



FPL

Proprietary Information – Withhold From Public Disclosure Under 10 CFR 2.390
The balance of this letter may be considered non-proprietary upon removal of
Attachment 2.

January 21, 2012

L-2012-009
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 2
Docket No. 50-389
Renewed Facility Operating License No. NPF-16

Response to NRC Reactor System Branch and Nuclear Performance Branch
Request for Additional Information Regarding Extended Power Uprate License
Amendment Request

References:

- (1) R. L. Anderson (FPL) to U.S. Nuclear Regulatory Commission (L-2011-021),
“License Amendment Request for Extended Power Uprate,” February 25, 2011,
Accession No. ML110730116.
- (2) Email from T. Orf (NRC) to C. Wasik (FPL), “St. Lucie 2 EPU – draft RAIs
Reactor Systems Branch and Nuclear Performance Branch (SRXB and SNPB),”
September 6, 2011.
- (3) Email from L. Abbott (FPL) to T. Orf (NRC), “Re: St. Lucie 2 EPU – draft RAIs
Reactor Systems Branch and Nuclear Performance Branch (SRXB and SNPB) –
Question Numbering,” September 28, 2011.

By letter L-2011-021 dated February 25, 2011 [Reference 1], Florida Power & Light Company (FPL) requested to amend Renewed Facility Operating License No. NPF-16 and revise the St. Lucie Unit 2 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).

A002
A001
NRR

In an email dated September 6, 2011 from NRC (T. Orf) to FPL (C. Wasik) [Reference 2], the NRC staff requested additional information regarding FPL's license amendment request (LAR) to implement the EPU. FPL email dated September 28, 2011 from FPL (L. Abbott) to NRC (T. Orf) [Reference 3], provided specific numbers (SXXB-01 through SRXB-102) for the questions included in the September 6, 2011 email. Attachments 1 and 2 to this letter provide the FPL response to RAI question SRXB-96 related to small break loss of coolant accident (SBLOCA). The remaining responses are being provided in separate submittals.

Attachment 1 contains the non-proprietary response to RAI question SRXB-96.
Attachment 2 contains the proprietary response to RAI question SRXB-96.

Attachment 3 contains the Proprietary Information Affidavit. The purpose of this attachment is to withhold the proprietary information contained in the response to SRXB-96 (Attachment 2) from public disclosure. The Affidavit signed by Westinghouse 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 which is proprietary to Westinghouse be withheld from public disclosure in accordance with 10 CFR 2.390.

In accordance with 10 CFR 50.94(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-2011-021 [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-January-2012*

Very truly yours,


Richard L. Anderson
Site Vice President
St. Lucie Plant

Attachments (3)

cc: Mr. William Passetti, Florida Department of Health

**Response to Reactor Systems Branch and Nuclear Performance Branch
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 review of Extended Power Uprate (EPU) License Amendment Request (LAR) for St. Lucie Nuclear Plant Unit 2 that was submitted to the NRC by FPL via letter (L-2011-021), February 25, 2011, Accession No. ML110730116.

In an email dated September 6, 2011 from NRC (T. Orf) to FPL (C. Wasik), "St. Lucie 2 EPU – draft RAIs Reactor Systems Branch and Nuclear Performance Branch (SRXB and SNPB)," the NRC staff requested additional information regarding FPL's request to implement the EPU. FPL email dated September 28, 2011 from FPL (L. Abbott) to NRC (T. Orf), "Re: St. Lucie 2 EPU - draft RAIs Reactor Systems Branch and Nuclear Performance Branch (SRXB and SNPB) – Question Numbering," provided specific numbers (SRXB-01 through SRXB-102) for the questions included in the RAI. The response to RAI question SRXB-96 related to the small break loss of coolant accident (SBLOCA) is provided in this submittal. The remaining responses are being provided in separate submittals.

The response to SRXB-96 contains information that is proprietary to Westinghouse Electric Company (Westinghouse). As such, the non-proprietary response for this RAI is provided below. The proprietary response for RAI SRAB-96 is provided in Attachment 2.

IV. Boric Acid Precipitation and LOCA Analyses (Attachment 5 to Licensing Report)

SRXB-96 (RAI 2.8.5.6.3-19)

What is the impact EPU conditions on the RCP trip criteria and timing evaluated for the limiting SBLOCAs? Please provide the results of the analysis of RCP trip for small breaks and demonstrate that the EOPs have been updated to reflect RCP trip at EPU conditions.

Response

The impact of EPU on Emergency Operating Procedures (EOPs) reactor coolant pump (RCP) trip criteria has been analyzed in detail for St. Lucie Unit 1 (Reference 1). The analysis concluded that the RCP trip criteria originally in the Unit 1 EOPs of 1600 psia pressurizer pressure for tripping two pumps (one RCP in each loop) and a minimum of 20°F subcooling for tripping all four RCPs remain unchanged for the Unit 1 EPU. The Unit 1 EPU value of pressurizer pressure for tripping two RCPs thus, remains at 1600 psia. Also, since the minimum subcooling condition is reached at about the same time as the pressurizer pressure condition for Unit 1, the criterion of subcooling is not used in the analysis. Hence, all four RCPs were tripped at 1600 psia in the analysis.

The analysis involved two key studies that used the value of 1600 psia pressurizer pressure for RCP trip. One study concluded that the RCP trip timing required to justify a manual RCP trip time of ≥ 2 minutes for tripping all four RCPs using 10 CFR 50 Appendix K methods, while maintaining conformance to 10 CFR 50.46 at EPU conditions was met. The second study concluded that the RCP trip timing required to justify a manual RCP trip time of ≥ 10 minutes

for tripping all four RCPs using "better estimate" inputs, while not exceeding the 10 CFR 50.46 peak clad temperature limit of 2200°F at EPU conditions, was also met.

The St. Lucie Unit 2 EOPs pre-EPU RCP trip criteria of 1736 psia pressurizer pressure for tripping one RCP in each loop and a minimum of 20°F subcooling for tripping all four RCPs remain unchanged for EPU. Consistent with the Unit 1 trip criteria described earlier due to the similarities between Units 1 and 2, the evaluation for Unit 2 was performed at the more conservative value of 1600 psia. An evaluation was performed of key parameters affecting the small break loss of coolant analysis (SBLOCA) analysis results. Units 1 and 2 have similar reactor coolant system (RCS) volumes, loop seal elevations, high pressure safety injection (HPSI) flow characteristics and power levels. Also, Unit 2 has a higher safety injection tank (SIT) pressure which results in a beneficial impact on the SBLOCA analysis.

The key parameters and their values for each of the plants for EPU conditions are shown in Table SRXB-96-1. Most of the Unit 2 EPU key parameters for the hot leg breaks, which are the breaks of concern for the trip two - leave two criteria, are the same or more favorable than the Unit 1 EPU parameters with respect to SBLOCA acceptance criteria except for the

[

] ^{a,c}

Both units used the same RCP trip criteria pre-EPU, and there are no significant EPU changes that would change this conclusion for EPU conditions. The comparison in Table SRXB-96-1 and the above arguments indicate that for Unit 2, the RCP trip criteria remains unchanged for-EPU with respect to satisfying 10 CFR 50.46 acceptance criteria, and the resulting timing meets the 2 and 10 minute criteria similar to Unit 1.

Thus, it can be concluded that for Unit 2, the RCP trip criteria with the resulting RCP trip timing required to justify a manual RCP trip time of ≥ 2 minutes for tripping all the RCPs while maintaining conformance to 10 CFR 50.46 at Unit 2 EPU conditions is met; and, the RCP trip timing required to justify a manual RCP trip time of ≥ 10 minutes for tripping all the RCPs using better estimate methods while not exceeding the 10 CFR 50.46 limit of 2200°F at Unit 2 EPU conditions also is met.

REFERENCES

1. R. L. Anderson (FPL) to U.S. Nuclear Regulatory Commission (L-2011-206), "Information Regarding Areva LOCA and Non-LOCA Methodologies Provided in Support of the St. Lucie Unit 1 License Amendment Request for Extended Power Uprate," May 27, 2011, Accession No. ML11153A048.

2. [

] ^{a,c}

Table SRXB-96-1
SBLOCA Key Emergency Core Cooling System Analysis Inputs with RCP Delayed Trip

Quantity	St. Lucie Unit 2 EPU Value	St. Lucie Unit 1 EPU Value	Units
Nominal reactor power level	3020 + 0.3%	3020 + 0.3%	MWt
Peak linear heat generation rate (PLHGR)	13	14.7	kW/ft
Nominal RCS pressure	2250	2250	psia
Minimum RCS flow rate	375,000	375,000	gpm
Maximum operating cold leg temperature	551.0	551.0	°F
Maximum number of plugged tubes per steam generator (SG)	10	10	%
Main steam safety valve first bank opening pressure (+3% tolerance)	1030	1030	psia
Minimum low pressurizer pressure reactor trip setpoint (harsh environment)	1810	1807	psia
Minimum low pressurizer pressure safety injection actuation system (SIAS) setpoint (harsh environment)	1646	1520	psia

a,c

Table SRXB-96-1 (continued)
SBLOCA Key Emergency Core Cooling System Analysis Inputs with RCP Delayed Trip

Quantity	St. Lucie Unit 2 EPU Value	St. Lucie Unit 1 EPU Value	Units	a,c
Minimum SIT injection pressure	499.7	244.7	psia	
Minimum axial shape index, (ASI)	-0.08	-0.08	--	
Maximum asymmetry in number of plugged tubes between the two SGs	± 2	± 2	%	
Pressurizer pressure for first RCP trip pair	1736	1600	psia	
Hot leg margin to saturation for second RCP trip pair	-	not used	°F	

Table SRXB-96-2

a,c

Table SRXB-96-3[illegible]

Figure SRXB-96- 1



a,c



ATTACHMENT 3

**Response to NRC Reactor Systems Branch
and Nuclear Performance Branch
Request for Additional Information Regarding
Extended Power Uprate License Amendment Request**

**Westinghouse Electric Company
Affidavit for Withhold Proprietary Information
from Public Disclosure**

This coversheet plus 7 pages



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USA

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Rockville, MD 20852

Direct tel: (412) 374-4643
Direct fax: (724) 720-0754
e-mail: greshaja@westinghouse.com
Proj letter: FPL-12-18

CAW-12-3357

January 16, 2012

APPLICATION FOR WITHHOLDING PROPRIETARY
INFORMATION FROM PUBLIC DISCLOSURE

Subject: Response to Request For Additional Information (RAI) 2.8.5.6.3-19 (SRXB 96) for St. Lucie Unit 2 EPU, (Proprietary)

References:

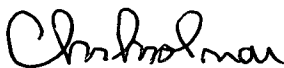

1. NRC E-Mail, T. Orf (NRC) to C. Wasik (FPL), "St. Lucie 2 EPU - Draft RAIs Reactor Systems Branch and Nuclear Performance Branch (SRXB and SNPB)," September 6, 2011, 12:19 PM.

The proprietary information for which withholding is being requested in the subject Request for Additional Information (RAI) response is further identified in Affidavit CAW-12-3357 signed by the owner of the proprietary information, Westinghouse Electric Company LLC. The subject RAI was transmitted by Reference 1. 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 Westinghouse affidavit should reference this letter, CAW-12-3357, and should be addressed to J. A. Gresham, Manager, Regulatory Compliance, Westinghouse Electric Company LLC, Suite 428, 1000 Westinghouse Drive, Cranberry Township, Pennsylvania 16066.

Very truly yours,


 J. A. Gresham, Manager
Regulatory Compliance

Enclosure

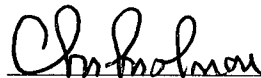
AFFIDAVIT

STATE OF CONNECTICUT:

ss Windsor Locks

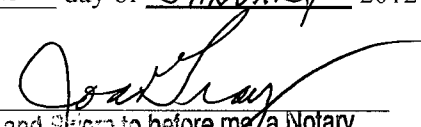
COUNTY OF HARTFORD:

Before me, the undersigned authority, personally appeared C. M. Molnar, who, being by me duly sworn according to law, deposes and says that he is authorized to execute this Affidavit on behalf of Westinghouse Electric Company LLC (Westinghouse), and that the averments of fact set forth in this Affidavit are true and correct to the best of his knowledge, information, and belief:



C. M. Molnar, Senior Engineer
Regulatory Compliance

Sworn to and subscribed before me
this 16th day of JANUARY 2012


Subscribed and sworn to before me, a Notary
Public, in and for the County of Hartford
and State of Connecticut, this 16th day
of JANUARY, 2012 2012

JOAN GRAY
Notary Public

My Commission Expires January 31, 2012

- (1) I am Senior Engineer, Regulatory Compliance, in Nuclear Services, 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 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 constitutes Westinghouse 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 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.

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.
- (iii) The information is being transmitted to the Commission in confidence and, under the provisions of 10 CFR 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 appropriately marked in the response to RAI 2.8.5.6.3-19 (SRXB 96) for St. Lucie Unit 2 EPU “ (Proprietary), for submittal to the Commission, being transmitted by Florida Power and Light letter and Application for Withholding Proprietary Information from Public Disclosure, to the Document Control Desk. RAI 2.8.5.6.3-19 (SRXB 96) was transmitted to Florida Power and Light by NRC E-Mail, T. Orf (NRC) to C. Wasik (FPL), “St. Lucie 2 EPU - Draft RAIs Reactor Systems Branch and Nuclear Performance Branch (SRXB and SNPB),” September 6, 2011, 12:19 PM.. The proprietary information as submitted by Westinghouse is that associated with the impact of the St. Lucie Unit 2 Extended Power Uprate (EPU) conditions on the reactor trip criteria and timing evaluated for the limiting small break loss of coolant accidents, and may be used only for that purpose.

This information is part of that which will enable Westinghouse to:

- (a) Support Florida Power and Light's EPU License Application Request.

Further this information has substantial commercial value as follows:

- (a) 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 calculations 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/or non-proprietary versions of documents 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).

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