September 20, 2001

Mr. J. A. Stall
Senior Vice President, Nuclear and
Chief Nuclear Officer
Florida Power and Light Company
P.O. Box 14000
Juno Beach, Florida 33408-0420

SUBJECT: ST. LUCIE PLANT, UNIT NO. 2 - ISSUANCE OF AMENDMENT REGARDING ADDING NEW COLR METHODOLOGY-IMPROVED HEAT FLUX CORRELATION (TAC NO.MB1830)

Dear Mr. Stall:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 118 to Facility Operating License No. NPF-16 for the St. Lucie Plant, Unit No. 2. This amendment consists of changes to the Technical Specifications (TS) in response to your application dated April 18, 2001, as supplemented August 24, 2001.

This amendment updates the Core Operating Limits Report analytical methods listed in TS 6.9.1.11.b to include the ABB-Combustion Engineering Topical Report CENPD-387-P-A. Additionally, the Bases for TS 2.1.1, including Bases Figure B 2.1-1, are modified to reflect use of the ABB-NV critical heat flux correlation in satisfying the departure from nucleate boiling reactor core safety limit.

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

/RA/
Brendan T. Moroney, Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-389

Enclosures:
1. Amendment No. 118 to NPF-16
2. Safety Evaluation

cc w/enclosures: See next page

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Florida Power and Light Company

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FLORIDA POWER & LIGHT COMPANY

ORLANDO UTILITIES COMMISSION OF

THE CITY OF ORLANDO, FLORIDA

AND

FLORIDA MUNICIPAL POWER AGENCY

DOCKET NO. 50-389

ST. LUCIE PLANT UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 118
License No. NPF-16

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Florida Power & Light Company, et al. (the licensee), dated April 18, 2001, as supplemented August 24, 2001, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, Facility Operating License No. NPF-16 is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and by amending paragraph 2.C.2 to read as follows:

   2. Technical Specifications

      The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 118, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Richard P. Correia, Chief, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 20, 2001

ATTACHMENT TO LICENSE AMENDMENT NO. 118

TO FACILITY OPERATING LICENSE NO. NPF-16

DOCKET NO. 50-389

Replace the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by amendment number and contain vertical lines indicating the area of change.

Remove Pages	Insert Pages
XIX	XIX
6-20d	6-20d
	6-20e
B2-1	B2-1
B2-2	B2-2

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 118 TO FACILITY OPERATING LICENSE NO. NPF-16

FLORIDA POWER AND LIGHT COMPANY, ET AL.

ST. LUCIE PLANT, UNIT NO. 2

DOCKET NO. 50-389

1.0 INTRODUCTION

By letter dated April 18, 2001, as supplemented August 24, 2001, Florida Power and Light Company, et al., (the licensee) requested to amend Operating License NPF-16 for St. Lucie Unit 2, by incorporating revisions to the Technical Specifications (TS) related to the Core Operating Limits Report (COLR) analytical methods. The proposed amendment would update the COLR analytical methods listed in TS 6.9.1.11.b to include the ABB Combustion Engineering (ABB-CE) Topical Report CENPD-387-P-A. Additionally, the Bases for TS 2.1.1, including Bases Figure B 2.1-1, would be modified to reflect use of the ABB-NV critical heat flux correlation in satisfying the departure from nucleate boiling (DNBR) reactor core safety limit.

The licensee's supplementary submittal dated August 24, 2001, did not affect the original proposed no significant hazards determination, or expand the scope of the request as noticed in the *Federal Register* on May 30, 2001 (66 FR 29358).

2.0 BACKGROUND

The St. Lucie Unit 2 TS require that core operating limits be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and documented in the COLR. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the U.S. Nuclear Regulatory Commission (NRC), and listed in TS 6.9.1.11.b. The licensee proposes to add to the list of approved analytical methods the ABB-CE Topical Report CENPD-387-P-A, Revision 000, "ABB Critical Heat Flux Correlations for PWR Fuel," May 2000. This topical report provides improved heat flux correlations (designated ABB-NV and ABB-TV).

ABB-CE submitted this topical report for NRC approval in June 1999. In a Safety Evaluation (SE) dated March 16, 2000, the NRC staff concluded that the methods described in CENPD-387-P-A were acceptable for licensing applications, subject to the following conclusions and conditions (to which ABB-CE agreed):

1. The ABB-NV and ABB-TV correlations indicate a minimum DNBR limit of 1.13 will provide a 95 percent probability with 95 percent confidence of not experiencing Critical Heat Flux (CHF) on a rod showing the limiting value.

2. The ABB-NV and ABB-TV correlations must be used in conjunction with the TORC code since the correlations were developed on the basis of the TORC and the associated TORC input specifications. The correlations may also be used in the CETOP-D code in support of reload design calculations.

3. The ABB-NV and ABB-TV correlations must also be used with the ABB-CE optimized F_C shape factor to correct for non-uniform axial power shapes.

4. Range of Applicability for the correlations:

Parameter	ABB-NV Range	ABB-TV Range
Pressure (psia)	1750 to 2415	1500 to 2415
Local mass velocity (Mlbm/hr-ft^2)	0.8 to 3.16	0.9 to 3.40
Local quality	-0.14 to 0.22	-0.10 to 0.225
Heated length, inlet to CHF location (in)	48 to 150	48 to 136.7
Grid spacing (in)	8 to 18.86	8 to 18.86
Heated hydraulic diameter ratio, Dhm/Dh	0.679 to 1.08	0.679 to 1.00

5. The ABB-NV and ABB-TV correlations will be implemented in the reload analysis in the exact manner described in Section 7.1 of the topical report. Any change must have NRC staff approval.

6. Technology transfer to licensees will be accomplished only through a process which includes ABB CENP performing an independent benchmarking calculation for comparison to the licensee-generated results to verify that the new CHF correlations are properly applied for the first application by the licensee.

Section 2.1.1 of the St. Lucie Unit 2 TS establishes safety limits for the reactor core to prevent departure from nucleate boiling (DNB). The Bases for TS 2.1.1 discusses the analytical method used to relate measurable parameters (core thermal power, reactor coolant temperature and pressure) to DNB. The existing TS state that the CE-1 correlation is used. The licensee proposes to revise the Bases for TS 2.1.1 to allow use of either the CE-1 correlation or the ABB-NV correlation, which is the correlation applicable to the current fuel design. The ABB-NV correlation was developed as an alternative to the CE-1 correlation. Both are valid methods to be used in core analyses, according to the NRC staff Safety Evaluation of March 16, 2000. Since the licensee proposes to use the ABB-NV correlation as an alternate analytical method, it also needs to be added to the discussion in the Bases for TS 2.1.1. In addition, Figure B 2.1-1, “Axial Power Distributions For Thermal Margin Safety Limits,” needs to be revised to reflect the implementation of the ABB-NV correlation.

3.0 EVALUATION

The licensee proposes to add the ABB-CE Topical Report CENPD-387-P-A to the list of approved analytical methods in TS 6.9.1.11.b. This report was previously reviewed by the NRC staff and the analytical methods contained therein were approved for licensing applications, with certain conditions. The licensee proposes to use one of the DNB correlations contained in the report (the ABB-NV correlation) as an alternative to the CE-1 correlation. There are no current plans to use the ABB-TV correlation.

The licensee states in its application that this methodology will be used consistent with the application guidelines and limitations. In particular, the licensee will ensure compliance of both FPL's and any vendor's work with the six conditions of the March 16, 2000, SE described above. Compliance will be assured by various methods, such as procedural guidelines for individual analyses, SER compliance reviews, design reviews, or Quality Assurance design audits, as needed. In its letter dated August 24, 2001, the licensee has established a regulatory commitment to ensure compliance, which will be entered into its commitment management program. Therefore, since the licensee proposes to use an NRC-approved analytical methodology and has established a regulatory commitment to ensure it will be used in compliance with all applicable conditions, the proposed change is acceptable.

The licensee proposes to revise the text of the Bases for TS 2.1.1 and the attached Figure B 2.1-1 to reflect the application of the ABB-NV correlation. Since the use of the ABB-NV correlation has been found acceptable as stated above, these corresponding revisions to the Bases for TS 2.1.1 are also acceptable. There are no plans to use the ABB-TV correlation at this time. Prior to using the ABB-TV correlation, the licensee will change the Bases for TS 2.1.1 in accordance with the TS Bases Control Program, as described in TS 6.8.4.j.

4.0 STATE CONSULTATION

Based upon a letter dated March 8, 1991, from Mary E. Clark of the State of Florida, Department of Health and Rehabilitative Services, to Deborah A. Miller, Licensing Assistant, U.S. NRC, the State of Florida does not desire notification of issuance of license amendments.

5.0 ENVIRONMENTAL CONSIDERATION

This amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration and there has been no public comment on such finding (66 FR 29358, dated May 30, 2001). Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and 10 CFR 51.22(c)(10). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Brendan T. Moroney

Date: September 20, 2001