Florida Power & Light Company, 6501 S. Ocean Drive, Jensen Beach, FL 34957

FPL

This letter forwards proprietary information in accordance with 10 CFR 2.390. The balance of this letter may be considered non-proprietary upon removal of Attachment 1

October 21, 2011

L-2011-435
10 CFR 50.90
10 CFR 2.390

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

Re: St. Lucie Plant Unit 1
Docket No. 50-335
Renewed Facility Operating License No. DPR-67

Response to NRC Mechanical and Civil Branch Request for Additional Information Number 23; Regarding Extended Power Uprate License Amendment Request

References:

(1) R. L. Anderson (FPL) to U.S. Nuclear Regulatory Commission (L-2010-259), "License Amendment Request (LAR) for Extended Power Uprate," November 22, 2010, Accession No. ML103560419.

(2) Email from T. Orf (NRC) to C. Wasik (FPL), "St. Lucie 1 EPU draft Mechanical and Civil RAIs (EMCB)," July 27, 2011.

(3) R. L. Anderson (FPL) to U.S. Nuclear Regulatory Commission (L-2011-361), "Response to NRC Mechanical and Civil Branch Request for Additional Information Regarding Extended Power Uprate License Amendment Request," September 23, 2011, Accession No. ML11271A030.

By letter L-2010-259 dated November 22, 2010 [Reference 1], Florida Power & Light Company (FPL) requested to amend Renewed Facility Operating License No. DPR-67 and revise the St. Lucie Unit 1 Technical Specifications (TS). The proposed amendment will increase the unit's licensed core thermal power level from 2700 megawatts thermal (MWt) to 3020 MWt and revise the Renewed Facility Operating License and TS to support operation at this increased core thermal power level. This represents an approximate increase of 11.85% and is therefore considered an Extended Power Uprate (EPU).

By email from the NRC Project Manager dated July 27, 2011 [Reference 2], additional information related to mechanical and civil engineering topics was requested by the NRC

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staff in the Mechanical and Civil Engineering Branch (EMCB) to support their review of the EPU LAR. The request for additional information (RAI) consisted of forty-five (45) questions. By letter L-2011-361 dated September 23, 2011 [Reference 3], FPL provided a response to all of the forty-five questions with the exception of EMCB RAI-23. Reference 3 stated that FPL would provide a response to EMCB RAI-23 and updated information regarding the hot leg injection modification by October 28, 2011. Attachment 1 to this letter provides FPL's response to EMCB RAI-23. Updated information pertaining to the hot leg injection modification will be provided under separate cover by October 28, 2011, as stated in Reference 3.

Attachment 1 contains Babcock and Wilcox (B&W) proprietary information and Attachment 2 is the fully non-proprietary version of Attachment 1. Attachment 3 contains the B&W Proprietary Information Affidavit. The Affidavit, signed by B&W as the owner of the information, sets forth the basis for which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of § 2.390 of the Commission's regulations. Accordingly, it is respectfully requested that the information proprietary to B&W be withheld from public disclosure in accordance with 10 CFR 2.390.

In accordance with 10 CFR 50.91(b)(1), a copy of this letter is being forwarded to the designated State of Florida official.

This submittal does not alter the significant hazards consideration or environmental assessment previously submitted by FPL letter L-2010-259 [Reference 1].

This submittal contains no new commitments and no revisions to existing commitments.

Should you have any questions regarding this submittal, please contact Mr. Christopher Wasik, St. Lucie Extended Power Uprate LAR Project Manager, at 772-467-7138.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Executed on 21 - October - 2011

Very truly yours,

Richard L. Anderson
Site Vice President
St. Lucie Plant

Attachments (3)

cc: Mr. William Passetti, Florida Department of Health

babcock & wilcox canada ltd.
581 coronation boulevard cambridge, on n1r 5v3 canada
phone 519.621.2130 fax 519.621.2310 www.babcock.com

October 5, 2011

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
U.S.A.

APPLICATION FOR WITHHOLDING PROPRIETARY INFORMATION FROM PUBLIC DISCLOSURE

Subject: Florida Power & Light Letter L-2011-435 (Response to NRC Mechanical and Civil Branch Request for Additional Information Number 23; Regarding Extended Power Uprate License Amendment Request)

Dear Sir/Madam:

The proprietary information for which withholding is being requested in the above-referenced document is identified in the attached affidavit signed by the owner of the proprietary information, Babcock & Wilcox Canada Ltd. 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 and Light.

Correspondence with respect to the proprietary aspects of the application for withholding or the Babcock & Wilcox Affidavit should reference this letter, and should be addressed to the undersigned.

Yours truly,

BABCOCK & WILCOX CANADA LTD.

Jeffrey Millman,
Manager, Nuclear Engineering

Attach./

Cc: K. McHugh
J. Helmey
J. Albert

PROVINCE OF ONTARIO

REGIONAL MUNICIPALITY OF WATERLOO

AFFIDAVIT OF JEFFREY MILLMAN

I, Jeffrey Millman, of the Village of Ayr, in the Township of North Dumfries, Regional Municipality of Waterloo, in the Province of Ontario, being sworn, make oath and say as follows:

1. I am the Manager, Nuclear Engineering of Babcock & Wilcox Canada Ltd. ("B&W"), 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 rulemaking proceedings, and am authorized to apply for its withholding on behalf of B&W.

2. I am making this Affidavit in conformance with the provisions of 10CFR Section 2.390 of the Commission's regulations and in conjunction with the Babcock & Wilcox Canada Ltd. Application for Withholding accompanying this Affidavit.

3. I have personal knowledge of the criteria and procedures utilized by B&W in designating information as a trade secret, proprietary 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 B&W.

   (ii) The information is of a type customarily held in confidence by B&W and not customarily disclosed to the public. B&W 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 constitutes B&W policy and provides 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 follow:

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

any of B&W's competitors without license from B&W 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 its expenditure of resources or improve its competitive position in the design, manufacture, shipment, installation, quality assurance, or licensing of a similar product.

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

There are sound policy reasons behind the B&W system which include the following:

- The use of such information by B&W gives B&W a competitive advantage over its competitors. It is, therefore, withheld from disclosure to protect B&W's competitive advantage.

- It is information which is marketable in many ways. The extent to which such information is available to competitors diminishes the B&W ability to sell products and services involving the use of such information.

- Use by a competitor of B&W would put B&W at a competitive disadvantage by reducing the competitor's expenditure of resources at B&W's expense.

- B&W's capacity to invest corporate assets in research and development depends upon the success in obtaining and maintaining a competitive advantage.

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

(iv) 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.

(v) The proprietary information sought to be withheld in this submittal is that which is identified in Florida Power & Light Letter L-2011-435 (Response to NRC Mechanical and Civil Branch Request for Additional Information Number 23; Regarding Extended Power Uprate License Amendment Request) and Application for Withholding Proprietary Information from Public Disclosure, to the Document Control Desk.

The information which is proprietary in the proprietary version 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 (d) located as a superscript immediately following the brackets enclosing each item of information being identified as proprietary. These lower case letters refer to the types of information B&W customarily holds in confidence identified in Sections (4)(ii)(a) through (4)(ii)(d) of this affidavit pursuant to 10 CFR 2.390(b)(l).

SWORN BEFORE ME in the)
City of Cambridge in the)
Province of Ontario, this)
5th day of October, 2011.)

A Commissioner, etc.

JEFFREY MILLMAN

ATTACHMENT 2

Response to NRC Mechanical and Civil Branch Request for Additional Information EMCB RAI-23 Regarding Extended Power Uprate License Amendment Request

NON-PROPRIETARY VERSION

(Cover page plus 5 pages)

Response to Request for Additional Information

The following information is provided by Florida Power & Light (FPL) in response to the U. S. Nuclear Regulatory Commission's (NRC) Request for Additional Information (RAI). This information was requested to support the Extended Power Uprate (EPU) License Amendment Request (LAR) for St. Lucie Nuclear Plant Unit 1 that was submitted to the NRC by FPL via letter (L-2010-259) dated November 22, 2010, Accession Number ML103560419.

In an email dated July 27, 2011, from NRC (Tracy Orf) to FPL (Chris Wasik), Subject: St. Lucie 1 EPU draft Mechanical and Civil RAIs (EMCB), the NRC requested additional information regarding FPL's request to implement the EPU. The RAI consisted of forty-five (45) questions from the NRC's Mechanical and Civil Branch (EMCB). By letter L-2011-361, dated September 23, 2011, FPL provided a response to all of the forty-five questions with the exception of EMCB RAI-23. FPL stated it would provide a response to EMCB RAI-23 by October 28, 2011. FPL's response to EMCB RAI-23 is provided below.

EMCB RAI-23

To prove acceptability of the shown calculated loads for the steam generator nozzles shown on Tables 2.2.2.2-3 and 2.2.2.2-4, please provide the allowable loads and allowable load derivation.

Response

EPU LAR Attachment 5, Tables 2.2.2.2-3 and 2.2.2.2-4 present loading transferred from the piping to the steam generator main steam and feedwater nozzles respectively. Analysis of these nozzles was performed in accordance with the 1986 Edition (no addenda) of the ASME B&PV Code Section III, Subsection NB for Class 1 components using a conservative external piping load set that bounded the values shown in EPU LAR Attachment 5, Tables 2.2.2.2-3 and 2.2.2.2-4.

The results from the analyses are summarized in the tables below for two different regions in the nozzles; within the limits of reinforcement as defined by ASME Subsection NB (including the nozzle at the steam drum head) and outside the limits of reinforcement (including the nozzle safe-end). The bounding primary membrane, primary local membrane, primary membrane plus bending and range of primary plus secondary stress intensities are shown for each of the ASME Design, Level A, B, C and D conditions. The highest cumulative fatigue usage factor is also shown. Also presented are the allowable stresses and design margin.

[ ]^{a,c}. It should be noted that conservatisms are added to the analyses and low design margins may reflect the conservative manner in which the stresses were derived.

As part of the preparation of this response, the piping loads considered in the nozzle analyses were reconciled with those in the latest revisions of the piping calculations. The stress intensities and design margins in the tables below reflect the latest loads. EPU LAR Attachment 5, Table 2.2.2.5-4 has been updated accordingly with the revisions shown in underlined italics. [ ]^{a,c}.

Main Steam Nozzles (SGA and SGB)

Location	Loading Condition	Stress Type (Note 1)	Calculated Stress Intensity (ksi) [a,c]	Allowable Stress Intensity (ksi) (Note 2)	Design Margin (Note 3) [a,c]
Nozzle Outside Limits of Reinforcement (including safe-end)	Design	Pm		18.6	
		PL		27.9	
		PL + Pb		27.9	
	Level A&B	PL + Pb + Q Range		55.8	
		CUF		--	
	Level C	Pm		23.8	
		PL		39.7	
		PL + Pb		39.7	
	Level D	Pm		56.0	
		PL		84.0	
		PL + Pb		84.0	
Nozzle Within Limits of Reinforcement (including nozzle at head)	Design	Pm		26.7	
		PL		40.1	
		PL + Pb		40.1	
	Level A&B	PL + Pb + Q Range		80.0	
		CUF		--	
	Level C	Pm		39.9	
		PL		65.6	
		PL + Pb		65.6	
	Level D	Pm		56.0	
		PL		84.0	
		PL + Pb		84.0	

Notes:

1. Pm denotes Primary Membrane Stress Intensity
   PL denotes Local Primary Membrane Stress Intensity
   Pb denotes Primary Bending Stress Intensity
   Q denotes Secondary Stress Intensity
   CUF denotes Cumulative Usage Factor for fatigue.
2. Analysis of these nozzles was performed in accordance with the 1986 Edition (no addenda) of the ASME B&PV Code Section III, Subsection NB for Class 1 components and reflect a conservative external piping load set that bounds that shown in EPU LAR Attachment 5, Tables 2.2.2.2-3 and 2.2.2.2-4 (See LR Section 2.2.2.5.2.2).
3. Design Margin is based on the ratio of EPU stress intensity divided by the Allowable stress intensity.
4. Satisfies the fatigue exemption rules of ASME B&PV Code Section III, Subsection NB.

Feedwater Nozzles (SGA and SGB)

Location	Loading Condition	Stress Type (Note 1)	Calculated Stress Intensity (ksi) a,c	Allowable Stress Intensity (ksi) (Note 2)	Design Margin (Note 3) a,c
Nozzle Outside Limits of Reinforcement (including safe-end)	Design	Pm		26.7	
		PL		27.9	
		PL + Pb		27.9	
	Level A&B	PL + Pb + Q Range		56.7	
		CUF		1.0	
	Level C	Pm		26.5	
		PL		39.8	
		PL + Pb		39.8	
	Level D	Pm		49.0	
		PL		73.5	
		PL + Pb		73.5	
Nozzle Within Limits of Reinforcement (including nozzle at head)	Design	Pm		26.7	
		PL		40.1	
		PL + Pb		40.1	
	Level A&B	PL + Pb + Q Range		80.1	
		CUF		1.0	
	Level C	Pm		43.7	
		PL		65.6	
		PL + Pb		65.6	
	Level D	Pm		56.0	
		PL		84.0	
		PL + Pb		84.0	

Notes:

1. Pm denotes Primary Membrane Stress Intensity
   PL denotes Local Primary Membrane Stress Intensity
   Pb denotes Primary Bending Stress Intensity
   Q denotes Secondary Stress Intensity
   CUF denotes Cumulative Usage Factor for fatigue.
2. Analysis of these nozzles was performed in accordance with the 1986 Edition (no addenda) of the ASME B&PV Code Section III, Subsection NB for Class 1 components and reflect a conservative external piping load set that bounds that shown in EPU LAR Attachment 5, Tables 2.2.2.2-3 and 2.2.2.2-4 (See LR Section 2.2.2.5.2.2).
3. Design Margin is based on the ratio of EPU stress intensity divided by the Allowable stress intensity.

Revised Table 2.2.2.5-4
EPU Evaluation Summary
Critical Locations of Secondary Side Pressure Boundary Components

Component	Load Condition	Stress Category	Pre-EPU Stress (ksi)	EPU Stress (ksi)	Allow. Stress (ksi)
			Fatigue [a,c]	Fatigue [a,c]	Allow. Fatigue
Secondary shell/tubesheet juncture	Normal/Upset	Pm + Pb + Q Fatigue	[ ]	[ ]	80.1 1.0
Secondary deck lugs	Design	Pm PL PL + Pb			19.6 29.4 29.4
Secondary deck lugs at shell	Design	Pm PL PL + Pb			26.6 40.0 40.0
Secondary deck lugs	Normal/Upset	Pm + Pb + Q Fatigue			58.8 1.0
Secondary deck lugs	Emergency	Pm PL PL + Pb			28.1 42.2 42.2
Secondary deck lugs	Faulted	Pm PL PL + Pb			49:0 73.5 73.5
Main Steam Nozzle Within Limit of Reinforcement	Design	Pm PL			26.7 40.1

Revised Table 2.2.2.5-4
EPU Evaluation Summary
Critical Locations of Secondary Side Pressure Boundary Components
CONTINUED

Component	Load Condition	Stress Category	Pre-EPU Stress (ksi)	EPU Stress (ksi)	Allow. Stress (ksi)
			Fatigue a,c	Fatigue a,c	Allow. Fatigue
Main Steam Nozzle Safe End	Design	Pm PL	[ ]	[ ]	18.6 27.9
Main Steam Nozzle Safe End	Normal/Upset	Pm + Pb + Q Fatigue	[ ]	[ ]	55.8 1.0
Main Steam Nozzle / Head Juncture	Normal/Upset	Pm + Pb + Q Fatigue	[ ]	[ ]	80.0 1.0
Secondary Head / Shell Juncture	Normal/Upset	Pm + Pb + Q Fatigue	[ ]	[ ]	80.0 1.0
Main Steam Nozzle Outside of Limit of Reinforcement	Emergency	Pm PL PL + Pb	[ ]	[ ]	23.8 39.7 39.7
Main Steam Nozzle Within Limit of Reinforcement	Emergency	Pm PL PL + Pb	[ ]	[ ]	39.9 65.6 65.6
Secondary Head at Main Steam Nozzle (bounds all other locations on head)	Emergency	Pm PL PL + Pb	[ ]	[ ]	39.9 65.6 65.6

The stress and/or fatigue results for the EPU conditions might be lower than those for pre-EPU. This is due to a change in methodology or the removal of conservatisms during the EPU analytical reconciliation and does not invalidate the pre-EPU result.

ATTACHMENT 3

Response to NRC Mechanical and Civil Branch Request for Additional Information EMCB RAI-23 Regarding Extended Power Uprate License Amendment Request

Babcock and Wilcox
Application for Withholding
Proprietary Information
from Public Disclosure

(Cover page plus 4 pages)