 32-9280710, Revision 001, TP Vent Nozzle Environmentally Assisted Fatigue, October 4, 2018 (Non-Proprietary)

Attachment 1 Enclosure 8 (SLRA Enclosure 4, Attachment 8): Framatome Calculation No. 32-9280711, Revision 001, Turkey Point SLR EAF Analysis for Reactor Vessel Flange, October 5, 2018 (Non-Proprietary)

Attachment 1 Enclosure 12 (SLRA Enclosure 4 Attachment 5). Structural Integrity Associates Engineering Report No. 1700109.401P, Revision 8 - REDACTED, Evaluation of Environmentally-Assisted Fatigue for Turkey Point Units 3 and 4 for Subsequent License Renewal, October 26, 2018

Attachment 16 Enclosure 3 of FPL Letter L-2018-174 to NRC dated October 24, 2018, Turkey Point Units 3 and 4 Subsequent License Renewal Application, Safety Review Requests for Additional Information (RAI) Set 4 Responses (SLRA Enclosure 4 Attachment 8): Framatome Calculation No. 32-9280712, Rev. 002, TP CRDM Lower Joint Environmentally Assisted Fatigue, October 12, 2018 (Non-Proprietary) (ADAMS Accession No. ML18299A114)

AFFIDAVIT

COMMONWEALTH OF VIRGINIA)
) ss.
CITY OF LYNCHBURG)

1. My name is Gayle Elliott. I am Deputy Director, Licensing & Regulatory Affairs, for Framatome Inc. (Framatome) 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 Calculation Summary Sheets 32-9279161-002, "Turkey Point SLR EAF Analysis for Reactor Vessel Flange," 32-9279174-002, "Turkey Point – 3 & 4 CRDM Nozzle to Adapter Weld Connection EAF Evaluation," 32-9279212-002, "Turkey Point 3 & 4 Replacement RVCH CRDM Nozzle EAF Analysis," 32-9279362-002, "TP Vent Nozzle Environmentally Assisted Fatigue," 32-9279367-002, "TP CRDM Latch Housing Environmentally Assisted Fatigue," all dated September 2018, and 32-9280202-003, "TP CRDM Lower Joint Environmentally Assisted Fatigue," dated October 2018 and referred to herein as "Documents." Information contained in these Documents 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.

4. These Documents contain 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 these Documents as proprietary and confidential.

5. These Documents have been made available to the U.S. Nuclear Regulatory Commission in confidence with the request that the information contained in these Documents 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 these Documents 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 these Documents 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.

SUBSCRIBED before me this 12
day of October, 2018.

Heidi H Elder

Heidi Elder
NOTARY PUBLIC, COMMONWEALTH OF VIRGINIA
MY COMMISSION EXPIRES: 12/31/22
Reg. # 7777873

NUREG/CR-6909 Revision 1 Methodology Update SLRA Revisions

During the June 18 – July 23, 2018 NRC In-Office Audit regarding the Turkey Point Subsequent License Renewal Application (SLRA), the staff reviewed the PTN component calculations for environmentally assisted fatigue (EAF) documented in Enclosure 4 and 5 of Revision 1 to the SLRA. The staff noted that PTN used the methodology specified in the Draft Report for Comment version of NUREG/CR-6909, Rev. 1 (Reference 1).

GALL-SLR AMP X.M1 and the SRP-SLR states, in part, that environmental effects on fatigue for these critical components may be evaluated using the guidance in Regulatory Guide (RG) 1.207, Revision 1 (Reference 2). RG 1.207, Revision 1 recommends the use of NUREG/CR–6909, Revision 1 (Reference 3).

FPL has revised the affected component EAF calculations to be consistent with the methodology included in NUREG/CR–6909, Revision 1 (Reference 3). As indicated in the FPL response to RAI 4.3.3-1 included as Attachment 12 to FPL letter L-2018-174 (Reference 4), NUREG/CR-6909 Draft Revision 1 (Reference 1) and NUREG/CR-6909 Revision 1 (Reference 3) differ only in the application of strain rate for wrought and cast stainless steel materials when calculating component F_{en} values.

The affected EAF calculations are enclosed and replace the corresponding Revision 1 SLRA enclosures, as indicated in each enclosure. The required SLRA revisions are described below.

References:

1. NUREG/CR-6909 (ANL-06/08), Draft Revision 1, Effect of LWR Coolant Environments on the Fatigue Life of Reactor Materials, March 2014
2. Regulatory Guide 1.207, Revision 1, Guidelines for Evaluating the Effects of Light-Water Reactor Coolant Environments in Fatigue Analyses of Metal Components, June 2018
3. NUREG/CR-6909, Revision 1, Effect of LWR Water Environments on the Fatigue Life of Reactor Materials Final Report, May 2018
4. FPL Letter L-2018-174 to NRC dated October 24, 2018, Turkey Point Units 3 and 4 Subsequent License Renewal Application, Safety Review Requests for Additional Information (RAI) Set 4 Responses (ADAMS Accession No. ML18299A114)

Associated SLRA Revisions:

SLRA Section 4.3.3, 4.3.6 and Table 4.3.3-2 are amended as indicated by the following text deletion (strikethrough) and text addition (red underlined font).

Revise the text in the first and third paragraphs on page 4.3-16 of SLRA Section 4.3.3 as follows:

Enclosure 9 (SLRA Enclosure 2 Attachment 9)

Westinghouse Letter CAW-17-4683 dated December 13, 2017, Application for Withholding Data Package for Pressurizer Spray and Surge Nozzle Analysis

Applies to:

Attachment 1 Enclosure 10 (SLRA Enclosure 4, Attachment 6): Structural Integrity Associates EAF Calculation 1700804.315P Revision 3 - REDACTED, Pressurizer Spray Nozzle Fatigue Analysis, dated August 22, 2018

Westinghouse Non-Proprietary Class 3

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CAW-17-4683

December 13, 2017

APPLICATION FOR WITHHOLDING PROPRIETARY INFORMATION FROM PUBLIC DISCLOSURE

Subject: LTR-SGMP-11-66-P, Revision 3, "Turkey Point Units 3 and 4 Data Package for Pressurizer Spray and Surge Nozzle Analysis" (Proprietary)

The Application for Withholding Proprietary Information from Public Disclosure is submitted by Westinghouse Electric Company LLC ("Westinghouse"), pursuant to the provisions of paragraph (b)(1) of Section 2.390 of the Nuclear Regulatory Commission's ("Commission's") regulations. It contains commercial strategic information proprietary to Westinghouse and customarily held in confidence.

The proprietary information for which withholding is being requested in the above-referenced report is further identified in Affidavit CAW-17-4683 signed by the owner of the proprietary information, Westinghouse. The Affidavit, which accompanies this letter, sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of 10 CFR Section 2.390 of the Commission's regulations.

Accordingly, this letter authorizes the utilization of the accompanying Affidavit by Florida Power & Light Company.

Correspondence with respect to the proprietary aspects of the Application for Withholding or the Westinghouse Affidavit should reference CAW-17-4683, and should be addressed to James A. Gresham, Manager, Regulatory Compliance, Westinghouse Electric Company, 1000 Westinghouse Drive, Building 2 Suite 256, Cranberry Township, Pennsylvania 16066.

James A. Gresham, Manager
Regulatory Compliance

CAW-17-4683

AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

ss

COUNTY OF BUTLER:

I, James A. Gresham, am authorized to execute this Affidavit on behalf of Westinghouse Electric Company LLC ("Westinghouse") and declare that the averments of fact set forth in this Affidavit are true and correct to the best of my knowledge, information, and belief.

Executed on: 12/13/17

James A. Gresham, Manager
Regulatory Compliance

(1) I am Manager, Regulatory Compliance, Westinghouse Electric Company LLC ("Westinghouse"), and as such, I have been specifically delegated the function of reviewing the proprietary information sought to be withheld from public disclosure in connection with nuclear power plant licensing and rule making proceedings, and am authorized to apply for its withholding on behalf of Westinghouse.

(2) I am making this Affidavit in conformance with the provisions of 10 CFR Section 2.390 of the Nuclear Regulatory Commission's ("Commission's") regulations and in conjunction with the Westinghouse Application for Withholding Proprietary Information from Public Disclosure accompanying this Affidavit.

(3) I have personal knowledge of the criteria and procedures utilized by Westinghouse in designating information as a trade secret, privileged or as confidential commercial or financial information.

(4) Pursuant to the provisions of paragraph (b)(4) of Section 2.390 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure should be withheld.

(i) The information sought to be withheld from public disclosure is owned and has been held in confidence by Westinghouse.

(ii) The information is of a type customarily held in confidence by Westinghouse and not customarily disclosed to the public. Westinghouse has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The application of that system and the substance of that system constitute Westinghouse policy and provide the rational basis required.

Under that system, information is held in confidence if it falls in one or more of several types, the release of which might result in the loss of an existing or potential competitive advantage, as follows:

(a) The information reveals the distinguishing aspects of a process (or component, structure, tool, method, etc.) where prevention of its use by any of

Westinghouse's competitors without license from Westinghouse constitutes a competitive economic advantage over other companies.

(b) It consists of supporting data, including test data, relative to a process (or component, structure, tool, method, etc.), the application of which data secures a competitive economic advantage (e.g., by optimization or improved marketability).

(c) Its use by a competitor would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing a similar product.

(d) It reveals cost or price information, production capacities, budget levels, or commercial strategies of Westinghouse, its customers or suppliers.

(e) It reveals aspects of past, present, or future Westinghouse or customer funded development plans and programs of potential commercial value to Westinghouse.

(f) It contains patentable ideas, for which patent protection may be desirable.

(iii) There are sound policy reasons behind the Westinghouse system which include the following:

(a) The use of such information by Westinghouse gives Westinghouse a competitive advantage over its competitors. It is, therefore, withheld from disclosure to protect the Westinghouse competitive position.

(b) It is information that is marketable in many ways. The extent to which such information is available to competitors diminishes the Westinghouse ability to sell products and services involving the use of the information.

(c) Use by our competitor would put Westinghouse at a competitive disadvantage by reducing his expenditure of resources at our expense.

(d) Each component of proprietary information pertinent to a particular competitive advantage is potentially as valuable as the total competitive advantage. If competitors acquire components of proprietary information, any one component may be the key to the entire puzzle, thereby depriving Westinghouse of a competitive advantage.

(e) Unrestricted disclosure would jeopardize the position of prominence of Westinghouse in the world market, and thereby give a market advantage to the competition of those countries.

(f) The Westinghouse capacity to invest corporate assets in research and development depends upon the success in obtaining and maintaining a competitive advantage.

(iv) The information is being transmitted to the Commission in confidence and, under the provisions of 10 CFR Section 2.390, is to be received in confidence by the Commission.

(v) The information sought to be protected is not available in public sources or available information has not been previously employed in the same original manner or method to the best of our knowledge and belief.

(vi) The proprietary information sought to be withheld in this submittal is that which is appropriately marked in LTR-SGMP-11-66-P, Revision 3, "Turkey Point Units 3 and 4 Data Package for Pressurizer Spray and Surge Nozzle Analysis" (Proprietary), dated December 2017 for submittal to the Commission, being transmitted by Florida Power & Light Company letter. The proprietary information as submitted by Westinghouse is that associated with Westinghouse's request for NRC approval of LTR-SGMP-11-66-P and may be used only for that purpose.

(a) This information is part of that which will enable Westinghouse to provide a response to a request from Florida Power & Light Company for the relevant data to support the analysis of pressurizer spray nozzle and surge nozzle in the Turkey Point Units 3 and 4. It provides geometric and material property data

related to these nozzles and other structures in their vicinity and the design loads on the nozzles.

(b) Further, this information has substantial commercial value as follows:

(i) Westinghouse plans to sell the use of similar information to its customers for the purpose of supporting other subsequent license renewal programs.

(ii) Westinghouse can sell support and defense of industry guidelines and acceptance criteria for plant-specific applications.

(iii) The information requested to be withheld reveals the distinguishing aspects of a methodology which was developed by Westinghouse.

Public disclosure of this proprietary information is likely to cause substantial harm to the competitive position of Westinghouse because it would enhance the ability of competitors to provide similar technical evaluation justifications and licensing defense services for commercial power reactors without commensurate expenses. Also, public disclosure of the information would enable others to use the information to meet NRC requirements for licensing documentation without purchasing the right to use the information.

The development of the technology described in part by the information is the result of applying the results of many years of experience in an intensive Westinghouse effort and the expenditure of a considerable sum of money.

In order for competitors of Westinghouse to duplicate this information, similar technical programs would have to be performed and a significant manpower effort, having the requisite talent and experience, would have to be expended.

Further the deponent sayeth not.

PROPRIETARY INFORMATION NOTICE

Transmitted herewith are proprietary and non-proprietary versions of a document, furnished to the NRC in connection with requests for generic and/or plant-specific review and approval.

In order to conform to the requirements of 10 CFR 2.390 of the Commission's regulations concerning the protection of proprietary information so submitted to the NRC, the information which is proprietary in the proprietary versions is contained within brackets, and where the proprietary information has been deleted in the non-proprietary versions, only the brackets remain (the information that was contained within the brackets in the proprietary versions having been deleted). The justification for claiming the information so designated as proprietary is indicated in both versions by means of lower case letters (a) through (f) located as a superscript immediately following the brackets enclosing each item of information being identified as proprietary or in the margin opposite such information. These lower case letters refer to the types of information Westinghouse customarily holds in confidence identified in Sections (4)(ii)(a) through (4)(ii)(f) of the Affidavit accompanying this transmittal pursuant to 10 CFR 2.390(b)(1).

COPYRIGHT NOTICE

The reports transmitted herewith each bear a Westinghouse copyright notice. The NRC is permitted to make the number of copies of the information contained in these reports which are necessary for its internal use in connection with generic and plant-specific reviews and approvals as well as the issuance, denial, amendment, transfer, renewal, modification, suspension, revocation, or violation of a license, permit, order, or regulation subject to the requirements of 10 CFR 2.390 regarding restrictions on public disclosure to the extent such information has been identified as proprietary by Westinghouse, copyright protection notwithstanding. With respect to the non-proprietary versions of these reports, the NRC is permitted to make the number of copies beyond those necessary for its internal use which are necessary in order to have one copy available for public viewing in the appropriate docket files in the public document room in Washington, DC and in local public document rooms as may be required by NRC regulations if the number of copies submitted is insufficient for this purpose. Copies made by the NRC must include the copyright notice in all instances and the proprietary notice if the original was identified as proprietary.

PTN's **original** approach for SLR was to generate CUF_{en} calculations using the guidance in NUREG/CR-6909, Revision 0 (Reference 4.3.6.31) (with "average temperature" used consistent with the clarification that was added to NUREG/CR-6909, **Draft** Revision 1 (Reference 4.3.6.11)). **Subsequent to the issuance of Revision 1 of the PTN SLRA, Revision 1 to NUREG/CR-6909 (Reference 4.3.6.32) and Regulatory Guide 1.207 (Reference 4.3.6.33) were issued. As a result of this methodology change, the CUF_{en} analyses for the affected components have been revised.**

Based on the foregoing discussion, the updated SLR EAF assessment for PTN was performed as follows:

- The plant-specific NUREG/CR-6260 locations were reevaluated for SLR.
- To ensure that any locations that may be more limiting than the NUREG/CR-6260 locations were addressed, all of the reactor coolant pressure boundary components with existing ASME Code fatigue analyses CUFs presented in Table 4.3-1 were evaluated for EAF for SLR.
- The revised plant-specific EAF multipliers applicable for SLR were **originally** calculated based on the latest F_{en} methods using the guidance in NUREG/CR-6909, Revision 0 (Reference 4.3.6.31) (with "average temperature" used consistent with the clarification that was added to NUREG/CR-6909, **Draft** Revision 1 (Reference 4.3.6.11). **Subsequent to the issuance of Revision 1 of the PTN SLRA, Revision 1 to NUREG/CR-6909 (Reference 4.3.6.32) and Regulatory Guide 1.207 (Reference 4.3.6.33) were issued. As a result of this methodology change, the CUF_{en} analyses for the affected components have been revised.**

Revise the text on page 4.3-19 of SLRA Section 4.3.3 as follows:

The next step in the PTN EAF evaluation process was to apply bounding EAF multipliers (F_{en}) to the existing ASME Code fatigue analyses CUFs associated with the components requiring EAF evaluation from Table 4.3.3-1. These multipliers were **originally** developed based on the NUREG/CR-6909, Revision 0 (Reference 4.3.6.31)(with "average temperature" used consistent with the clarification that was added to NUREG/CR-6909, **Draft** Revision 1 (Reference 4.3.6.11)), and PTN plant-specific reactor coolant system chemistry. ~~The specific details regarding the development of these multipliers is provided in Appendix A of Reference 4.3.6.8, which is included in Enclosure 4 (non-proprietary) and Enclosure 5 (proprietary). In cases where the materials were not known, F_{en} values for all three F_{en} material groupings (carbon and low alloy steels, stainless steels, and nickel alloys) were determined and the maximum multiplier was used.~~

Subsequent to the issuance of Revision 1 of the PTN SLRA, Revision 1 to NUREG/CR-6909 (Reference 4.3.6.32) and Regulatory Guide 1.207 (Reference 4.3.6.33) were issued. NUREG/CR-6909 Draft Revision 1 and final Revision 1 differ only in the application of strain rate for wrought and cast stainless steel materials

when calculating F_{en} values. As a result of this methodology change, the CUF_{en} analyses for the affected components have been revised. The specific details regarding the development of these multipliers is provided in Appendix A of Reference 4.3.6.8, which is included in Enclosure 4 (non-proprietary) and Enclosure 5 (proprietary). In cases where the materials were not known, F_{en} values for all three F_{en} material groupings (carbon and low alloy steels, stainless steels, and nickel alloys) were determined and the maximum multiplier was used.

The results of these **revised** calculations are presented in Table 4.3.3-2 below. If the CUF_{en} for a particular reactor coolant pressure boundary component is less than 1.0 after this step, identified as CUF_{en} Screening in the table, the component is acceptable for EAF for the SPEO.

Revise SLRA Table 4.3.3-2 as follows:

Table. 4.3.3-2
80-Year Environmentally Assisted Fatigue CUFs

Component	Material Type	Design CUF	F_{en} (1)	CUF_{en} Screening
NUREG/CR-6260 Locations(2)				
Surge line hot leg nozzle	Stainless steel	0.944	(3)	(3)
Safety injection nozzle	Stainless steel	0.046	~~14.06~~ 12.81	~~0.647~~ 0.589
Residual heat removal (RHR) piping	Stainless steel	0.022	~~14.06~~ 12.81	~~0.309~~ 0.282
Charging nozzle	Stainless steel	0.030	~~14.06~~ 12.81	~~0.422~~ 0.384
Reactor Vessel				
Head flange	Carbon steel, stainless steel clad	0.083	~~6.276~~ 6.28	0.521
Vessel flange	Carbon steel, stainless steel clad	0.531	~~6.276~~ 6.28	3.333
Outlet nozzles	Carbon steel, stainless steel clad and safe end	0.063	~~2.45~~ 6.28	~~0.154~~ 0.396
Inlet nozzles	Carbon steel, stainless steel clad and safe end	0.066	~~2.45~~ 6.28	~~0.162~~ 0.414
Core support pads	Inconel, alloy 600	0.020	3.75	0.075
Shell at core support pads	Carbon steel with Inconel clad	0.509	~~4.77~~ 6.28	~~2.428~~ 3.197
Bottom head to shell juncture	Carbon steel, stainless steel clad	0.023	~~14.06~~ 12.81	~~0.323~~ 0.295
Bottom-mounted instrumentation nozzles	Stainless steel	0.002	~~14.06~~ 12.81	~~0.028~~ 0.026
Shell-to-shell juncture	Carbon steel, stainless steel clad	0.034	~~14.06~~ 12.81	~~0.478~~ 0.436
Vent nozzle	Inconel, alloy 690	0.490	3.75	1.838
CRDM housing J-weld	Nickel alloy	0.730	3.75	2.738
CRDM housing bi-metallic weld	Nickel alloy	0.620	3.75	2.323
CRDM latch housing	Stainless steel	[ ]	~~14.06~~ 12.81	~~[ ]~~ [ ]
CRDM rod travel housing	Stainless steel	[ ]	~~14.06~~ 12.81	~~[ ]~~ [ ]
CRDM cap	Stainless steel	[ ]	~~14.06~~ 12.81	~~[ ]~~ [ ]
Middle joint	Stainless steel	[ ]	~~14.06~~ 12.81	~~[ ]~~ [ ]
Upper joint	Stainless steel	[ ]	~~14.06~~ 12.81	~~[ ]~~ [ ]
Lower joint	Stainless steel	[ ]	~~14.06~~ 12.81	~~[ ]~~ [ ]

Table 4.3.3-2
80-Year Environmentally Assisted Fatigue CUFs (Continued)

Component	Material Type	Design CUF	F_{en}(1)	CUF_{en} Screening
Steam Generators (Primary Side)				
Primary chamber, tubesheet and stub barrel complex	Carbon steel, alloy 600 and stainless steel clad	[ ]	~~6.276~~ 12.81	[ ]
Divider plate	Inconel	[ ]	3.75	[ ]
Tubes	Inconel, alloy 600 thermally treated	[ ]	3.75	[ ]
Reactor Coolant Pumps				
Casing	Stainless steel	< 0.001	~~14.06~~ 12.81	~~0.014~~ 0.013
Main flange	Stainless steel	0.025	~~14.06~~ 12.81	~~0.351~~ 0.320
Pressurizer				
Spray nozzle	Carbon steel with stainless steel clad and safe end	[ ]	~~14.06~~ 12.81	[ ]
Upper head	Low alloy steel	[ ]	6.28	[ ]
Surge nozzle	Stainless steel	[ ]	(3)	(3)
Safety and relief nozzle	Carbon steel, stainless steel clad and safe end	[ ]	~~14.06~~ 12.81	[ ]
Support skirt and flange	Carbon steel	[ ]	6.28	[ ]
Lower head	Carbon steel, stainless steel clad	[ ]	~~14.06~~ 12.81	[ ]
Heater well	Carbon steel, stainless steel clad	[ ]	~~14.06~~ 12.81	[ ]
Manway-pad	Carbon steel	[ ]	6.28	[ ]
Manway-welded diaphragm	Nickel alloy	[ ]	3.75	[ ]
Instrument nozzle	Stainless steel	[ ]	~~14.06~~ 12.81	[ ]
Immersion heater	Stainless steel	[ ]	~~14.06~~ 12.81	[ ]

Notes for Table 4.3.3-2

1. F_{en} = environmental multiplier.
2. The reactor vessel NUREG/CR-6260 locations are captured under reactor vessel listing.
3. Managed by the Pressurizer Surge Line Fatigue AMP (Section B.2.4.1).

Revise the text on pages 4.3-21 through 4.3-24 of SLRA Section 4.3.3 as follows:

For locations where CUF_{en} Screening was greater than 1, as identified above highlighted in yellow with bold print, additional analyses **utilizing the methodology described in Revision 1 to NUREG/CR-6909 (Reference 4.3.6.32)** were performed in order to reduce the CUF_{en} to less than 1. These additional analyses are further described below and provided in detail in the references noted below, copies of which are provided in Enclosure 4 (non-proprietary) and Enclosure 5 (proprietary).

Reactor Vessel Flange – CUF_{en} Screening = 3.333

A revised CUF_{en} was calculated by performing a more refined analysis and crediting 80-year projected design cycles for plant heatup, cooldown, loading, unloading, and rapid power increases and decreases.

CUF_{en} Final = 0.373 Reference 4.3.6.25

Reactor Vessel Shell at Core Support Pads – CUF_{en} Screening = ~~2.428~~**3.197**

A revised CUF_{en} was calculated by crediting 80-year projected design cycles for the hydrostatic test at 2485 psig pressure and 400°F temperature.

CUF_{en} Final = 0.910 Reference 4.3.6.19

Reactor Vessel Vent Nozzle – CUF_{en} Screening = 1.838

A revised CUF_{en} was calculated by performing a finite element fatigue calculation using the methodology of Subarticle NB-3200 of Section III of the ASME Code.

CUF_{en} Final = 0.230 Reference 4.3.6.24

CRDM Housing J-Weld – CUF_{en} Screening = 2.738

A revised CUF_{en} was calculated by performing a more refined analysis and crediting 80-year projected design cycles for plant heatup, cooldown, loading, unloading, and rapid power increases and decreases.

CUF_{en} Final = 0.2**99**~~74~~ Reference 4.3.6.22

CRDM Housing Bi-metallic Weld – CUF_{en} Screening = 2.323

A revised CUF_{en} was calculated by performing a more refined analysis and crediting 80-year projected design cycles ~~for plant heatup, cooldown, and reactor trips~~ **as presented in Reference 4.3.6.21.**

CUF_{en} Final = 0.6**46**~~95~~ Reference 4.3.6.21

CRDM Latch Housing – CUF_{en} Screening = [ ]

A revised CUF_{en} was calculated by performing a more refined analysis and crediting 80-year projected design cycles for plant heatup, plant loading and reactor trips.

CUF_{en} Final = 0.2**50**~~69~~ Reference 4.3.6.23

CRDM Lower Joint – CUF_{en} Screening = [ ]

A revised CUF_{en} was calculated by performing a more refined analysis and crediting 80-year projected design cycles **as presented in Reference 4.3.6.26.** ~~for plant heatup, 10% step load increases, 50% step load decreases, loss of load, loss of AC power, and reactor trips (Unit 4 only).~~

CUF_{en} Final = 0.**59**~~749~~ Reference 4.3.6.26

Steam Generator Divider Plate – CUF_{en} Screening = [ ]

A revised CUF_{en} was calculated by crediting 80-year projected design cycles for plant heatup and cooldown, loading and unloading and 10% step load increases and decreases.

CUF_{en} Final = 0.881 Reference 4.3.6.20

Steam Generator Tubes – CUF_{en} Screening = [ ]

A revised CUF_{en} was calculated by crediting 80-year projected design cycles for plant heatup and cooldown, loading and unloading and 10% step load increases and decreases.

CUF_{en} Final = 0.903 Reference 4.3.6.20

Pressurizer Spray Nozzle – CUF_{en} Screening = [ ]

A revised CUFen was calculated by performing a finite element fatigue calculation using the methodology of Subarticle NB-3200 of Section III of the ASME Code and projected design cycles for plant heatup, ~~and~~ cooldown**, and inadvertent auxiliary spray.**

CUF_{en} Final = 0.**49**~~529~~ Reference 4.3.6.29

Pressurizer Upper Head – CUF_{en} Screening = [ ]

A revised CUF_{en} was calculated by crediting 80-year projected design cycles for plant loading~~,~~ **and** unloading~~, and boron concentration equalization transients~~.

CUF_{en} Final = 0.974 Reference 4.3.6.19

Heater Well – CUF_{en} Screening = [ ]

A revised CUF_{en} was calculated by performing a finite element fatigue calculation using the methodology of Subarticle NB-3200 of Section III of the ASME Code and projected design cycles for plant heatup and cooldown.

CUF_{en} Final = 0.093 Reference 4.3.6.28

Revise references for SLRA Section 4.3.6 as follows:

4.3.6.8 Structural Integrity Associates Engineering Report No. 1700109.401P, Revision **8**~~5~~, "Evaluation of Environmentally-Assisted Fatigue for Turkey Point Units 3 and 4 for Subsequent License Renewal", **October 26, 2018**~~April 2018~~ (Enclosure 5, Attachment 5).

4.3.6.11 NUREG/CR-6909 (ANL-06/08), **Draft** Revision 1, Effect of LWR Coolant Environments on the Fatigue Life of Reactor Materials, March 2014.

4.3.6.19 Westinghouse LTR-SDA-II-17-13-P/NP, Revision **4**~~2~~, Environmentally Assisted Fatigue Evaluation of the Turkey Point Unit 3 and Unit 4 Pressurizer Upper Head and Shell and Reactor Vessel Core Support Blocks, **September 14, 2018**~~November 30, 2017~~ (Enclosure 5, Attachment 7).

4.3.6.20 Westinghouse LTR-CECO-~~II~~-17-025-P/NP, Revision **3**~~1~~, Environmentally Assisted Fatigue Evaluation of the Turkey Point Unit 3 and Unit 4 Replacement Steam Generators, **September 14, 2018**~~November 30, 2017~~ (Enclosure 5, Attachment 7).

4.3.6.21 **Framatome**~~AREVA~~ Calculation No. 32-9279174, Revision 00**2**~~1~~, Turkey Point -3 & 4 CRDM Nozzle to Adapter Weld Connection EAF Evaluation, **September 7, 2018**~~December 14, 2017~~ (Enclosure 5, Attachment 8).

4.3.6.22 **Framatome**~~AREVA~~ Calculation No. 32-9279212, Revision 00**2**~~1~~, Turkey Point 3 & 4 Replacement RVCH CRDM Nozzle EAF Analysis, **September 7, 2018**~~December 12, 2017~~ (Enclosure 5, Attachment 8).

4.3.6.23 **Framatome**~~AREVA~~ Calculation No. 32-9279367, Revision 00**2**~~1~~, TP CRDM Latch Housing Environmentally Assisted Fatigue, **September 7, 2018**~~December 15, 2017~~ (Enclosure 5, Attachment 8).

4.3.6.24 **Framatome**~~AREVA~~ Calculation No. 32-9279362, Revision 00**2**~~1~~, TP Vent Nozzle Environmentally Assisted Fatigue, **September 7, 2018**~~December 14, 2017~~ (Enclosure 5, Attachment 8).

4.3.6.25 **Framatome**~~AREVA~~ Calculation No. 32-9279161, Revision 00**2**~~1~~, Turkey Point SLR EAF Analysis for Reactor Vessel Flange, **September 7, 2018**~~December 14, 2017~~ (Enclosure 5, Attachment 8).

4.3.6.26 **Framatome**~~AREVA~~ Calculation No. 32-9280202, Revision 00**3**~~1~~, TP CRDM Lower Joint Environmentally Assisted Fatigue, **October 12, 2018**~~December 15, 2017~~ (Enclosure 5, Attachment 8)

4.3.6.28 Pressurizer Lower Head Structural Integrity Associates EAF Calculations 1700804.316P Revision 0 (Enclosure 5, Attachment 6), 1700804.317 Revision 0 and 1700804.318 Revision 2~~0~~ (Enclosure 4, Attachment 6).

4.3.6.29 Pressurizer Spray Nozzle Structural Integrity Associates EAF Calculations 1700804.315P Revision 3~~2~~, 1700804.314P Revision 1, 1700804.313P Revision 2 (Enclosure 5, Attachment 6).

4.3.6.32 NUREG/CR-6909, Revision 1, Effect of LWR Water Environments on the Fatigue Life of Reactor Materials Final Report, May 2018.

4.3.6.33 Regulatory Guide 1.207, Revision 1, Guidelines for Evaluating the Effects of Light-Water Reactor Coolant Environments in Fatigue Analyses of Metal Components, June 2018. Regulatory Guide 1.207, Revision 1

Associated Enclosures:

Enclosure 1 (SLRA Enclosure 2 Attachment 2). Westinghouse Letter CAW-18-4804 dated September 18, 2018, Application for Withholding Proprietary Information from Public Disclosure

Enclosure 2 (SLRA Enclosure 4 Attachment 7). Westinghouse LTR-CECO-17-025-NP (Non-Proprietary), Revision 3, Environmentally Assisted Fatigue Evaluation of the Turkey Point Unit 3 and Unit 4 Replacement Steam Generators, September 14, 2018

Enclosure 3 (SLRA Enclosure 2 Attachment 7). Framatome Application for Withholding Proprietary Information from Public Disclosure, dated October 12, 2018

Enclosure 4 (SLRA Enclosure 4 Attachment 8). Framatome Calculation No. 32-9280707, Revision 001, Turkey Point -3 & 4 CRDM Nozzle to Adapter Weld Connection EAF Evaluation, October 5, 2018 (Non-Proprietary)

Enclosure 5 (SLRA Enclosure 4 Attachment 8). Framatome Calculation No. 32-9280708, Revision 001, Turkey Point 3 & 4 Replacement RVCH CRDM Nozzle EAF Analysis, October 5, 2018 (Non-Proprietary)

Enclosure 6 (SLRA Enclosure 4 Attachment 8). Framatome Calculation No. 32-92800709, Revision 001, TP CRDM Latch Housing Environmentally Assisted Fatigue, October 4, 2018 (Non-Proprietary)

Enclosure 7 (SLRA Enclosure 4 Attachment 8). Framatome Calculation No. 32-9280710, Revision 001, TP Vent Nozzle Environmentally Assisted Fatigue, October 4, 2018 (Non-Proprietary)

Enclosure 8 (SLRA Enclosure 4 Attachment 8). Framatome Calculation No. 32-9280711, Revision 001, Turkey Point SLR EAF Analysis for Reactor Vessel Flange, October 5, 2018 (Non-Proprietary)

Enclosure 9 (SLRA Enclosure 2 Attachment 9). Westinghouse Letter CAW-17-4683 dated December 13, 2017, Application for Withholding Data Package for Pressurizer Spray and Surge Nozzle Analysis

Enclosure 10 (SLRA Enclosure 4 Attachment 6). Structural Integrity Associates EAF Calculation 1700804.315P Revision 3 - REDACTED, Pressurizer Spray Nozzle Fatigue Analysis, dated August 22, 2018

Enclosure 11 (SLRA Enclosure 4 Attachment 6). Structural Integrity Associates Calculation 1700804.318 Revision 2, Pressurizer Lower Head Loads, Fatigue and EAF Analysis, dated October 12, 2018

Enclosure 12 (SLRA Enclosure 4 Attachment 5). Structural Integrity Associates Engineering Report No. 1700109.401P, Revision 8 - REDACTED, Evaluation of Environmentally-Assisted Fatigue for Turkey Point Units 3 and 4 for Subsequent License Renewal, October 26, 2018

(Refer to) Attachment 14 Enclosure of FPL Letter L-2018-174 to NRC dated October 24, 2018, Turkey Point Units 3 and 4 Subsequent License Renewal Application, Safety Review Requests for Additional Information (RAI) Set 4 Responses (SLRA Enclosure 4 Attachment 7). Westinghouse Letter LTR-SDA-II-17-13-NP (Non-Proprietary), Revision 4, Environmentally Assisted Fatigue Evaluation of the Turkey Point Unit 3 and Unit 4 Pressurizer Upper Head and Shell and Reactor Vessel Core Support Blocks, September 14, 2018 (ADAMS Accession No. ML18299A114)

(Refer to) Attachment 16 Enclosure 3 of FPL Letter L-2018-174 to NRC dated October 24, 2018, Turkey Point Units 3 and 4 Subsequent License Renewal Application, Safety Review Requests for Additional Information (RAI) Set 4 Responses (SLRA Enclosure 4 Attachment 8). Framatome Calculation No. 32-9280712, Rev. 002, TP CRDM Lower Joint Environmentally Assisted Fatigue, October 12, 2018 (Non-Proprietary) (ADAMS Accession No. ML18299A114)