

August 18, 1998

Mr. T. F. Plunkett
President - Nuclear Division
Florida Power and Light Company
P.O. Box 14000
Juno Beach, Florida 33408-0420

SUBJECT: ST. LUCIE UNIT 2 - ISSUANCE OF AMENDMENT REGARDING REACTOR COOLANT SYSTEM CHEMISTRY AND ADMINISTRATIVE CHANGES (TAC NO. MA1237)

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 95 to Facility Operating License No. NPF-16 for the St. Lucie Plant, Unit 2. This amendment consists of changes to the Technical Specifications (TS) in response to your application dated March 3, 1998.

This amendment revises the TS in three areas. First, the amendment revises TS 3.4.7, Reactor Coolant System-Chemistry, to eliminate the need for sampling of reactor coolant system chemistry in the defueled condition. Second, the amendment revises TS 5.6.1.a.1, Design Features-Fuel Storage-Criticality, to reflect the total uncertainty associated with the unborated criticality analysis previously approved by NRC. Third, the amendment revises TS 6.5.2.9.d, Technical Review Responsibilities, to be consistent with the quality assurance process previously approved by NRC.

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,

Original signed by:

William C. Gleaves, Project Manager
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-389

Enclosures: 1. Amendment No. 95 to NPF-16
2. Safety Evaluation

cc w/enclosures: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

August 18, 1998

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President - Nuclear Division
Florida Power and Light Company
P.O. Box 14000
Juno Beach, Florida 33408-0420

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(TAC NO. MA1237)

Dear Mr. Plunkett:

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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,

A handwritten signature in cursive script, appearing to read "Wm C Gleaves".

William C. Gleaves, Project Manager
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-389

Enclosures: 1. Amendment No. 95 to NPF-16
2. Safety Evaluation

cc w/enclosures: See next page

Mr. T. F. Plunkett
Florida Power and Light Company

ST. LUCIE PLANT

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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. 95
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 3, 1998, 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.

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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. 95, 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 30 days of receipt.

FOR THE NUCLEAR REGULATORY
COMMISSION



Frederick J. Hebdon, Director
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 18, 1998

ATTACHMENT TO LICENSE AMENDMENT NO. 95

TO FACILITY OPERATING LICENSE NO. NPF-16

DOCKET NO. 50-389

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by amendment number and contain vertical lines indicating the area of change. The corresponding overleaf pages are also provided to maintain document completeness.

Remove Pages

3/4 4-22

5-4

6-12

Insert Pages

3/4 4-22

5-4

6-12

REACTOR COOLANT SYSTEM

3/4.4.7 CHEMISTRY

LIMITING CONDITION FOR OPERATION

3.4.7 The Reactor Coolant System chemistry shall be maintained within the limits specified in Table 3.4-2.

APPLICABILITY: All MODES

ACTION:

MODES 1, 2, 3, and 4:

- a. With any one or more chemistry parameter in excess of its Steady State Limit but within its Transient Limit, restore the parameter to within its Steady State Limit within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With any one or more chemistry parameter in excess of its Transient Limit, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

MODES 5 and 6:

With the concentration of either chloride or fluoride in the Reactor Coolant System in excess of its Steady State Limit for more than 24 hours or in excess of its Transient Limit, reduce the pressurizer pressure to less than or equal to 500 psia, if applicable, and perform an engineering evaluation to determine the effects of the out-of-limit condition on the structural integrity of the Reactor Coolant System; determine that the Reactor Coolant System remains acceptable for continued operation prior to increasing the pressurizer pressure above 500 psia or prior to proceeding to MODE 4.

SURVEILLANCE REQUIREMENTS

4.4.7 The Reactor Coolant System chemistry shall be determined to be within the limits by analysis of those parameters at the frequencies specified in Table 4.4-3.

DESIGN FEATURES

VOLUME

5.4.2 The total water and steam volume of the reactor coolant system is $10,931 \pm 275$ cubic feet at a nominal T_{avg} of 572° F.

5.5 METEOROLOGICAL TOWER LOCATION

5.5.1 The meteorological tower shall be located as shown on Figure 5.1-1.

5.6 FUEL STORAGE

CRITICALITY

5.6.1

- a. The spent fuel storage racks are designed and shall be maintained with:
1. A k_{eff} equivalent to less than or equal to 0.95 when flooded with unborated water, which includes a conservative allowance of $0.024 \Delta k_{eff}$ (Region I) and $0.017 \Delta k_{eff}$ (Region II) for Total Uncertainty.

2. A nominal 8.96 inch center-to-center distance between fuel assemblies placed in the storage racks.

3. A boron concentration greater than or equal to 1720 ppm.

Region I can be used to store fuel which has a U-235 enrichment less than or equal to 4.5 weight percent. Region II can be used to store fuel which has achieved sufficient burnup such that storage in Region I is not required. The initial enrichment vs. burnup requirements of Figure 5.6-1 shall be met prior to storage of fuel assemblies in Region II.

- b. The new fuel storage racks are designed for dry storage of unirradiated fuel assemblies having a U-235 enrichment less than or equal to 4.5 weight percent, while maintaining a k_{eff} of less than or equal to 0.98 under the most reactive condition.

DRAINAGE

5.6.2 The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 56 feet.

CAPACITY

5.6.3 The spent fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 1076 fuel assemblies.

5.7 COMPONENT CYCLIC OR TRANSIENT LIMITS

5.7.1 The components identified in Table 5.7-1 are designed and shall be maintained within the cyclic or transient limits of Table 5.7-1.

ADMINISTRATIVE CONTROLS

AUDITS (continued)

- d. The performance of activities required by the Quality Assurance Program to meet the criteria of Appendix B, 10 CFR Part 50.
- e. Any other area of unit operation considered appropriate by the CNRB or the President - Nuclear Division.
- f. The fire protection programmatic controls including the implementing procedures at least once per 24 months by qualified licensee QA personnel.
- g. The fire protection equipment and program implementation at least once per 12 months utilizing either a qualified offsite licensee fire protection engineer or an outside independent fire protection consultant. An outside independent fire protection consultant shall be used at least every third year.
- h. The radiological environmental monitoring program and the results thereof.
- i. The OFFSITE DOSE CALCULATION MANUAL and implementing procedures.
- j. The PROCESS CONTROL PROGRAM and implementing procedures for dewatering of radioactive bead resin.

TECHNICAL REVIEW RESPONSIBILITIES

- 6.5.2.9 The technical review responsibilities under the cognizance of the CNRB shall encompass:
- a. Plant operating characteristics, NRC issuances, industry advisories, Licensee Event Reports and other sources that may indicate areas for improving plant safety:
 - b. Plant operations, modifications, maintenance, and surveillance to verify independently that these activities are performed safely and correctly and that human errors are reduced as much as practical;
 - c. Internal and external operational experience information that may indicate areas for improving plant safety; and
 - d. Making detailed recommendations to the Chairman - CNRB and plant management for revising procedures, equipment modifications or other means of improving nuclear safety and plant reliability.

AUTHORITY

- 6.5.2.10 The CNRB shall report to and advise the President - Nuclear Division on those areas of responsibility specified in Specifications 6.5.2.7, 6.5.2.8, and 6.5.2.9.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 95 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 March 3, 1998, Florida Power and Light Company (FPL or the licensee) submitted a request for an amendment to the St. Lucie Unit 2 Technical Specifications (TS). The requested amendment would revise the TS in three areas. First, the amendment would revise TS 3.4.7, Chemistry, to eliminate the need for sampling of reactor coolant system chemistry in the defueled condition. Second, the amendment would revise TS 5.6.1.a.1, Criticality, to reflect the total uncertainty associated with the unborated criticality analysis previously approved by Nuclear Regulatory Commission (NRC). And third, the amendment would revise TS 6.5.2.9.d, Technical Review Responsibilities, to be consistent with the quality assurance process previously approved by NRC.

Our discussion and evaluation of the licensee's request is presented below. In addition, the proposed change to TS 3.4.7, as discussed above, would be consistent with the corresponding TS for St. Lucie Unit 1.

2.0 DISCUSSION

2.1 TS Section 3.4.7, Chemistry

The current St. Lucie Unit 2 TS 3.4.7 requires personnel to sample the Reactor Coolant System (RCS) water "At all times," which requires sampling RCS water for dissolved oxygen, chloride, and fluoride concentrations at least three times every 7 days, except for times when the RCS is at or below 250°F, when dissolved oxygen requirements are waived. Since the requirement for sampling RCS chemistry is applicable at all times, sampling for chloride and fluoride must still occur when the reactor is in the defueled condition. The defueled condition does not have an associated mode number, but can be entered from Mode 6, Refueling, by removing all nuclear fuel from the reactor core. To perform sampling in the defueled condition, when systems necessary to circulate reactor coolant are not required by TS to be operable, licensee personnel must manually enter the reactor vessel area and manually dip a sample container into the reactor coolant from the upper refueling cavity. This method of sampling results in radiation exposure to personnel.

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With regard to FPL's proposed amendment to TS 3.4.7, the currently required sampling for chloride and fluoride concentrations in reactor coolant would be suspended when the reactor is defueled. As soon as nuclear fuel is returned to the reactor vessel, Mode 6, Refueling, is entered and the sampling requirements of TS 3.4.7 would resume at the currently required frequency under the proposed amendment.

FPL proposes to change the applicability of limiting condition for operation in TS 3.4.7, Chemistry, from "At all times," to "All MODES," and the action statement which currently reads, "At All Other Times," to "MODES 5 and 6." No other changes to this section are proposed.

The sampling requirements and steady state and transient limits for RCS chemistry parameters are provided in the current TS to provide corrosion protection to the RCS materials, such as fuel cladding, stainless steel piping, and clad stainless steel componentry. The corrosion rate of these components are time and temperature dependent. The present limits require sampling for dissolved oxygen, chlorides, and fluorides when the RCS is at or above 250°F. Since the corrosive effect of dissolved oxygen is reduced substantially below 250°F, sampling for dissolved oxygen is not required in Modes 5 and 6, but is required for chlorides and fluorides. A large addition of contaminated water would have to be added to the RCS, in the defueled condition in order to change the chloride or fluoride concentrations significantly beyond the levels measured in Mode 6. For the case of the defueled condition it is the staff's view that it is highly unlikely that the condition of the reactor coolant would change significantly such that the RCS material corrosion rate would be affected. Therefore, on the basis of keeping personnel exposure as low as is reasonably achievable (ALARA), and the unlikelihood that reactor coolant chloride or fluoride concentrations would vary significantly in the defueled condition from the conditions last sampled in Mode 6, the staff finds that the change proposed by the licensee for TS 3.4.7 is acceptable.

2.2 TS Section 5.6.1, Criticality

This section discusses the total uncertainties used in fuel storage criticality design and operation. FPL proposes to change the current total uncertainties listed in TS 5.6.1.a.1. TS 5.6.1.a.1 currently reads as follows:

A k_{eff} equivalent to less than or equal to 0.95 when flooded with unborated water, which includes a conservative allowance of 0.024 Δk_{eff} for Total Uncertainty.

FPL's amendment request would change TS 5.6.1.a.1 to read as follows:

A k_{eff} equivalent to less than or equal to 0.95 when flooded with unborated water, which includes a conservative allowance of 0.024 Δk_{eff} (Region I) and 0.017 Δk_{eff} (Region II) for Total Uncertainty.

The values for Total Uncertainty, 0.024 Δk_{eff} for Region I and 0.017 Δk_{eff} for Region II, were approved by NRC Safety Evaluation, dated October 16, 1984, associated with Amendment No. 7 for St. Lucie Unit 2. In that Safety Evaluation, the staff concluded that these uncertainties were appropriately determined at the 95/95 probability/confidence level, as recommended in Enclosure No. 1, entitled "OT Position for Review and Acceptance of Spent Fuel Storage and

Handling Applications," to the NRC letter to all power reactor licensees from B. K. Grimes, dated April 14, 1978. Therefore, the staff finds this proposed change to TS 5.6.1.a.1 acceptable.

2.3 TS Section 6.5.2.9, Technical Review Responsibilities

This section discusses the technical review responsibilities of the Company Nuclear Review Board (CNRB). FPL proposes to amend TS Section 6.5.2.9.d to add plant management to the list of persons receiving the recommendations of the CNRB. TS 6.5.2.9.d currently reads as follows:

Making detailed recommendations through the Chairman - CNRB for revising procedures, equipment modifications or other means of improving nuclear safety and plant reliability.

The licensee's amendment request would change TS 6.5.2.9.d to read as follows:

Making detailed recommendations to the Chairman-CNRB and plant management for revising procedures, equipment modifications or other means of improving nuclear safety and plant reliability.

TS 6.5.2.9 describes the scope of technical review responsibilities under the cognizance of the CNRB. This TS requirement was established as part of a TS amendment, approved December 22, 1994, which transferred activities previously performed by the Independent Safety Engineering Group (ISEG) to the Quality Assurance Department.

TS 6.5.2.9.d currently requires that recommendations resulting from these reviews be reported through the CNRB Chairman. The licensee proposes to revise TS 6.5.2.9.d such that these recommendations be reported to the CNRB Chairman and to plant management.

NUREG-0737, Section I.B.1.2 states that the ISEG function is to advise utility management on the overall quality and safety of plant operations. Under the proposed amendment the ISEG function would continue to make recommendations to the CNRB, while concurrently making these recommendations available to plant management.

The staff has reviewed the proposed parallel reporting process and has determined that the change is administrative in nature and does not affect the effectiveness of the CNRB's role as an independent review group, as described by Section 4.3 of ANSI 18.7-1976.

The staff concludes that the proposed change is acceptable.

3.0 STATE CONSULTATION

Based upon a letter dated March 8, 1991, from the State of Florida to Deborah A. Miller, NRC, the State of Florida has no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes an administrative requirement and changes requirements with respect to installation or use of a facility component located within the restricted area as defined in Part 20. 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 not 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 (63 FR 17224). Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and (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.

5.0 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: William C. Gleaves

Dated: **August 18, 1998**