July 18, 1988

Docket Nos. 50-250
and 50-251

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Mr. W. F. Conway
Senior Vice President-Nuclear
Nuclear Energy Department
Florida Power and Light Company
Post Office Box 14000
Juno Beach, Florida 33408-0420

Dear Mr. Conway:

SUBJECT: TURKEY POINT UNITS 3 AND 4 - ISSUANCE OF AMENDMENTS RE: REFUELING SHUTDOWN MARGIN (TAC NOS. 64520 AND 64521)

The Commission has issued the enclosed Amendment No. 132 to Facility Operating License No. DPR-31 and Amendment No. 126 to Facility Operating License No. DPR-41 for the Turkey Point Plant, Units Nos. 3 and 4, respectively. The amendments consist of changes to the Technical Specifications in response to your application transmitted by letter dated January 16, 1987, as superseded April 5, 1988.

These amendments revise the refueling shutdown margin from 10 to 5 percent (delta k)/k, correct a typographical error and make an administrative change to the Turkey Point Technical Specifications.

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,

/s/

Gordon E. Edison, Sr. Project Manager
Project Directorate II-2
Division of Reactor Projects-I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 132 to DPR-31
2. Amendment No. 126 to DPR-41
3. Safety Evaluation

cc w/enclosures:
See next page

LA:PDII-2	PM:PDII-2	PM:PDII-2	SRXB	D:PDII-2	OGC
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6/17/88	6/21/88	6/21/88	6/28/88	7/7/88	6/30/88

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Florida Power and Light Company

Turkey Point Plant

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

FLORIDA POWER AND LIGHT COMPANY

DOCKET NO. 50-250

TURKEY POINT PLANT UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 132
License No. DPR-31

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

   A. The application for amendment by Florida Power and Light Company (the licensee) dated January 16, 1987, as superseded April 5, 1988, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations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, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR-31 is hereby amended to read as follows:

   (B) Technical Specifications and Environmental Protection Plan

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 132, are hereby incorporated in the license. The Environmental Protection Plan contained in Appendix B is hereby incorporated into the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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

FOR THE NUCLEAR REGULATORY COMMISSION

Herbert N. Berkow

Herbert N. Berkow, Director
Project Directorate II-2
Division of Reactor Projects-I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 18, 1988

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

FLORIDA POWER AND LIGHT COMPANY

DOCKET NO. 50-251

TURKEY POINT PLANT UNIT NO. 4

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 126
License No. DPR-41

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

   A. The application for amendment by Florida Power and Light Company (the licensee) dated January 16, 1987, as superseded April 5, 1988, 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, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR-41 is hereby amended to read as follows:

   (B) Technical Specifications and Environmental Protection Plan

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 126, are hereby incorporated in the license. The Environmental Protection Plan contained in Appendix B is hereby incorporated into the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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

FOR THE NUCLEAR REGULATORY COMMISSION

Herbert N. Berkow

Herbert N. Berkow, Director
Project Directorate II-2
Division of Reactor Projects-I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 18, 1988

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 132 FACILITY OPERATING LICENSE NO. DPR-31

AMENDMENT NO. 126 FACILITY OPERATING LICENSE NO. DPR-41

DOCKET NOS. 50-250 AND 50-251

Revise Appendix A as follows:

Remove Pages	Insert Pages
Table 1.1	Table 1.1
3.10-4	3.10-4
Table 4.18-1	Table 4.18-1
B3.10-2	B3.10-2

TABLE 1.1
OPERATIONAL MODES***

Mode	Reactivity Condition, K_{eff}	% Rated Thermal Power*	Average Coolant Temperature
1. Power Operation	≥ 0.99	> 5%	$\geq 350°F$
2. Start-up	≥ 0.99	$\leq 5\%$	$\geq 350°F$
3. Hot Standby	< 0.99	0	$\geq 350°F$
4. Hot Shutdown	< 0.99	0	$350°F > T_{avg} > 200°F$
5. Cold Shutdown	< 0.99	0	$\leq 200°F$
6. Refueling**	≤ 0.95	0	$\leq 140°F$

* Excluding decay heat.

** Fuel in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed.

*** This table shall only be applicable to those specifications that have been modified to reflect Operational Modes in the Applicability section of the LCOs, except as specified in Section 3.0.1 (Note).

a) A k_{eff} of 0.95 or less, or

b) A boron concentration of greater than or equal to 1950 ppm.**

APPLICABILITY: MODE 6*

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or positive reactivity changes and initiate and continue boration at greater than or equal to 45 gpm of a solution containing greater than or equal to 1950 ppm boron or its equivalent until k_{eff} is reduced to less than or equal to 0.95 or the boron concentration is restored to greater than or equal to 1950 ppm, whichever is the more restrictive.

*The reactor shall be maintained in MODE 6 whenever fuel is in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed.

**The boron concentration of the Reactor Coolant System and the refueling canal shall be determined by chemical analysis at least once per 72 hours.

3.10.9 CRANE TRAVEL-SPENT FUEL STORAGE AREAS

HEAVY LOADS shall be prohibited from travel over fuel assemblies in the storage pool.*

*Exception may be taken for the temporary construction crane to be used for the re-rack operation which may be carried over irradiated fuel to facilitate installation of the crane. Lift rigs which meet the design and operational requirements of NUREG 0612 "Control of Heavy Loads at Nuclear Power Plants" will be used while performing this installation.

APPLICABILITY: With fuel assemblies in the storage pool.

ACTION:

a) With the requirements of the above specification not satisfied, place the crane load in a safe condition.

b) The provisions of Specification 3.0.1 and 3.0.4 are not applicable.

TABLE 4.18-1

MINIMUM FREQUENCIES FOR SAFETY RELATED SYSTEMS FLOWPATH VERIFICATIONS

	SYSTEM DESCRIPTION (NOTE 1)	FREQUENCY	APPLICABILITY MODE
1.	High Head Safety Injection	M,P	1,2,3
2.	Low Head Safety Injection	M,P	1,2,3
3.	Auxiliary Feedwater	M,P	1,2,3 (Note 2)
4.	Containment Spray	M,P	1,2,3,4
5.	Emergency Diesel Generators	M	1,2,3,4 (Note 2)
6.	Component Cooling Water	M,P	1,2,3,4
7.	Intake Cooling Water	M,P	1,2,3,4
8.	Boric Acid Flowpath to the Core	M	1,2,3,4,5,6
9.	Post-accident Containment Ventilation	M,P	1,2,3 (Note 2)
10.	In-plant AC Electrical Distribution	M,P	1,2,3,4
11.	Post-accident Hydrogen Monitoring	M	1,2,3,4,5,6 (Note 2)
12.	Post-accident Sampling	M	1,2,3,4,5,6 (Note 2)
13.	Fire Suppression Water System	M	1,2,3,4,5,6 (Note 2)

Frequency:

M - Monthly
P - Within one surveillance interval prior to entering applicable MODE.

NOTES:

1. Refer to Bases T.S. B4.18 for definitions of systems required flowpaths.
2. These are shared systems. For this reason, with either reactor being within the applicable modes of operation, the flowpath verification shall be performed for that unit at the designated frequency.

B3.10.7 RESIDUAL HEAT REMOVAL AND COOLANT CIRCULATION

The requirement that at least one residual heat removal (RHR) loop be in operation ensures that: (1) sufficient cooling capacity is available to remove decay heat and maintain the water in the reactor vessel below 140°F as required during the REFUELING MODE, and (2) sufficient coolant circulation is maintained through the core to minimize the effect of a boron dilution incident and prevent boron stratification.

The requirement to have two RHR loops operable when there is less than 23 feet of water above the reactor vessel flange ensures that a single failure of the operating RHR loop will not result in a complete loss of residual heat removal capability. With the reactor vessel head removed and at least 23 feet of water above the reactor pressure vessel flange, a large heat sink is available for core cooling. Thus, in the event of a failure of the operating RHR loop, adequate time is provided to initiate emergency procedures to cool the core.

B3.10.8 BORON CONCENTRATION

The limitations on reactivity conditions during REFUELING ensure that: (1) the reactor will remain subcritical during CORE ALTERATIONS, and (2) a boron concentration is maintained for reactivity control in the water volume having direct access to the reactor vessel. These limitations are consistent with the initial conditions assumed for the boron dilution incident in the safety analyses.

B3.10.9 CRANE TRAVEL - SPENT FUEL STORAGE AREAS

The restriction on movement of HEAVY LOADS over other fuel assemblies* in the storage pool ensures that in the event this load is dropped: (1) the activity release will be limited to that contained in a single fuel assembly, and (2) any possible distortion of fuel in the storage racks will not result in a critical array. This assumption is consistent with the activity release assumed in the safety analyses.

*Exception may be taken for the temporary construction crane to be used for the re-rack operation which may be carried over irradiated fuel to facilitate installation of the crane. Lift rigs which meet the design and operational requirements of NUREG 0612 "Control of Heavy Loads at Nuclear Power Plants" will be used while performing this installation.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 132 AND 126

TO FACILITY OPERATING LICENSE NOS. DPR-31 AND DPR-41

FLORIDA POWER AND LIGHT COMPANY

TURKEY POINT PLANT UNIT NOS. 3 AND 4

DOCKET NOS. 50-250 AND 50-251

BACKGROUND

By letter dated January 16, 1987, Florida Power and Light Company (FPL, the licensee) initially proposed changes to the Technical Specifications (TS) for the Turkey Point Plant Units 3 and 4, which are the subject of this Safety Evaluation (SE). Following an NRC staff request for additional information, FPL resubmitted the request by letter dated April 5, 1988. The proposed changes would revise the refueling shutdown margin from 10 to 5 percent (delta k)/k, correct a typographical error and make an administrative modification. The changes, which are intended to bring the TS into closer conformance with the Westinghouse Standard Technical Specifications (STS), will simplify refueling activities and improve the consistency of the TS for Units 3 and 4.

DISCUSSION

The proposed changes would modify the Turkey Point TS Section 3.10.8, Bases B3.10.8 and Tables 1.1 and 4.18-1 for Unit 3 and Unit 4.

Currently, the Turkey Point TS require that during refueling, the boron concentration of all filled portions of the Reactor Coolant System (RCS) and refueling canal shall be sufficient to ensure that either the effective multiplication factor (k_{eff}) is 0.90 or less or the boron concentration is greater than or equal to 1950 ppm, whichever is more restrictive. The proposed change would allow a refueling shutdown margin of 5 percent (delta k)/k, raising the maximum k_{eff} from 0.90 to 0.95, and keep the refueling boron concentration requirement of greater than or equal to 1950 ppm.

The licensee has calculated the time to criticality in the refueling mode (Mode 6) for a k_{eff} of 0.95 following initiation of a chemical and volume control system malfunction (i.e., a boron dilution during refueling accident), assuming a minimum RCS water volume, a maximum dilution flow rate of 230 gpm (which is conservative since normally only one charging pump moving 77 gpm is operating during refueling, not all three pumps), an initial boron concentration of 1950 ppm (i.e., the minimum allowable by the TS), and a critical

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refueling boron concentration of 1450 ppm (i.e., a value which was chosen to be bounding for future cycles). The calculation yielded a time to criticality, i.e., a time to detect and terminate the dilution event before criticality is reached, of 30.7 minutes.

As discussed in Standard Review Plan (SRP) Section 9.1.2, the NRC staff finds a maximum k_{eff} for a spent fuel pool of 0.95 acceptable. Furthermore, the Westinghouse STS section dealing with boron concentration during refueling recommends a k_{eff} of 0.95 or less. Improvements in calculational methods over the years have reduced uncertainties allowing for the reduction in conservatism associated with the accepted decrease in the shutdown margin from 10 to 5 percent (delta k)/k. It should be noted that in calculating k_{eff} in accordance with SRP Section 9.1.2, a total uncertainty factor is determined by the licensee and added to the calculated k_{eff} to define the maximum possible k_{eff}. Also, the instrumentation, alarms, and annunciators at Units 3 and 4 are adequate to provide the control room operators indication of a dilution event allowing sufficient time to mitigate the event, i.e., terminate the dilution event before criticality is reached. For these reasons the staff finds the proposed increase in the maximum k_{eff} to 0.95 to be acceptable.

The proposed change in k_{eff} would require modifying Table 1.1, Section 3.10.8 and Bases B3.10.8 of the TS for Unit 3 and Unit 4.

The amendments also propose another change to Table 1.1 and changes to Table 4.18-1 for Units 3 and 4. The other change to Table 1.1 is to correct a typographical error, changing the Mode 5 average coolant temperature limit from " " to " or =" 200 degrees F. The changes in Table 4.18-1 would bring it into conformance with Table 1.1, i.e., for each unit, the designations for the operational modes as defined in Table 1.1 would be used in Table 4.18-1. The staff finds these changes acceptable.

SUMMARY

The modifications to the Technical Specifications proposed in these amendments by FPL, for the the Turkey Point Plant, Units 3 and 4, concerning modifications to the refueling shutdown margin and the minor administrative changes, are judged by the NRC staff to be acceptable.

ENVIRONMENTAL CONSIDERATION

These amendments involve changes in the installation or use of the facilities components located within the restricted areas as defined in 10 CFR Part 20. The staff has determined that these 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 these amendments involve no significant hazards consideration and there has been no public comment on such finding. 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.

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

Dated: July 18, 1988

Principal Contributor:

John O. Schiffgens