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

May 24, 2011

L-2011-194
10 CFR 50.90

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 Request for Supplemental Information Regarding Acceptance of the 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 Unit 2 EPU – Supplemental Information needed for acceptance of requested licensing action re: amendment (TAC No. ME5843)," May 12, 2011, Accession No. ML111320004.

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).

By email from the NRC Project Manager dated May 12, 2011 [Reference 2], supplemental information related to the balance of plant analyses was requested by the NRC staff in the Mechanical & Civil Engineering Branch (EMCB) to support their acceptance review of the EPU LAR. The request identified two questions. The response to the request is provided in Attachment 1 to this letter.

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NRR

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-2011-021 [Reference 1].

This submittal contains two new commitments:

1. A commitment to complete the remaining eight final design basis calculations for planned modifications to balance of plant systems' pipe supports by June 4, 2011 (Note that in Attachment 7 of the Reference 1 submittal FPL has previously committed to implement modifications of the subject pipe supports); and

2. A commitment to implement the identified piping modifications prior to operation at EPU conditions.

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 24 - May - 2011

Very truly yours,

Richard L. Anderson
Site Vice President
St. Lucie Plant

Attachment

cc: Mr. William Passetti, Florida Department of Health

Response to Request for Supplemental Information

The following information is provided by Florida Power & Light in response to the U. S. Nuclear Regulatory Commission's (NRC) Request for Supplemental Information. This information was requested to support the NRC's acceptance review of the Extended Power Uprate (EPU) License Amendment Request (LAR) for St. Lucie Plant Unit 2 that was submitted to the NRC by FPL via letter (L-2011-0321) dated February 25, 2011, Accession Number ML110730116.

In an email dated May 12, 2011 from NRC (Tracy Orf) to FPL (Chris Wasik), Accession Number ML111320004, Subject: St. Lucie Unit 2 EPU – Supplemental Information needed for acceptance of requested licensing action re: amendment (TAC No. ME5843), the NRC requested supplemental information regarding FPL's EPU license amendment request. The request consisted of two (2) questions from the NRC's Mechanical & Civil Engineering Branch (EMCB). These two questions and the FPL responses are documented below.

NRC Request

Section 2.2.2, Balance of Plant, of the EPU licensing report (LR), Attachment 5 of the LAR, indicates that pre-baseline walkdowns found vibration levels at some locations that required detailed analyses that showed that six pipe modifications and three pipe support installations/modifications are required to prevent failure due to vibration. Summary of Regulatory Commitments, Attachment 7 of the LAR, includes modifications to pipe supports, but does not include modifications to piping.

1) **The staff requests that the licensee provide assurance that all structural modifications and/or additions have been identified and designed and that all structural evaluations and required design calculations to show that systems, structures and components (SSCs) credited to and/or affected by the proposed EPU have been completed and that all controlled documentation exists which finds the applicable SSCs structurally adequate to perform their intended design functions under EPU conditions. Upon such assurance, the EMCB staff will accept the EPU application for structural integrity review.**

Response

All piping and pipe support structural evaluations for systems affected by EPU have been completed. These completed evaluations have demonstrated that the majority of the piping and pipe support system components impacted by EPU are acceptable (i.e., no additional evaluations/calculations are required to address EPU).

For safety related piping and pipe supports structural evaluations that indicated that a modification was required due to EPU, the following summary provides the status of the supporting evaluations and related design basis calculations.

The component cooling water system required ten pipe support modifications as described in Table 1. The specific modification details for these ten pipe supports have been determined and nine of these ten modifications have been formally documented in completed design basis calculations. The design basis calculation which will document the tenth and final modification is in process and will be completed by June 4, 2011.

The component cooling water system required seven piping modifications as described in Table 2. The specific modification details involving reinforcing pads for these seven piping locations have been determined and are formally documented in completed design basis calculations.

The main steam and feedwater systems required seven pipe support modifications (four for main steam and three for feedwater) as described in Table 3. The specific modification details for these seven pipe supports have been determined, and the design basis calculations documenting these seven pipe support modifications are in process and will be completed by June 4, 2011.

With respect to piping and pipe support modifications that were required to address piping vibrations concerns, a total of ten modifications (six piping related and four pipe support related) were required as described in Table 4. The specific modification details for these ten modifications have been determined and are formally documented in completed design basis calculations.

Table 1
Component Cooling Water Modifications

ITEM	SUPPORT	PIPE SIZE (NPS)	BUILDING LOCATION	DESCRIPTION / TYPE
1	2063-6461	6	RAB	Add frame member
2	2063-6464A	6	RAB	Replace strut w/spring
3	2063-7427	20	RAB	Replace structural members
4	2064-86	10	RAB	Modify weld, relocate strut & add gussett
5	2074-59	24	CCWPH	Replace strut w/snubber
6	2074-7388	24	CCWPH	Shim gaps between lugs and pipe clamp
7	2074-7810	20	CCWPH	Weld surface mounted plate to embedded plate
8	2074-8088	14	CCWPH	Add structural weld
9	2074-8200	20	CCWPH	Add structural welds
10	2163-8050	4	RAB	Modify IWA
RAB = Reactor Auxiliary Building, CCWPH = Component Cooling Water Pump House				

Table 2
Piping Reinforcement Locations Component Cooling Water Piping

Pipe Stress Analysis Description	Number of Modifications	Piping Stress Isometric Node Number	Reinforcement Description
SDHX and CFC Cooler Return from CCW Bldg to CCW Pumps	4	7	0.562" pad on 24" x 16" Tee
		29	
		102	0.562" pad on 24" x 24" Tee
		104	
SDHX and CFC Cooler Return to CCW Bldg	1	7427	0.562" pad on 20" x 12" Tee
I-6-CC-153 From CCW Surge Tank to Return Header B (I-20-CC-26)	1	20	0.562" pad on 20" x 6" Tee
CCW Cooler Return from Control Room Air Conditioning	1	6421	0.562" pad on 20" x 4" Tee

Table 3
Main Steam and Feedwater Modifications

ITEM	SUPPORT	SYSTEM	PIPE SIZE (NPS)	BUILDING LOCATION	DESCRIPTION / TYPE
1	MS-4100-6080	MS	34	RB	Add new support
2	MS-4101-315A	MS	34	RB	Add new support
3	MS-4102-32B	MS	38	TB	Reinforce welds
4	MS-4102-274	MS	38	TB	Add weld
5	BF-4004-38	FW	20	TB	Modify snubber assemblies
6	BF-4004-41	FW	20	TB	Add weld
7	BF-4004-258	FW	20	TB	Add weld

MS = Main Steam, FW = Feedwater, RB = Reactor Building, TB = Turbine Building

Table 4
Modifications to Address Piping Vibration

Piping Modifications

ITEM	LINE NUMBER	MODIFICATION DESCRIPTION
1	Branch off of line 6"-HD-6	Modify weld at existing branch connection
2	Branch off of line 8"-HD-105	Modify weld at existing branch connection
3	Branch off of line 8"-HD-105	Modify weld at existing branch connection
4	Branch off of line 8"-MS-21	Modify weld at existing branch connection
5	Branch off of 1" line from 2"-AS-2	Revise cantilever configuration and modify weld at existing tee connection
6	Branch off of line 1 ½"-SD-8	Modify weld at existing branch connection

Pipe Support Modifications / Additions:

ITEM	SUPPORT	SYSTEM	PIPE SIZE (NPS)	BUILDING LOCATION	DESCRIPTION / TYPE
7	MS-12-7	MS	1	TB	New lateral shock absorber
8	MS-3023-11B	MS	4	MSFWTB	Replace shock absorber
9	MS-3023-13	MS	4	MSFWTB	Modify support member & clearance
10	MS-4102-2506	MS	14	TB	Replace shock absorber

TB = Turbine Building, MSFWTB = Main Steam Feedwater Trestle Building,
MS = Main Steam, HD = Heater Drain,
AS = Auxiliary Steam, SD = Steam Dump

NRC Request

2) Please discuss the "baseline" pipe vibrations and why the "baseline" has not been completed yet that could potentially identify structural modifications required for EPU and also discuss baseline remainder and its date of completion.

Response

The piping vibration program/plan describes various pre-EPU walkdowns that are classified as either pre-baseline or baseline walkdowns. As defined in the piping vibration plan, piping vibration walkdowns performed prior to the EPU outage were defined as pre-baseline walkdowns. Piping vibration walkdowns performed during the process of power ascension were defined as baseline walkdowns. As such, both the pre-baseline and baseline walkdowns being performed prior to the implementation of EPU are performed to actively monitor the affected piping systems for potential piping vibration concerns. Multiple piping vibration walkdowns of affected piping systems have been performed to date in order to obtain baseline vibration data for the affected piping systems. As a result of these piping vibration walkdowns, several piping and pipe support modifications have been identified (Refer to Table 4 above) and will be installed prior to operation at EPU conditions. The intent of these modifications is to reduce the potential for any adverse piping vibration issues during the EPU power ascension process.

In summary, piping vibration walkdowns performed to date have established pre-baseline vibration data. As a result of those walkdowns, piping and pipe support modifications have been identified and will be installed prior to operation at EPU conditions to reduce the potential for any adverse piping vibration issues during the EPU power ascension process. Additional piping vibration walkdowns are planned prior to the EPU outage to continually monitor the affected piping systems for any potential adverse changes with respect to piping vibration. The final baseline walkdowns will be performed during the process of power ascension (up to the current power level) coming out of the EPU outage. Additional piping vibration walkdowns will be performed during power ascension until the plant reaches its final EPU power level.