

September 4, 2007

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 UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS REGARDING
CONTAINMENT SPRAY NOZZLE SURVEILLANCE TESTING FREQUENCY
CHANGE (TAC NOS. MD3495 AND MD3496)

Dear Mr. Stall:

The Commission has issued the enclosed Amendment Nos. 201 and 148 to Renewed Facility Operating License Nos. DPR-67 and NPF-16 for the St. Lucie Plant, Units 1 and 2. These amendments consist of changes to the Technical Specifications in response to your application dated October 19, 2006, as supplemented June 7, 2007.

These amendments revise Technical Specification 4.6.2.1.d to allow the frequency of air or smoke flow testing of the containment spray nozzles to be changed from 10 years to an activity-related event or condition-based verification requirement. The revised frequency will be following maintenance that could cause a blockage.

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/

Brenda L. Mozafari, Senior Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-335
and 50-389

Enclosures:

1. Amendment No. 201 to DPR-67
2. Amendment No. 148 to NPF-16
3. Safety Evaluation

cc w/enclosures: See next page

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FLORIDA POWER & LIGHT COMPANY

DOCKET NO. 50-335

ST. LUCIE PLANT UNIT NO. 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 201
Renewed License No. DPR-67

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Florida Power & Light Company (the licensee), dated October 19, 2006, as supplemented June 7, 2007, 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. DPR-67 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. 201, 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 issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA Evangelos Marinos for Thomas Boyce/

Thomas H. Boyce, Chief
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Operating License
and Technical Specifications

Date of Issuance: September 4, 2007

ATTACHMENT TO LICENSE AMENDMENT NO. 201
TO RENEWED FACILITY OPERATING LICENSE NO. DPR-67
DOCKET NO. 50-335

Replace Page 3 of Renewed Operating License DPR-67 with the attached Page 3.

Replace the following page of the Appendix A Technical Specification with the attached page. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

Remove Page

3/4 6-16

Insert Page

3/4 6-16

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. 148
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 October 19, 2006, as supplemented June 7, 2007, 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. 148, 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 issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA Evangelos Marinos for Thomas Boyce/

Thomas H. Boyce, 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: September 4, 2007

ATTACHMENT TO LICENSE AMENDMENT NO. 148
TO RENEWED FACILITY OPERATING LICENSE NO. NPF-16
DOCKET NO. 50-389

Replace Page 3a of Renewed Operating License NPF-16 with the attached Page 3a.

Replace the following page of the Appendix A Technical Specification with the attached page. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

Remove Page

3/4 6-16

Insert Page

3/4 6-16

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 201 AND 148

TO RENEWED FACILITY OPERATING LICENSES NOS. DPR-67 AND NPF-16

FLORIDA POWER AND LIGHT COMPANY, ET AL.

ST. LUCIE PLANT, UNITS NOS. 1 AND 2

DOCKET NOS. 50-335 AND 50-389

1.0 INTRODUCTION

By letter October 19, 2006, as supplemented June 7, 2007, Florida Power and Light Company, et al. (the licensee) requested an amendment to the St. Lucie Units 1 and 2 Technical Specifications (TS). The proposed change would revise the TS Surveillance Requirement (SR) 4.6.2.1.d calendar based frequency for verifying each Containment Spray (CS) nozzle is unobstructed from "At least once per 10 years by performing an air or smoke flow test . . ." to a condition or event based ". . . verifying each spray nozzle is unobstructed following maintenance that could result in nozzle blockage."

The supplement dated June 7, 2007, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on January 3, 2007 (72 FR 152).

2.0 REGULATORY EVALUATION

The Updated Final Safety Analysis Report (UFSAR) for St. Lucie Unit 1, Section 3.1, "Conformance With the General Design Criteria," indicates that the Construction Permit for the Hutchinson Island Plant was issued on July 1, 1970, and preceded the publication of the (Atomic Energy Commission) "General Design Criteria for Nuclear Power Plants" (10 CFR 50, Appendix A, February 20, 1971). This UFSAR section presents the design intent in consideration of the General Design Criteria (GDC) for Nuclear Power Plants. Most pertinent to the CS System are Criterion 38 - Containment Heat Removal; Criterion 39 - Inspection of Containment Heat Removal System, and; Criterion 40 - Testing of Containment Heat Removal System. Similarly the UFSAR for St. Lucie Unit 2, Section 3.1, Conformance With NRC General Design Criteria, discusses conformance with the NRC "General Design Criteria for Nuclear Power Plants" as specified in Appendix A to Title 10, Code of Federal Regulation (10 CFR) Part 50 effective May 21, 1971, and subsequently amended on July 7, 1971, and February 12, 1976. Based on the content herein, the applicant concluded, that St. Lucie Unit 2 fully satisfies and is in compliance with the GDC.

The proposed revision of the St. Lucie Unit 1 and Unit 2 TS surveillance requirements does not impact conformance with the applicable provisions of the described GDC.

NUREG-1432 Rev. 3.0, Standard Technical Specifications Combustion Engineering Plants, provides an SR, "SR 3.6.6A.9 Verify each spray nozzle is unobstructed" with a frequency of 10 years. The NUREG-1432 corresponding BASES reads:

With the containment spray inlet valves closed and the spray header drained of any solution, low pressure air or smoke can be blown through test connections. Performance of this SR demonstrates that each spray nozzle is unobstructed and provides assurance that spray coverage of the containment during an accident is not degraded. Due to the passive design of the nozzle, a test at . . . 10-year interval is considered adequate to detect obstruction of the spray nozzles.

3.0 TECHNICAL EVALUATION

3.1 Background

The St. Lucie CS Systems consist of two independent and redundant trains each containing a spray pump, shutdown heat exchanger, piping, valves and spray header. The system is actuated automatically or manually to prevent the pressure and temperature in containment from reaching unacceptable levels following an accident. The CS System operates in conjunction with the Iodine Removal System, which adds a pH control solution to the spray water in order to remove iodine from the containment post-design-basis accident atmosphere. Each train's spray header has a minimum of 178 spray nozzles. The spray nozzles are open-throat design with orifice sizes of 0.438 inch in Unit 1 and 0.375 inch in Unit 2. The nozzle orifice size is larger than the maximum particle size postulated in the flow path not blocked by the CS pump suction strainers/screens and thus are not subject to clogging by debris from the designed suction sources. At least 10 percent of the nozzles could clog before the spray flow would decrease measurably. The CS system components are fabricated of stainless steel or other corrosion resistant materials and much of the CS header, spray rings and nozzles are normally dry, thus, no internally generated corrosion debris is expected. The spray nozzles are located high in the containment above almost all other equipment and structures and are oriented in a downward direction. This location and orientation make the introduction of debris from outside the distribution header very unlikely.

The licensee indicated that maintenance or repair work presented the most potential for causing nozzle blockage by introducing debris into the system, although this potential would be small.

TS SR 4.6.2.1.d currently requires a test every 10 years to ensure that the CS system nozzles are not obstructed. The flow test may be performed by pressurizing the CS spray headers with air or smoke and observing flow out of the nozzles. Current licensee procedures accomplish the test by introducing warm air into the headers and observing the nozzle discharge with infrared thermographic imaging equipment. Potential sources for spray nozzle obstruction are corrosion, chemical additive precipitates, failed coating products or debris (foreign material). This safety evaluation addresses these potential sources for nozzle obstruction after a discussion of industry and plant-specific testing experience.

3.2 Testing Experience

NRC Repor.

t NUREG-1366, Improvements to Technical Specifications Surveillance Requirements, reported on an NRC staff review of industry experience, and indicated that, in general, once tested after construction, CS systems have not been subject to blockage. The problems discovered were deemed related to original construction, and not the result of subsequent operation and maintenance.

The licensee indicated in its application dated October 19, 2006, that the CS system nozzles at St. Lucie Unit 1 were tested satisfactorily in 1980, 1985, 1990, 1991, 2001, and 2002 using infrared thermography and all nozzles appeared free of obstructions. Unit 1 experienced an inadvertent actuation of the A train in 1995 with an estimated 10,000 gallons of borated water flow. The subsequent periodic testing results showed no apparent nozzle blockage to have resulted from the mishap. The associated License Event Report, LER 95-007, also referred to a November 1978 inadvertent actuation of the same train involving an estimated 2000 gallons. Unit 2 spray nozzles were similarly tested in 1987 and 1997 with obstructed flow identified for one nozzle during the 1987 test. That obstruction was identified as a small piece of rubber from the temporary hose being used to supply air to the spray header for the nozzle testing. These test results suggest that the original construction related spray nozzle obstruction problems identified in NUREG-1366 do not exist at the St. Lucie units.

3.3 Materials and Corrosion

The CS system fluid path components are constructed from corrosion resistant materials with the majority being stainless steel. The piping at the CS ring headers elevation and the nozzles do not normally contain liquid and thus, degradation or obstruction of the spray nozzles due to corrosion, corrosion products or fluid precipitates or sediments/sludge are not expected.

3.4 Foreign Materials Exclusion

The licensee indicated that the St. Lucie Foreign Material Exclusion (FME) program is implemented by administrative procedure ADM-27.13, Foreign Material Exclusion. This procedure requires actions to be taken to prevent the uncontrolled introduction of foreign material into open systems or areas and to recover from a loss of foreign material control. FME work practices specified by this procedure include:

- Mandatory pre-job briefing includes discussion of FME considerations.
- Direct Supervisory oversight is required on all open jobs.
- Dedicated FME Monitors are responsible for access control and material tracking.
- Positive control of personal items including hard hats, dosimetry, safety glasses, gloves, security badges, watches, etc.
- Pre-cleaning of tools and areas before breaching a system boundary.
- Clear plastic or transparent materials shall be conspicuously marked, and used only when absolutely necessary.
- Positive control of FME covers such that the covers themselves do not become intrusive.
- Containers, boxes, wrappers are not permitted in an FME area.
- Special precautions are taken when work activities could generate dust or debris.

- Work activities adjacent to the FME controlled area are considered when establishing the FME controls.
- Thorough inspection and reconciling of the FME log prior to reestablishing system integrity either for final closeout or when a system is secured for suspension of work (e.g., end of shift).
- Any loss of FME integrity requires identification in the plant Corrective Action Program.

The proposed SR change is supported by the requirement to verify system operability after maintenance that could result in nozzle blockage. Foreign material introduced as a result of maintenance, although unlikely, is the most likely potential cause for future spray nozzle obstruction. Therefore, verification conducted to confirm that potentially affected nozzles are free of blockage following maintenance activities that could result in nozzle blockage, is sufficient to confirm that the nozzles are free of obstruction. The current post-maintenance testing procedure provides this verification, as it requires testing of the system and components following maintenance activities as necessary to demonstrate operability.

The NRC staff reviewed NRC Inspection Reports and Licensee Event Reports for St. Lucie Units 1 and 2 issued during the prior 6 years and noted only one instance where an event involving potential lapse of FME control with an open system. This event involved the May 2003, observance of several objects on the Unit 2 lower core support plate after a full-core offload.

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

These amendments change surveillance requirements. 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 (72 FR 152, dated January 3, 2007). Accordingly, these amendments meet 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 these amendments.

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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Jerome Bettle

Date: September 4, 2007