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

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 Attachments 1 and 2.

May 27, 2011

L-2011-206
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

Information Regarding Areva LOCA and Non-LOCA Methodologies Provided in Support of the St. Lucie Unit 1 License Amendment Request for Extended Power Uprate

References:

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

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).

Through review of several recent submittals, the NRC staff has identified issues related to Areva NP Inc. (Areva) Loss of Coolant Accident (LOCA) and non-LOCA methodologies, some of which were employed in the development of the Reference 1 EPU LAR. To address the NRC's concerns, additional LOCA and non-LOCA EPU analyses have been performed using revised methodologies. This submittal provides information related to these additional analyses and the associated results.

The results of the revised Loss of External Load (LOEL) analysis determined the need to revise the TS Table 3.7-1 trip setpoint for the maximum power level allowed with one

D104

main steam safety valve (MSSV) out-of-service. This proposed TS change impacts the 10 CFR 50.92 No Significant Hazards Consideration submitted with the Reference 1 EPU LAR. FPL has revised the applicable section of the No Significant Hazards Consideration analysis and has concluded that the proposed change presents no significant hazards under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of "no significant hazards consideration" is justified.

Attachment 1 provides information associated with the Small Break LOCA (SBLOCA) and non-LOCA analyses. Attachment 2 provides a revised Realistic Large Break LOCA (RLBLOCA) Summary Report. Attachment 3 provides the Renewed Facility Operating License proposed TS markup along with the associated clean TS page. Attachment 4 provides the changes to the Reference 1 EPU LAR description of the proposed TS changes and No Significant Hazards Consideration. Attachment 5 provides the proposed TS Bases change associated with the proposed TS change (provided for information only).

Attachment 6 provides the non-proprietary version of the Attachment 1 SBLOCA and non-LOCA information. Attachment 7 provides the non-proprietary version of the Attachment 2 RLBLOCA Summary Report. Attachment 8 provides a copy of the SBLOCA and non-LOCA, as well as the RLBLOCA, Proprietary Information Affidavits.

Note that:

- the RLBLOCA Summary Report provided in Attachment 2 supersedes the RLBLOCA Summary Report provided in Appendix C of Attachment 5 to the Reference 1 EPU LAR,
- the proposed TS and TS Bases changes provided in Attachments 3 and 5, respectively, are in addition to those provided in Attachments 3 and 4 to the Reference 1 EPU LAR, respectively,
- the description of the proposed TS change provided in Attachment 4 is in addition to the description of changes provided in Section 3.0 of Attachment 1 to the Reference 1 EPU LAR, and
- revised Section 5.2.I of the No Significant Hazards Consideration provided in Attachment 4 replaces Section 5.2.I of Attachment 1 to the Reference 1 EPU LAR in its entirety.

The purpose of Attachment 8 is to withhold the proprietary information contained in Attachments 1 and 2 from public disclosure. The affidavits signed by Areva as the owner of the information set forth the basis for which the information may be withheld from public disclosure by the Commission and address 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 Areva be withheld from public disclosure in accordance with 10 CFR 2.390. Correspondence with respect to the copyright or proprietary aspects provided in Attachments 1 and 2 or the supporting affidavit should be address to Gayle F. Elliott, Manager, Product Licensing, Areva NP Inc. P.O. Box 10935, Lynchburg, VA 24506-0935.

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 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 772-429-7138.

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

Executed on 27-May-2011

Very truly yours,

Richard L. Anderson
Site Vice President
St. Lucie Plant

Attachments (8)

cc: Mr. William Passetti, Florida Department of Health

ATTACHMENT 3

**TECHNICAL SPECIFICATIONS
MARKUP AND CLEAN PAGES**

**FLORIDA POWER AND LIGHT
ST. LUCIE PLANT UNIT 1**

This coversheet plus 2 pages

TABLE 3.7-1

MAXIMUM ALLOWABLE POWER LEVEL-HIGH TRIP SETPOINT WITH INOPERABLE STEAM LINE SAFETY VALVES DURING OPERATION WITH BOTH STEAM GENERATORS

Maximum Number of Inoperable Safety Valves on Any Operating Steam Generator	Maximum Allowable Power Level-High Trip Setpoint (Percent of RATED THERMAL POWER)
1	~~93.2~~ 88.5
2	79.8
3	66.5

TABLE 3.7-1

MAXIMUM ALLOWABLE POWER LEVEL-HIGH TRIP SETPOINT WITH INOPERABLE STEAM LINE SAFETY VALVES DURING OPERATION WITH BOTH STEAM GENERATORS

Maximum Number of Inoperable Safety Valves on Any Operating Steam Generator	Maximum Allowable Power Level-High Trip Setpoint (Percent of RATED THERMAL POWER)
1	88.5
2	79.8
3	66.5

ATTACHMENT 4

DESCRIPTION AND TECHNICAL JUSTIFICATION FOR THE TECHNICAL SPECIFICATION CHANGE

FLORIDA POWER AND LIGHT ST. LUCIE PLANT UNIT 1

This coversheet plus 3 pages

3.0 Proposed Changes

34. TS 3/4.7.1.1 PLANT SYSTEMS – TURBINE CYCLE – SAFETY VALVES

- Table 3.7-1 MAXIMUM ALLOWABLE POWER LEVEL-HIGH TRIP SETPOINT WITH INOPERABLE STEAM LINE SAFETY VALVES DURING OPERATION WITH BOTH STEAM GENERATORS

    - The Maximum Allowable Power Level-High Trip Setpoint (Percent of RATED THERMAL POWER) with one (1) Inoperable Safety Valve on Any Operating Steam Generator is changed from "93.2" to "88.5".

Licensing Report: Section 2.8.5.2.1 Loss of External Load, Turbine Trip, and Loss of Condenser Vacuum supplemental analysis provided in Section 2.3.1.1 of Attachment 1 to this submittal.

Basis for the Change: To address NRC concerns with the Areva methodologies associated with the analysis of pressurization events, supplemental analyses were performed for events that significantly challenge the overpressure criteria. The limiting secondary side pressurization event is the Loss of Electric Load (LOEL) event. When using the conservative inputs and assumptions discussed in Section 2.3.1.1 of Attachment 1 to this submittal, the LOEL analyses with inoperable main steam safety valves identified the need to reduce the maximum allowable power level-high trip setpoint with one (1) inoperable safety valve on any operating steam generator from the current value of 93.2% to the proposed value of 88.5% of RATED THERMAL POWER. As discussed in Section 2.3.1.1 of Attachment 1 to this submittal, the LOEL analyses with 1 to 3 inoperable safety valves on any operating steam generator demonstrated that, with the proposed change, the peak main steam system pressure remains below the acceptance criteria of 110% of design (i.e., 1100 psia).

5.2 No Significant Hazards Consideration

I. Main Steam Safety Valves

The maximum allowable power level-high trip setpoint (percent of RATED THERMAL POWER) with one inoperable safety valve on any operating steam generator is being reduced from "93.2" to "88.5". In addition, the main steam safety valve (MSSV) as-found setpoint tolerance limits are being increased to account for setpoint drift. The MSSV lift setpoints and the as-left setpoint tolerance limits are unchanged for EPU.

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

   The MSSVs are relied upon to prevent overpressurization of the secondary side steam system. The reduction in the maximum allowable power level-high trip setpoint with one MSSV inoperable is a setpoint change only and does not involve a change to plant structures, systems or components. There is no increase in the likelihood of MSSV-related failures or the probability of secondary side overpressure events. Analyses have demonstrated that, with the proposed change, the peak secondary side main steam system pressure remains below the acceptance criteria of 110% of design (i.e., 1100 psia). Therefore, the proposed trip setpoint change does not involve a significant increase in the probability of an accident previously evaluated.

   The increase in the as-found setpoint tolerance does not impact the probability of any accident previously evaluated. The applicable accident analyses demonstrated acceptable results assuming the opening setpoint of the safety valves was biased to the revised upper tolerance limits. Therefore, the proposed as-found setpoint tolerance change does not involve a significant increase in the probability of an accident previously evaluated.

   The operation of the MSSVs is not affected by the proposed changes. The MSSVs continue to be capable of performing their design functions. Acceptance criteria continue to be satisfied.

   Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed changes are setpoint-related changes only and do not involve a change to plant structures, systems or components. The proposed changes will not result in a new or different accident from any previously evaluated. No new accident scenarios, failure mechanisms, or limiting single failures are introduced as a result of the proposed changes.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

   The applicable accident analyses demonstrated acceptable results assuming the maximum allowable power level-high trip setpoint with one MSSV inoperable was reduced as proposed. The applicable accident analyses also demonstrated acceptable results assuming the opening setpoint of the safety valves was biased to the revised upper tolerance limits.

   Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

ATTACHMENT 5

TECHNICAL SPECIFICATIONS BASES MARKUP PAGE

(For Information Only)

FLORIDA POWER AND LIGHT
ST. LUCIE PLANT UNIT 1

This coversheet plus 1 page

BASES FOR SECTION 3/4.7

3/4.7 PLANT SYSTEMS

BASES

3/4.7.1 TURBINE CYCLE

3/4.7.1.1 SAFETY VALVES

The OPERABILITY of the main steam line code safety valves ensures that the secondary system pressure will be limited to within 110% of its design pressure of 1000 psia during the most severe anticipated system operational transient. The maximum relieving capacity is associated with a turbine trip from 100% RATED THERMAL POWER coincident with an assumed loss of condenser heat sink (i.e., no steam bypass to the condenser).

The specified valve lift settings and relieving capacities are in accordance with the requirements of Section III of the ASME Boiler and Pressure Code, 1971 Edition and ASME Code for Pumps and Valves, Class II. The total relieving capacity for all valves on all of the steam lines is 12.38×10^6 lbs/hr which is 102.8 percent the total secondary steam flow of 12.04×10^6 lbs/hr at 100% RATED THERMAL POWER. A minimum of 2 OPERABLE safety valves per steam generator ensures that sufficient relieving capacity is available for removing decay heat.

STARTUP and/or POWER OPERATION is allowable with safety valves inoperable within the limitations of the ACTION requirements on the basis of the reduction in secondary system steam flow and THERMAL POWER required by the reduced reactor trip settings of the Power Level-High channels. The reactor trip setpoint reductions are derived on the following bases:

and modified as necessary based on plant-specific analyses

For two loop operation

$$SP = \frac{(X)-(Y)(V)}{X} \times (106.5)$$

where:

SP = reduced reactor trip setpoint in percent of RATED THERMAL POWER

V = maximum number of inoperable safety valves per steam line