



October 29, 2015

L-2015-272

10 CFR 54

Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555-0001

St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
License Renewal Commitment
Submittal of Pressurizer Surge Line Welds Inspection Program

Reference:

1. FPL Letter L-2015-187 License Renewal Commitment Submittal of Pressurizer Surge Line Welds Inspection Program, dated September 8, 2015.

Reference 1 was submitted previously to address the St. Lucie Nuclear Plant license renewal commitment for environmentally assisted fatigue for the pressurizer surge line welds during the period of extended operation. At the request of our consultant Structural Integrity Associates (SIA), Reference 1 is being replaced in its entirety by this submittal, since the SIA Report contains some proprietary information.

St. Lucie Nuclear Plant has a license renewal commitment to address the concern of environmentally assisted fatigue for the pressurizer surge line welds during the period of extended operation using one or more of the following approaches:

1. Further refinement of the fatigue analysis to lower the cumulative usage factor (CUF) to below 1.0, or
2. Repair of the affected locations, or
3. Replacement of the affected locations, or
4. Manage the effects of fatigue by an NRC approved inspection program.

The commitment was documented in item 20 of Appendix D to the NRC Safety Evaluation Report Related to the License Renewal of St. Lucie Nuclear Plant, NUREG 1779, dated September 2003.

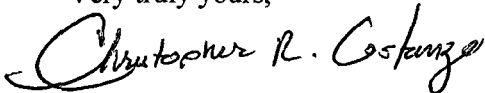
The purpose of this letter is to notify the NRC Staff that FPL has selected the approach to manage the effects of environmentally assisted fatigue of the pressurizer surge line welds for St. Lucie Units 1 and 2 by inspection, i.e., option 4 above. Accordingly, prior to entering the period of extended operation, FPL submits herein in Attachment 1 details of the inspection program for NRC Staff review and approval. Attachments 2 and 3 provide affidavits from AREVA and Structural Integrity Associates, respectively, for withholding the proprietary information contained in Attachment 4, which is the flaw tolerance evaluation for the St. Lucie surge line welds, from the public. Attachment 5 provides the non-proprietary version of the flaw tolerance

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evaluation. Attachment 6 provides the proposed revision to the St. Lucie UFSARs, Section 18.3.2.3.

Should you have any questions, please contact Mr. Eric Katzman, Licensing Manager, at 772-467-7734.

Very truly yours,



Christopher Costanzo
Site Vice President
St. Lucie Plant

Attachments:

1. Description of the Proposed Aging Management Program for Pressurizer Surge Line Inspection Program
2. AREVA affidavit for withholding proprietary information from the public, dated October 12, 2015.
3. Structural Integrity Associates (SIA) affidavit for withholding proprietary information from the public, dated October 13, 2015.
4. SIA proprietary Report No. 1301103.401, Rev. 0, "Flaw Tolerance Evaluation of St. Lucie Surge Line Welds Using ASME Code Section XI, Appendix L," dated May 2015.
5. SIA non-proprietary Report No. 1301103.401, Rev. 0, "Flaw Tolerance Evaluation of St. Lucie Surge Line Welds Using ASME Code Section XI, Appendix L," dated May 2015.
6. Proposed revision to the St. Lucie UFSARs, Section 18.3.2.3.

cc: USNRC Regional Administrator, Region II
USNRC Project Manager, St. Lucie Nuclear Plant
USNRC Senior Resident Inspector, St. Lucie Nuclear Plant

FPL Letter L-2015-272

ATTACHMENT 1

Florida Power and Light

St. Lucie Nuclear Plant Units 1 and 2

**Description of the Proposed Aging Management Program
for Pressurizer Surge Line Inspection Program**

1.0 Background

Florida Power & Light Company has a license renewal commitment for St. Lucie Nuclear Plant Units 1 and 2, to address the effects of environmentally assisted fatigue for the pressurizer surge line welds during the period of extended operation (PEO) using one or more of the following approaches:

1. Further refinement of the fatigue analysis to lower the cumulative usage factor (CUF) to below 1.0, or
2. Repair of the affected locations, or
3. Replacement of the affected locations, or
4. Manage the effects of fatigue by an NRC approved inspection program.

At St. Lucie Nuclear Plant Units 1 and 2, there are twenty one pressurizer surge line weld locations subject to the effects of environmentally assisted fatigue (i.e., ten welds in Unit 1, and eleven welds in Unit 2). The critical weld location of concern is at the elbow that is directly attached to the hot leg surge nozzle where the calculated CUF was determined to exceed the ASME Code allowable usage factor of 1.0, when environmentally assisted fatigue (EAF) is considered during the period of extended operation. For sixty years of projected cycles, the maximum EAF usage is 13.554 for Unit 1 and 10.039 for Unit 2 at the elbow that is directly attached to the hot leg surge nozzle.

By letter L-2003-070, dated March 28, 2003, (Reference 10.1), FPL committed to provide the NRC with inspection program details prior to entering the PEO, should FPL select option 4 (i.e., inspection) to manage environmentally assisted fatigue during the period of extended operation.

FPL has selected to age manage the effects of the environmentally assisted fatigue on the pressurizer surge line welds by a combination of an inspection program and flaw tolerance evaluation. Accordingly, Sections 2, 3 and 4 provide the description of the proposed Aging Management Program for the St. Lucie Nuclear Plant Units 1 and 2 Pressurizer Surge Line Welds Inspection Program, the Aging Management Program Attributes, and the Implementation of the Inspection Program, respectively, for NRC Staff review and approval.

2.0 DESCRIPTION OF AGING MANAGEMENT PROGRAM

ASME SECTION XI, APPENDIX L ANALYSIS

The proposed Aging Management Program (AMP) for Flaw Tolerance assessment is based on the approach documented in the ASME Boiler and Pressure Vessel Code, Section XI- Rules for In-service Inspection of Nuclear Power Plant Components, Non-Mandatory Appendix L, 'Operating Plant Fatigue Assessment'.

A flaw tolerance evaluation was performed specifically for St. Lucie Nuclear Plant Units 1 and 2, in order to assess the operability of the surge line by using ASME Section XI Appendix L methodology and to determine the successive inspection schedule for the surge line welds with a postulated surface flaw. Two bounding locations were evaluated in detail.

The two bounding locations of concern are the hot leg surge nozzle-to-pipe weld and the adjacent elbow base material, which is a Cast Austenitic Stainless Steel (CASS) material. Based on a comparison of geometry, material properties, and applicable loads, the results of the detailed evaluation of the two bounding locations are also applicable to all other in-between pipe and weld locations on the surge line.

The results of the crack growth for the hot leg surge nozzle elbow and the weld are presented in Table 1. The technical analysis of the postulated flaw tolerance evaluation is provided in Reference 10.2.

Table 1

St. Lucie Nuclear Plant Units 1 and 2.

Table 1: Circumferential Crack Growth Results

Location	Stress Path	Crack Growth Results				Allowable Operating Period months
		Final Flaw Depth		Final Half Flaw Length		
		[a/t]	in	in	(θ/π)	
Base Metal	1	0.7481	0.9815	2.9445	0.163	432
	2	0.7241	0.9500	2.8500	0.159	624
	3	0.7327	0.9613	2.8839	0.160	384
	4	0.7394	0.9701	2.9103	0.162	252
Weld Metal	9	0.2808	0.3684	1.1052	0.062	720
	10	0.2608	0.3422	1.0266	0.057	720
	11	0.3285	0.4311	1.2933	0.072	720
	12	0.2807	0.3682	1.1046	0.061	720

Notes for Table 1

1. The postulated initial flaw depth is 20% of the weld thickness (i.e., 0.201 inches) and the initial flaw length is 6 times its depth (i.e., 1.206 inches) per Appendix L guidelines.
2. A constant aspect ratio (a/l) of 1/6 is used in the crack growth analysis.
3. Flaw length based on Inner Diameter (ID)
4. The axial stresses are bounding hence only circumferential flaws were analyzed.
5. Per Appendix L, if the allowable operating period is equal or greater than 10 years, the successive inspection schedule shall be equal to the examination interval listed in the St. Lucie ASME Section XI schedule of In-service Inspection (ISI) program for the component.

As per the guidelines of Appendix L, Table L-3420-1, since the allowable operating periods listed in Table 1 above are greater than 10 years, the surge line welds in both units listed in Tables 2 and 3 shall be examined at the end of each inspection interval listed in the schedule of inspection programs in IWB-2410.

3.0 AGING MANAGEMENT PROGRAM ATTRIBUTES

The key attributes of the St Lucie Units 1 and 2 Pressurizer Surge Line Weld Inspection Program that are used to describe the aging management program, are discussed below:

1. Scope of the Program

All pressurizer surge line welds listed in Tables 2 and 3 will be examined in accordance with ASME Section XI, IWB for Class 1 welds. The aging effect managed with these inspections is cracking due to environmentally assisted fatigue. During PEO, examinations of the Surge Line piping welds will be performed at the end of each of the 5th and 6th ISI intervals listed in the schedule of inspection programs in accordance with IWB-2410, as noted in Tables 2 and 3, in accordance with the St. Lucie ISI Program under Augmented Programs.

Examination results are evaluated by qualified individuals in accordance with ASME Code Section XI acceptance criteria. Components with indications that do not exceed the acceptance criteria are considered acceptable for continued service.

2. Preventive Actions

There are no specific preventive actions under this program to prevent the effects of aging.

3. Parameter(s) Monitored or Inspected

In-service examinations for the surge line welds will be a volumetric examination as indicated in Tables 2 and 3, St. Lucie Units 1 and 2, Pressurizer Surge Line Welds Subject to Environmental Assisted Fatigue Inspection Program.

4. Detection of Aging Effects

The degradation of surge line welds is determined by volumetric examination in accordance with the requirements of St. Lucie ISI Program. The frequency and scope of examination are sufficient to ensure that the aging effects are detected before the integrity of the surge line welds would be compromised.

5. Monitoring and Trending

The frequency and scope of the examinations are sufficient to ensure that the environmentally assisted fatigue aging effect is detected before the intended function of these welds would be compromised. Examinations will be performed in accordance with the inspection intervals based on the results of the postulated flaw evaluation performed in accordance to the ASME Code Section XI, Appendix L methodology.

If flaws are identified in the pressurizer surge line welds, they will be evaluated by Engineering to assess the effect of environmentally assisted fatigue (EAF), and to determine its impact on the EAF analysis. Records of the examination procedures, results of activities, examination datasheets, and corrective actions taken or recommended will be maintained in accordance with the requirements of St. Lucie Units 1 and 2, ISI Program.

6. Acceptance Criteria

Acceptance standards for the in-service examinations are identified in Subsection IWB for Class 1 components. Table IWB-2500-1 identifies references to acceptance standards listed in IWB-3500. Flaws found in the surge line welds that are revealed by the volumetric examination require additional evaluation per the requirements of ASME Section XI, Appendix L.

Flaws that exceed the acceptance criteria will be entered into the St. Lucie Corrective Action Program. Acceptance for continued service of surge line welds with flaws that do not meet the acceptance standards of ASME Section XI, IWB-3500, will be corrected either by repair, replacement or analytical evaluation.

Repairs or replacements will be performed in accordance with ASME Section XI, Subsection IWA-4000, as described in administrative procedure QI-10-PR/PSL-8, Control of Repairs and Replacements.

7. Corrective Actions

Action Requests (ARs) are generated in accordance with the St. Lucie Corrective Action Program for flaws that exceed the acceptance criteria. Items with examination results that do not meet the acceptance criteria are subject to acceptance by analytical evaluation per subsection IWB-3600 and/or acceptance by repair or replacement in accordance with Subsection IWA-4000.

8. Confirmation Process

When degradation is identified in the pressurizer surge line welds, an engineering evaluation is performed to determine if the weld is acceptable for continued service or if repair or replacement is required. The engineering evaluation includes probable cause, the extent of degradation, the nature and frequency of additional examinations, and, whether repair or replacement is required.

Repair, replacement are performed in accordance with the requirements of ASME Section XI, Subsection IWA-4000, and as implemented by the St. Lucie Units 1 and 2 administrative procedure QI-10-PR/PSL-8, Control of Repairs and Replacements.

9. Administrative Controls

St. Lucie ISI Program will document the EAF inspection requirements for the St. Lucie Units 1 and 2 pressurizer surge line welds under the ISI Program section for Augmented Inspection Programs. In addition, a summary description of this aging management program will be included in the Updated Final Safety Analysis Report as a new Aging Management Program. Site QA procedures, review and approval processes, and administrative controls are implemented in accordance with the requirements of Appendix B of 10 CFR Part 50 and will continue to be adequate for the period of extended operation.

Procedures utilized include:

- (1) PI-AA-104-1000, "Corrective Action".
- (2) AP 0005760, "St. Lucie Plant Implementation Guidelines of the ASME Section XI Repair/Replacement Program".

10. Operating Experience

A sample of the surge line welds have been examined ultrasonically in both units during the first three in-service inspection intervals in accordance with the requirements of ASME Section XI, Subsection IWB. The welds in Unit 1 PZR Surge Line have been examined in ISI 4th Interval with exception of weld no. RC-108-FW-2001. This weld will be examined during Unit 1 refueling outage SL1-27 (2016). This is a new weld installed in 2005 during the pressurizer replacement and in service for approximately 10 years. To date, no reportable Flaws have been found in the subject pressurizer surge line welds. The programmatic operating experience (OE) activities described in relevant station procedures ensure the adequate evaluation of operating experience on an ongoing basis to address age-related degradation and aging management for the St. Lucie Units 1 and 2 Pressurizer Surge Line Weld Inspection Program.

The proposed aging management program to examine pressurizer surge line welds listed in Tables 2 and 3, at the end of each of the 5th and 6th ISI intervals listed in the schedule of inspection programs in accordance with IWB-2410, provide reasonable assurance that potential environmental effects of fatigue will be managed such that all the pressurizer surge line welds within the scope of license renewal will continue to perform their intended functions for the extended period of operation.

Corrective actions, confirmation process and administrative controls for license renewal are in accordance with the site controlled quality assurance program pursuant to 10CFR Part 50, Appendix B, which covers all SSCs subject to an aging management review.

4.0 Implementation of Pressurizer Surge Line Inspection Program.

Upon approval of the proposed inspection program for the pressurizer surge line welds, related aging management program documents and the associated Updated Final Safety Analysis Report (UFSAR) sections will be updated accordingly.

5.0 REFERENCES

- 10.1 FPL letter to the NRC, Letter No. FPL-L-2003-070, "Responses and Revised License Renewal Application Appendix A" dated March 28, 2003.
- 10.2 Structural Integrity Associates, Inc. Report No. 1301103.401, Rev 0, "Flaw Tolerance Evaluation of St. Lucie Surge Line Welds Using ASME Code Section XI, Appendix L" dated May 2015.
- 10.3 St. Lucie Nuclear Plant Units 1 and 2, Updated Final Safety Analysis Reports (UFSAR), Amendments 26 and 22, respectively.

TABLE 2
St. Lucie Nuclear Station Unit 1
Pressurizer Surge Line Welds - Inspection Summary

Unit	No.	Weld Number	Last Examination Performed & Results (Volumetric OR Surface)	Allowable Operating Period per ASME App. L Analysis (Note 1)	Proposed AMP Inspections During PEO Type/Frequency
Unit 1 4th ISI INTERVAL (2008 to 2018)	1	RC-6-509 12 in. branch to Safe End.	Overlay (FSWOL) in 2008. UT in 2010, Satisfactory.	Greater than 10 Years	Volumetric Once in 10 Years
	2	RC-108-FW-3 Safe-End to Elbow	UT + FSWOL in 2008 UT in 2010, Satisfactory.	Greater than 10 Years	Volumetric Once in 10 Years
	3	RC-1-505-A Elbow to Pipe	UT in 2015 Satisfactory.	Greater than 10 Years	Volumetric Once in 10 Years
	4	RC-1-505-B Pipe to Pipe	UT in 2015 Satisfactory..	Greater than 10 Years	Volumetric Once in 10 Years
	5	RC-1-505-C Pipe to Elbow	UT in 2015 Satisfactory..	Greater than 10 Years	Volumetric Once in 10 Years
	6	RC-108-FW-2 Elbow to Pipe	UT in 2015 Satisfactory..	Greater than 10 Years	Volumetric Once in 10 Years
	7	RC-2-505-C Pipe to Pipe	UT in 2015 Satisfactory.	Greater than 10 Years	Volumetric Once in 10 Years
	8	RC-108-FW-2000 Pipe to Elbow	New Elbow in 2005. UT in 2010 and in 2015. Satisfactory.	Greater than 10 Years	Volumetric Once in 10 Years
	9	RC-108-FW-2001 Elbow to Safe-End	New weld, installed in 2005 with new PZR. UT Scheduled for 2016	Greater than 10 Years	Volumetric Once in 10 Years
	10	S/C004 Surge line Nozzle to Safe-End Weld	Installed New PZR & Nozzle in 2005. UT in 2010, Satisfactory.	Greater than 10 Years	Volumetric Once in 10 Years

Note 1: The inspection frequency as determined by ASME Code Section XI, Appendix L analysis is more than 10 years. In accordance to the requirements of Appendix L Table L-3420-1, the surge line welds will be examined at the end of each of the 5th and 6th ISI intervals listed in the schedule of inspection programs in accordance with IWB-2410.

TABLE 3
St. Lucie Nuclear Station Unit 2
Pressurizer Surge Line Welds - Inspection Summary
The Welds noted below will be inspected during SL2-23 Outage (2017).

Unit	No.	Weld Number	Last Examination Performed & Results (Volumetric OR Surface)	Allowable Operating Period per ASME App. L Analysis (Note 1)	Proposed AMP Inspections Type/Frequency
4th ISI INTERVAL (2014 to 2024)	1	RC-301-771 Nozzle to Safe End	UT + FSWOL in 2007. UT in 2011. Satisfactory.	Greater than 10 Years	Volumetric Once in 10 Years
	2	RC-108-FW-3 Safe End to Elbow	UT + FSWOL in 2007. UT in 2011, Satisfactory.	Greater than 10 Years	Volumetric Once in 10 Years
	3	RC-106-751 Elbow to Pipe	No Exam in 3rd ISI Interval	Greater than 10 Years	Volumetric Once in 10 Years
	4	RC-113-751 Pipe to Pipe	No Exam in 3rd ISI Interval	Greater than 10 Years	Volumetric Once in 10 Years
	5	RC-107-751 Pipe to Elbow	No Exam in 3rd ISI Interval	Greater than 10 Years	Volumetric Once in 10 Years
	6	RC-108-FW-2 Elbow to Pipe	No Exam in 3rd ISI Interval	Greater than 10 Years	Volumetric Once in 10 Years
	7	RC-112-751 Pipe to Pipe	No Exam in 3rd ISI Interval	Greater than 10 Years	Volumetric Once in 10 Years
	8	RC-101-751 Pipe to Elbow	UT in 2003, Satisfactory.	Greater than 10 Years	Volumetric Once in 10 Years
	9	RC-102-751 Elbow to Pipe	UT in 2003, Satisfactory.	Greater than 10 Years	Volumetric Once in 10 Years
	10	RC-108-FW-1 Pipe to Safe End	UT + FSWOL in 2007. Performed UT in 2011, Satisfactory.	Greater than 10 Years	Volumetric Once in 10 Years
	11	RC-514-671 Safe End to Nozzle	UT + FSWOL in 2007. UT in 2011, Satisfactory.	Greater than 10 Years	Volumetric Once in 10 Years

Note 1: The inspection frequency as determined by ASME Code Section XI, Appendix L analysis is more than 10 years. In accordance to the requirements of Appendix L Table L-3420-1, the surge line welds will be examined at the end of each of the 5th and 6th ISI intervals listed in the schedule of inspection programs in accordance with IWB-2410.

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ATTACHMENT 2

**AREVA affidavit for withholding proprietary information from the public,
dated October 12, 2015**

A F F I D A V I T

COMMONWEALTH OF VIRGINIA)
) ss.
 CITY OF LYNCHBURG)

1. My name is Gayle Elliott. I am Manager, Product Licensing, for AREVA Inc. (AREVA) and as such I am authorized to execute this Affidavit.

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

3. I am familiar with the AREVA information contained in a document prepared by Structural Integrity Associates, Inc., Report No. 1301103.401, Revision 0, entitled, "Flaw Tolerance Evaluation of St. Lucie Surge Line Welds Using ASME Code Section XI, Appendix L," dated May 2015 and referred to herein as "Document." Information contained in this Document has been classified by AREVA as proprietary in accordance with the policies established by AREVA Inc. for the control and protection of proprietary and confidential information.

4. This Document contains information of a proprietary and confidential nature and is of the type customarily held in confidence by AREVA 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 AREVA to determine whether information should be classified as proprietary:

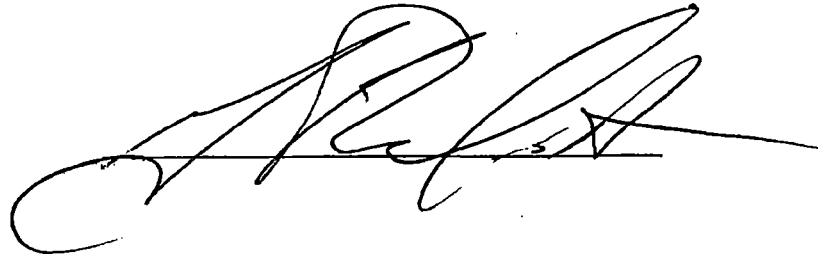
- (a) The information reveals details of AREVA's research and development plans and programs or their results.
- (b) Use of the information by a competitor would permit the competitor to significantly reduce its expenditures, in time or resources, to design, produce, or market a similar product or service.
- (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 AREVA.
- (d) The information reveals certain distinguishing aspects of a process, methodology, or component, the exclusive use of which provides a competitive advantage for AREVA in product optimization or marketability.
- (e) The information is vital to a competitive advantage held by AREVA, would be helpful to competitors to AREVA, and would likely cause substantial harm to the competitive position of AREVA.

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

7. In accordance with AREVA'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 AREVA only as required and under suitable agreement providing for nondisclosure and limited use of the information.

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

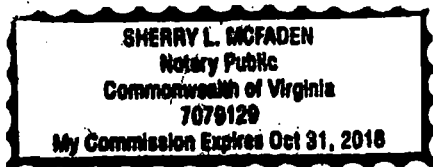
9. The foregoing statements are true and correct to the best of my knowledge, information, and belief.



SUBSCRIBED before me this 17th
day of October, 2015.



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



FPL Letter L-2015-272

ATTACHMENT 3

Structural Integrity Associates (SIA) affidavit for withholding proprietary information from the public, dated October 13, 2015



October 13, 2015

AFFIDAVIT

I, Christine King, state as follows:

- (1) I am a Vice President of Structural Integrity Associates, Inc. (SI) and have been delegated the function of reviewing the information described in paragraph (2) which is sought to be withheld, and have been authorized to apply for its withholding.
- (2) The information sought to be withheld is contained in SI Report 1301103.401, Rev. 0, "Flaw Tolerance Evaluation of St. Lucie Surge Line Welds Using ASME Code Section XI, Appendix L." This report is to be treated as SI proprietary information, because it contains significant information that is deemed proprietary and confidential to AREVA Inc. (AREVA). AREVA design input information was provided to SI in strictest confidence so that we could generate the aforementioned calculation on behalf of SI's client, Florida Power & Light (FPL).

Paragraph 3 of this Affidavit provides the basis for the proprietary determination.

- (3) SI is making this application for withholding of proprietary information on the basis that such information was provided to SI under the protection of a Proprietary/Confidentiality and Nondisclosure Agreement between SI and AREVA. In a separate Affidavit requesting withholding of such proprietary information prepared by AREVA, AREVA relies upon the exemption of disclosure set forth in NRC Regulation 10 CFR 2.390(a)(4) pertaining to "trade secrets and commercial or financial information obtained from a person and privileged or confidential" (Exemption 4). As delineated in AREVA's Affidavit, the material for which exemption from disclosure is herein sought is considered proprietary for the following reasons (taken directly from Items 6(c) through 6(e) of AREVA's Affidavit):
 - a) The information includes test data or analytical techniques concerning a process, methodology, or component, the application of which results in a competitive advantage for AREVA.
 - b) The information reveals certain distinguishing aspects of a process, methodology, or component, the exclusive use of which provides a competitive advantage for AREVA in product optimization or marketability.

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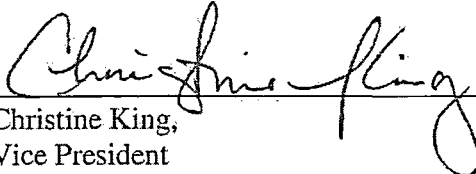
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905-829-9817

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

Public disclosure of the information sought to be withheld is likely to cause substantial harm to AREVA with which SI has established a Proprietary/Confidentiality and Nondisclosure Agreement.

I declare under penalty of perjury that the above information and request are true, correct, and complete to the best of my knowledge, information, and belief.

Executed at San Jose, California on this 13th day of October, 2015.


 Christine King,
 Vice President
 Nuclear Plant Services

State of California
 County of Santa Clara

Subscribed and sworn to (or affirmed) before me
 on this 13th day of October, 2015,
Date Month Year
 by

(1) Christine King
Name of Signer

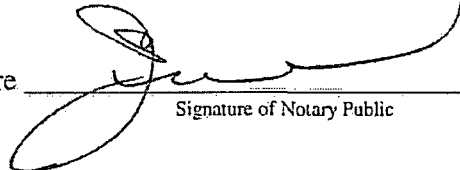
proved to me on the basis of satisfactory evidence
 to be the person who appeared before me (.)
 (and)

(2) _____
Name of Signer

proved to me on the basis of satisfactory evidence
 to be the person who appeared before me.)



Place Notary Seal and/or Stamp Above

Signature 
Signature of Notary Public

FPL Letter L-2015-272

ATTACHMENT 6

Proposed UFSAR Update to Chapter 18, Section 18.3.2.3 on the Management Program (AMP) for Pressurizer Surge Line Welds

Proposed UFSAR Update to Chapter 18, Section 18.3.2.3 on the Management Program (AMP) for Pressurizer Surge Line Welds

18.3.2.3 Environmentally Assisted Fatigue

Generic Safety Issue (GSI) 190 was initiated by the NRC staff because of concerns about the potential effects of reactor water environments on RCS component fatigue life during the period of extended operation. The FPL approach to address reactor water environmental effects accomplishes two objectives. First, the TLAA on fatigue design has been resolved by confirming that the original transient design limits remain valid for the 60-year operating period. Confirmation by fatigue monitoring will ensure that these transient design limits are not exceeded. Second, reactor water environmental effects on fatigue life are examined using the most recent data from laboratory simulation of the reactor coolant environment.

As a part of the industry effort to address environmental effects for operating nuclear power plants during the current 40-year licensing term, Idaho National Engineering Laboratories (INEL) evaluated, in NUREG/CR-6260, "Application of NUREG/CR-5999 Interim Fatigue Curves to Selected Nuclear Power Plant Components," March 1995, fatigue-sensitive component locations at plants designed by all four U. S. nuclear steam supply system (NSSS) vendors. The pressurized water reactor (PWR) calculations included in NUREG/CR-6260, especially for the "Older Vintage Combustion Engineering Plant," match St. Lucie relatively closely with respect to design codes used, as well as the analytical approach and techniques used. In addition, the design cycles considered in the evaluation match or bound the St. Lucie Unit 1 design.

Environmental fatigue calculations have been performed for St. Lucie Unit 1 for those component locations included in NUREG/CR-6260 using the appropriate methods contained in NUREG/CR-6583, "Effects of LWR Coolant Environments on Fatigue Design Curves of Carbon and Low-Alloy Steels," March 1998, or NUREG/CR-5704, "Effects of LWR Coolant Environments on Fatigue Design Curves of Austenitic Stainless Steels," April 1999, as appropriate. Based on these results, all component locations were determined to be acceptable for the period of extended operation, with the exception of the pressurizer surge line (specifically the surge line elbow below the pressurizer).

An aging management program (AMP) has been submitted to the NRC for their approval via FPL letter L-2015-187. The program will not be implemented until approval of the program by the NRC has been obtained.

All pressurizer surge line welds listed in scope of the aging management have been examined during the Fourth In-Service Inspection Interval prior to entering the extended period of operation with the exception of weld number RC-108-FW-2001. This weld is scheduled to be inspected in the period of extended operation (PEO) portion of the Fourth ISI interval during Unit 1 refueling outage SL1-27 (Fall 2016). This is a new weld installed in 2005 during the pressurizer replacement and in service for approximately 10 years. The results of these inspections were utilized to assess fatigue of the surge line.

The Aging Management Program (AMP) of the surge line will be accomplished by a combination of flaw tolerance analysis as per ASME Code, Appendix L and In-Service Inspection.

The aging effect managed with these inspections is cracking due to environmentally assisted fatigue. The technical justification and inspection frequency are supported by a flaw tolerance analysis based on the methodology noted in ASME Section XI, Non-mandatory Appendix L, "Operating Plant Fatigue Assessment". Based on postulated flaw tolerance analysis, and per the guidelines of ASME Code, Section XI, Appendix L, Table L-3420-1, the successive inspection interval is determined to be ten years.

All pressurizer surge line welds listed in scope of the aging management program will be examined in accordance with ASME Section XI, IVB for Class 1 welds. In each 10-year ISI interval during the period of extended operation, all surge line welds will be inspected in accordance with the St. Lucie ISI Program under augmented programs.