

December 23, 2005

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  
TYPE A TEST INTERVAL EXTENSION (TAC NO. MC6629)

Dear Mr. Stall:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 140 to Renewed Facility Operating License No. NPF-16 for the St. Lucie Plant, Unit No. 2. This amendment consists of changes to the Technical Specifications in response to your application dated March 31, 2005, as supplemented November 9, 2005.

This amendment extends the date for the next Appendix J, Type A test at St. Lucie Unit 2 until the end of the SL2-17 refueling outage.

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  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-389

Enclosures:

1. Amendment No. 140 to NPF-16
2. Safety Evaluation

cc w/enclosures: See next page

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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 RENEWED FACILITY OPERATING LICENSE

Amendment No. 140

Renewed 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 March 31, 2005, as supplemented November 9, 2005, 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, Renewed 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 3.B to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 140, 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/*

Michael L. Marshall, Jr., Chief  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: December 23, 2005

ATTACHMENT TO LICENSE AMENDMENT NO. 140  
TO RENEWED FACILITY OPERATING LICENSE NO. NPF-16  
DOCKET NO. 50-389

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

Remove Page

6 - 15b

Insert Page

6 - 15b

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 140

TO RENEWED 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 March 31, 2005, as supplemented November 9, 2005, Florida Power and Light Company, et al. (FPL, the licensee) requested to amend Renewed Operating License NPF-16 for St. Lucie Unit 2, by changing the St. Lucie Unit 2 Technical Specifications (TSs), Section 6.8.4.h, "Containment Leakage Rate Testing Program." The proposed amendment would provide an additional extension from the currently approved 15-year interval since the last containment overall integrated leakage rate test (ILRT, Type A test) performed in June 1992. The proposed amendment would extend the due date for the next Type A test from June 2007 to prior to the start-up from the fall 2007 refueling outage (SL2-17), which is currently scheduled to end in late December 2007.

The licensee's supplementary submittal dated November 9, 2005, provided clarifying information that did not change the scope of the proposed amendment as described in the original notice of proposed action published in the *Federal Register* and did not change the initial proposed no significant hazards determination.

2.0 REGULATORY EVALUATION

Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix J, Option B requires that a Type A test be conducted at a periodic interval based on historical performance of the overall containment system. St. Lucie Unit 2 TS 6.8.4.h, "Containment Leakage Rate Testing Program," requires that leakage rate testing be performed as required by 10 CFR Part 50, Appendix J, Option B, as modified by approved exemptions, and in accordance with the guidelines contained in Regulatory Guide (RG) 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995, with two exceptions (one of which is pertinent to the current request and is discussed in the next paragraph). This RG endorses, with certain exceptions, Nuclear Energy Institute (NEI) report NEI 94-01, Revision 0, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," dated July 26, 1995.

A Type A test is an overall (integrated) leakage rate test of the containment structure. NEI 94-01 specifies an initial test interval of 48 months, but allows an extended interval of 10 years, based upon two consecutive successful tests. There is also a provision for extending

the test interval an additional 15 months in certain circumstances. The most recent two Type A tests at St. Lucie (April 1989 and June 1992) have been successful, so the current interval requirement would normally be 10 years. However, by letter dated August 15, 2002, the licensee requested an extension of the test interval to 15 years. On April 10, 2003, the U.S. Nuclear Regulatory Commission (NRC) staff granted this request for St. Lucie Unit 2 via License Amendment No. 130, dated April 10, 2003.

RG 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," provides guidance on the use of Probabilistic Risk Assessment (PRA) findings and risk insights in support of licensee requests for changes to a plant's licensing basis, as in requests for license amendments and changes to the TSs.

### 3.0 TECHNICAL EVALUATION

#### 3.1 Proposed TS Change

Based on License Amendment No. 130, the licensee planned to perform the next Type A test for St. Lucie Unit 2 during the SL2-16 refueling outage in April 2006. Subsequent to the approval of License Amendment No.130, the licensee determined that both the reactor vessel head and the steam generators needed to be replaced at St. Lucie Unit 2 and has scheduled this work during the SL2-17 refueling outage. Since the SL2-17 outage work includes cutting an access hole in the containment, a Type A test will be required. This would result in performing Type A tests during back-to-back outages, which the licensee wishes to avoid because of the considerable expenditure of resources and additional outage time required to perform the tests. Therefore, the licensee is requesting a change to TS 6.8.4.h that would alter the exception from the guidelines of RG 1.163 and NEI 94-01, Revision 0, by adding approximately 6 months to the 5-year extension already in place, for a total interval of approximately 15 years and 6 months.

The current St. Lucie Unit 2 TS 6.8.4.h states, "The first Type A test performed after the June 1992 Type A test shall be no later than June 2007." The licensee proposed to change this to state, "The first Type A test performed after the June 1992 Type A test shall be prior to startup following the SL2-17 refueling outage."

The local leakage rate tests (Type B and Type C tests), including their schedules, are not affected by this request.

The licensee justifies the proposed change to extend the ILRT surveillance interval based on the historical test results and the containment inspections program, supported by risk-informed analysis. These are addressed in the following sections.

#### 3.2 Structural Integrity Considerations

In its submittal, the licensee stated that the St. Lucie Unit 2 containment vessel is examined in accordance with the requirements of the American Society of Mechanical Engineers (ASME) Code Section XI, Subsection IWE, the plant protective coatings program, and the Containment Leakage Rate Test Program. Historically, visual inspections were performed preceding each



Type A test, thus ensuring the inspections were performed three times in 10 years. This frequency was maintained subsequent to adoption of Appendix J, Option B and approval of the 15-year ILRT surveillance interval. The results of these inspections indicated that there have been no significant deficiencies in the structural integrity or material condition of the containment vessel except for minor coating issues.

Two conditions related to material condition of the containment boundary were identified by other inspection processes. The first condition, documented in St. Lucie Plant Condition Report 97-0890, concerned deterioration of the moisture barrier at the interface of the concrete floor and containment vessel. The licensee stated that this condition generally involved only staining or light surface corrosion, with a few instances of pitting observed. Evaluations determined that the localized areas of concern do not represent an issue with respect to the integrity of the containment vessel. The site corrective action program has been utilized to track additional inspections and plan corrective actions. One-third of the moisture barrier at the concrete floor to vessel interface on both sides of containment is inspected during each inspection period of the St. Lucie ASME Section XI, ISI-IWE Plan. Two-thirds of the Unit 2 moisture barrier has been inspected as of the spring 2003 refueling outage, with results similar to or less significant than the originally inspected areas.

The second condition involved external corrosion, due to moisture accumulation from condensation, on the component cooling water penetrations to containment, as initially documented in Condition Report 97-1799. For the second condition, corrective actions included removal of corrosion products, inspection of components and respective thickness measurements, application of protective coatings, and installation of antisweat insulation. Results of these evaluations at the most affected penetrations determined that the piping degradation was minor and that the remaining penetrations were in satisfactory condition.

Both of these conditions were identified prior to implementation of the IWE Inspection program at St. Lucie. Based on the inspections, repairs, and evaluation of these issues, the licensee concluded that augmented inspection was not required in accordance with IWE-1240.

St Lucie Unit 2 implemented the ASME Section XI, Subsection IWE inspection plan on August 9, 2000. The IWE program performs inspection of the entire accessible interior surface of the containment in each of 3 periods within a 10-year surveillance interval. The licensee stated that the first-period 100-percent general surface area inspection for Unit 2 was completed in April 2000 and the second-period inspection was completed in November 2001 with no indications of significant degradation found. The Metal Containment Inservice Inspection Program (ISI/IWE-PSL-1/2-PROGRAM) provides the rules and requirements for the containment inservice inspection program at St. Lucie Unit 2. The specific areas and components scheduled for inspection in accordance with the program are provided in ISI/IWE-PSL-2-PLAN, ASME Section XI, Subsection IWE Containment Building Metal Containment Inservice Inspection Plan for St. Lucie Unit 2. The program requirements include inspection of containment surfaces, pressure retaining welds, bolting, seals, gaskets, and moisture barriers using visual, surface, and volumetric techniques as required. The licensee also stated that examinations that detect flaws or evidence of degradation shall be documented through the site corrective action process and dispositioned in accordance with the requirements of IWE-3000.

Related to the required repair of the containment vessel coatings, ASME Section XI,

Subsection IWE, requires visual exams to assess the condition of the vessel metal surface for evidence of flaking, blistering, peeling, discoloration, and other signs of distress. The protective coatings program at St. Lucie requires that a walkdown of the containment interior be performed each refueling outage by the FPL coatings specialist and Engineering personnel to inspect any existing areas of nonqualified coatings and to determine any other areas in need of repair. Those areas identified by inspection, which do not meet acceptance criteria, are evaluated and scheduled for repair as necessary. The licensee stated that qualified nondestructive examiners perform inspections prior to any repair to assess the condition of the base material and, following the completion of the coating repairs, to document as-left conditions. The licensee found no indications of containment vessel metal degradation on St. Lucie Unit 2 during these types of inspections.

On the basis of the above discussion, the staff concludes that the licensee has adequate procedures to examine and monitor the structural integrity of the containment of St. Lucie Unit 2. Therefore, granting an additional extension of approximately 6 months for performing the ILRT is acceptable.

### 3.3 Risk Considerations

In License Amendment No. 130, the NRC staff approved an extension of the Type A test interval from 10 to 15 years. This test interval extension was supported by a licensee risk assessment. The NRC staff's review of the licensee's risk assessment was documented in the safety evaluation (SE) for License Amendment 130, and concluded that the combined risk impact of the test interval extensions, in terms of total integrated plant risk, large early release frequency, and conditional containment failure probability, is small and supportive of the change.

In the current request, the licensee performed a risk assessment of the impact of extending the Type A test frequency from the original three tests in 10 years to one test in 16 years, and reported the risk results in their application for license amendment. The risk assessment is based on the same methodology, input, and assumptions used to support License Amendment 130, with the exception of the revised test interval and the use of an updated version of the plant-specific PRA.

Based on review of the analyses provided by the licensee, the NRC staff determined that the risk impacts and risk comparisons for the proposed change are essentially unchanged from those reported in the previous SE, and the staff conclusions remain valid. Specifically, the increase in the total integrated plant risk is small and supportive of the proposed change, the increase in the test interval results in only a small change in large early release frequency consistent with the acceptance guidelines of RG 1.174 and the defense-in-depth philosophy is maintained based on the small magnitude of the change in the conditional containment failure probability.

Based on these conclusions, the staff finds that the increase in predicted risk due to the proposed change is within the acceptance guidelines, while maintaining the defense-in-depth philosophy, of RG 1.174 and, therefore, is acceptable.

### 3.4 Summary

Based on the foregoing evaluation, the staff finds that the interval until the next containment Type A test at St. Lucie, Unit 2, may be extended to the end of refueling outage SL2-17 (total interval of approximately 15 years and 6 months), and that the proposed change to TS 6.8.4.h is acceptable.

#### 4.0 STATE CONSULTATION

Based upon a letter dated May 2, 2003, from Michael N. Stephens of the Florida Department of Health, Bureau of Radiation Control, to Brenda L. Mozafari, Senior Project Manager, U.S. Nuclear Regulatory Commission, 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 and changes surveillance requirements. The NRC staff has determined that the amendment involves 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 amendment involves no significant hazards consideration and there has been no public comment on such finding (70 FR 33215, dated June 7, 2005). Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). 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.

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Date: December 23, 2005

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