

December 22, 1986

DMB 016

Docket No. 50-335

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Mr. C. O. Woody  
Vice President  
Nuclear Energy Department  
Florida Power & Light Company  
P. O. Box 14000  
Juno Beach, Florida 33408

Dear Mr. Woody:

The Commission has issued the enclosed Amendment No. 76 to Facility Operating License No. DPR-67 for the St. Lucie Plant, Unit No. 1. This amendment consists of changes to the Technical Specifications in response to your application dated October 17, 1986.

This amendment permits a fuel rod to have a nominal active fuel length between 134.1 and 136.7 inches. In addition, individual fuel assemblies shall contain fuel rods of the same nominal active fuel length.

A copy of the related Safety Evaluation is also enclosed. The notice of issuance will be included in the Commission's next bi-weekly Federal Register notice.

Sincerely,

*Original signed by*

E. G. Tourigny, Project Manager  
PWR Project Directorate #8  
Division of PWR Licensing-B

Enclosures:

1. Amendment No. 76 to DPR-67
2. Safety Evaluation

cc w/enclosures:

See next page

\* See previous concurrence page.

\* PBD#8  
PMKreutzer  
/ /86

\* PBD#8 *ET*  
ETourigny:jch  
12/18/86

RSB *ADOCK*  
CThomas  
12/18/86

\* OGC  
/ /86

*AT*  
PBD#8  
AThadani  
12/22/86

*Change as requested  
by OGC made  
ET*

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P PDR

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See next page

*No legal objection issued on additional words to SR*

PBD#8  
PMKreutzer  
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ETourigny:jch  
12/14/86

~~FOB~~  
~~1/1/86~~

OGC  
12/11/86

PBD#8  
ATHadani  
1/1/86

Mr. C. O. Woody  
Florida Power & Light Company

St. Lucie Plant

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

FLORIDA POWER & LIGHT COMPANY

DOCKET NO. 50-335

ST. LUCIE PLANT UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 76  
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 17, 1986 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. DPR-67 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. 76, 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 the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Ashok C. Thadani, Director  
PWR Project Directorate #8  
Division of PWR Licensing-B

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: December 22, 1986

ATTACHMENT TO LICENSE AMENDMENT NO. 76  
TO FACILITY OPERATING LICENSE NO. DPR-67  
DOCKET NO. 50-335

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

Remove Page

5-4

Insert Page

5-4

FIGURE 5.1-2  
(Deleted)

## DESIGN FEATURES

### 5.2.1.2 SHIELD BUILDING

- a. Minimum annular space = 4 feet.
- b. Annulus nominal volume = 543,000 cubic feet.
- c. Nominal outside height (measured from top of foundation base to the top of the dome) = 230.5 feet.
- d. Nominal inside diameter = 148 feet.
- e. Cylinder wall minimum thickness = 3 feet.
- f. Dome minimum thickness = 2.5 feet.
- g. Dome inside radius = 112 feet.

### DESIGN PRESSURE AND TEMPERATURE

5.2.2 The containment vessel is designed and shall be maintained for a maximum internal pressure of 44 psig and a temperature of 264°F.

### PENETRATIONS

5.2.3 Penetrations through the containment structure are designed and shall be maintained in accordance with the original design provisions contained in Sections 3.8.2.1.10 and 6.2.4 of the FSAR with allowance for normal degradation pursuant to the applicable Surveillance Requirements.

### 5.3 REACTOR CORE

#### FUEL ASSEMBLIES

5.3.1 The reactor core shall contain 217 fuel assemblies with each fuel assembly containing a maximum of 176 fuel rods clad with Zircaloy-4. Each fuel rod shall have a nominal active fuel length of between 134.1 and 136.7 inches and contain a maximum total weight of 2250 grams uranium. Individual fuel assemblies shall contain fuel rods of the same nominal active fuel length. The initial core loading shall have a maximum enrichment of 2.83 weight percent U-235. Reload fuel shall be similar in physical design to the initial core loading.

5.3.2 Except for special test as authorized by the NRC, all fuel assemblies under control element assemblies shall be sleeved with a sleeve design previously approved by the NRC.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 76

TO FACILITY OPERATING LICENSE NO. DPR-67

FLORIDA POWER & LIGHT COMPANY

ST. LUCIE PLANT, UNIT NO. 1

DOCKET NO. 50-335

INTRODUCTION

By letter dated October 17, 1986, the Florida Power and Light Company (the licensee) made application to amend the Technical Specifications (TS's) of the St. Lucie Unit 1 plant. The proposed amendment changes the nominal active fuel length for fuel assemblies specified in T.S. 5.3.1 to permit the loading of fuel with an active length of between 134.1 and 136.7 inches. This change to the active fuel length will permit the licensee to use a fuel rod design that is more resistant to fretting type failures than the present design. The staff has reviewed the proposed amendment and prepared the following evaluation.

EVALUATION

The fuel used in St. Lucie Unit 1 in Cycles 1 through 7 has a nominal active length of 136.7 inches. The proposed change would permit the use of a slightly shorter active fuel length of 134.1 inches. This slightly shorter active fuel length would allow the use of a longer solid Zircaloy end cap. The overall fuel rod length, however, would remain the same. The longer Zircaloy end cap and its extension above the lower grid spring contact point would offer increased protection against fuel clad defects caused by fretting at the lower end of the fuel rod.

T.S. 5.3.1 appears in the Design Features section of the TS's and concerns fuel assemblies. The purpose of this TS is to provide the nominal design characteristics of fuel assemblies. The licensee has quantified the effect of the proposed change in the active fuel length on the core physics parameters by performing calculations with two three-dimensional models that were specifically constructed for the evaluation. One of the models used fuel of the current, longer active fuel length while the other model used fuel with both the short and standard sized active fuel rods. Differences in the calculations were then attributed to the effect of the different active fuel lengths in the two models. The following effects on the reactor core physics parameters were noted: (1) there is a small increase in the core

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average linear heat generation rate; (2) the total peaking factor increased by less than 1%; (3) the axial peaking factor increased by less than 1%; (4) the relative assembly power was unaffected by the proposed change; and (5) the integrated radial peaking factor and radial planar peaking factors were negligibly affected. Thus, the proposed change does not significantly affect the reactor core physics parameters and, consequently, the safety analysis including 10 CFR Part 50, Appendix K requirements. The effects of the fuel length change on core power peaking and power distributions are small enough that they can be accommodated within existing design margins. In addition, the licensee plans to account for the changes to the power distributions in the cycle specific physics inputs to the safety analysis.

Since the shorter active fuel length will have an insignificant effect on the reactor core physics parameters and since the safety analysis for each reload cycle will include the effects on reactor physics inputs, the staff concludes that the proposed change to T.S. 5.3.1 for St. Lucie Unit 1 is acceptable.

#### ENVIRONMENTAL CONSIDERATION

This amendment involves a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The 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 published a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, the 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 the amendment.

#### CONCLUSION

We have 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, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: December 22, 1986

Principal Contributor: D. Fieno