June 27, 1985

Docket Nos. 50-250
and 50-251

Distribution

Docket file	NRC PDR
L PDR	ORB#1 RDG
HThompson	CParrish
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BGrimes	JPartlow
TBarnhart (8)	WJones
MVirgilio	ACRS (10)
OPA, CMiles	RDiggs
Gray file (4)	MDunenfeld

Mr. J. W. Williams, Jr., Group Vice President
Nuclear Energy Department
Florida Power and Light Company
Post Office Box 14000
Juno Beach, Florida 33408

Dear Mr. Williams:

The Commission has issued the enclosed Amendment No. 115 to Facility Operating License No. DPR-31 and Amendment No. 109 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 February 15, 1985 and supplemented on April 17 and May 8, 1985.

These amendments revise the Technical Specifications (TS) relating to the Moderator Temperature Coefficient (MTC). The current TS allow operation with a positive MTC of $+5 \times 10^{-5}$ delta k/k/°F (change in reactivity per degree Fahrenheit) from zero to 70 percent of rated power and requires a step change at 70 percent of rated power to an MTC of 0 delta k/k/°F. The TS change allows a required linear rampdown from the allowable MTC of $+5 \times 10^{-5}$ delta k/k/°F to zero between 70 percent and 100 percent of rated power in place of the current requirement for a step change at 70 percent of rated power. The change will remove the restrictive requirement for a step change by requiring the linear rampdown.

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

Sincerely,

/s/DGMcDonald

Daniel G. McDonald, Jr., Project Manager
Operating Reactors Branch #1
Division of Licensing

Enclosures:
1. Amendment No. 115 to DPR-31
2. Amendment No. 109 to DPR-41
3. Safety Evaluation

cc: w/enclosures
See next page

*SEE PREVIOUS WHITE FOR CONCURRENCE

ORB#1:DL*	ORB#1:DL*	BC-ORB#1:DL*	OELD*	AD:ORB:DL
CParrish	DMcDonald/ts	SVarga		GLainas
06/14/85	06/14/85	06/17/85	06/19/85	06/21/85

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J. W. Williams, Jr.
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. 115
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 February 15, 1985, as supplemented on April 17 and May 8, 1985, 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-31 is hereby amended to read as follows:

(B) Technical Specifications

The Technical Specifications contained in Appendix A and B, as revised through Amendment No. 115, 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 issuance and shall be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Steven A. Varga, Chief
Operating Reactors Branch #1
Division of Licensing

Attachment:
Changes to the Technical Specifications

Date of Issuance: June 27, 1985

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. 109
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 February 15, 1985, as supplemented on April 17 and May 8, 1985, 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

The Technical Specifications contained in Appendix A and B, as revised through Amendment No. 109, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION

Steven A. Varga, Chief
Operating Reactors Branch #1
Division of Licensing

Attachment:
Changes to the Technical Specifications

Date of Issuance: June 27, 1985

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 115 FACILITY OPERATING LICENSE NO. DPR-31

AMENDMENT NO. 109 FACILITY OPERATING LICENSE NO. DPR-41

DOCKET NO. 50-250 AND 50-251

Revise Appendix A as follows:

Remove Pages	Insert Pages
3.1-2a	3.1-2a
B3.1-3	B3.1-3

MODERATOR TEMPERATURE COEFFICIENT

3.1.2.1 The moderator temperature coefficient (MTC) shall be:

a) **Less positive than or equal to 5.0×10^{-5} $\Delta k/k/^{o}F$** for all rods withdrawn, beginning of the cycle life (BOL), hot zero THERMAL POWER (HZP) conditions; and

b) **Less positive than or equal to 5.0×10^{-5} $\Delta k/k/^{o}F$** from HZP to 70% RATED THERMAL POWER condition; and

c) **Less positive than or equal to 5.0×10^{-5} $\Delta k/k/^{o}F$** from 70% RATED THERMAL POWER decreasing linearly to less positive than or equal to 0 $\Delta k/k/^{o}F$ at 100% RATED THERMAL POWER condition; and

d) **Less negative than -3.5×10^{-4} $\Delta k/k/^{o}F$** for the all rods withdrawn, end of cycle life (EOL), RATED THERMAL POWER condition.

APPLICABILITY: Specification 3.1.2.1a, b, and c - MODES 1 and 2* only**.
Specification 3.1.2.1d - MODES 1, 2, and 3 only**.

ACTION:

a) With the MTC more positive than the limits of Specifications 3.1.2.1a, b, or c above, operation in MODES 1 and 2 may proceed provided:

1) Control rod withdrawal limits are established and maintained sufficient to restore the MTC to less positive or equal to limits described in 3.1.2.1a, b, and c above **within 24 hours or be in HOT STANDBY within the next 6 hours.** These withdrawal limits shall be in addition to the insertion limits of specification 3.2.1,

2) The control rods are maintained within the withdrawal limits established above until a subsequent calculation verifies that the MTC has been restored to within its limit for the all rods withdrawn condition; and

3) A Special Report is prepared and submitted to the Commission pursuant to Specification 6.9.3, **within 10 days,** describing the value of the measured MTC, the interim control rod withdrawal limits, and the predicted average core burnup necessary for restoring the MTC to within its limit for the all rods withdrawn condition.

b) With the MTC more negative than the limit of Specification 3.1.2.1d above, **be in HOT SHUTDOWN within 12 hours.**

---

* With K_{eff} greater than or equal to 1.
** The above limits may be suspended during the performance of LOW POWER PHYSICS TESTS.

The reactor vessel materials have been tested to determine their initial RT_{NDT}. Adjusted reference temperatures, based upon the fluence and copper content of the material in question, are then determined. The heatup and cooldown limit curves include the shift in RT_{NDT} at the end of the service period shown on the heatup and cooldown curves.

The actual shift in NDTT of the vessel material will be established periodically during operation by removing and evaluating, in accordance with ASTM E185-73, reactor vessel material irradiation surveillance specimens installed near the inside wall of the reactor vessel in the core area. Since the neutron spectra at the irradiation samples has a definite relationship to the spectra at the vessel inside radius, the measured transition shift for a sample can be related with confidence to the adjacent section of the reactor vessel. The heatup and cooldown curves must be recalculated when the ΔRT_{NDT} determined from the surveillance capsule is different from the calculated ΔRT_{NDT} for the equivalent capsule radiation exposure.

The pressure-temperature limit lines shown for reactor criticality and for inservice leak and hydrostatic testing have been provided to assure compliance with the minimum temperature requirements of Appendix G to 10 CFR 50.

The number of reactor vessel irradiation surveillance specimens and the frequencies for removing and testing these specimens are provided in T.S. 4.20 to assure compliance with the requirements of Appendix H to 10 CFR Part 50.

The limitations imposed on pressurizer heatup and cooldown and spray water temperature differential are provided to assure that the pressurizer is operated within the design criteria assumed for the fatigue analysis performed in accordance with the ASME Code requirements.

B3.1.2.1 MODERATOR TEMPERATURE COEFFICIENT

The limitations on moderator temperature coefficient (MTC) are provided to ensure that the value of this coefficient remains within the limiting condition assumed in the FSAR accident and transient analyses.

The MTC values of this specification are applicable to a specific set of plant conditions; accordingly, verification of MTC values at conditions other than those explicitly stated will require extrapolation to those conditions in order to permit an accurate comparison.

The most negative MTC, value to the most positive moderator density coefficient (MDC), was obtained by incrementally correcting the MDC used in the FSAR analyses to nominal operating conditions. These corrections involved subtracting the incremental change in the MDC associated with a core condition of all rods inserted (most positive MDC) to an all rods withdrawn condition and, a conversion for the rate of change of moderator density with temperture at RATED THERMAL POWER conditions.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 115 TO FACILITY OPERATING LICENSE NO. DPR-31

AND AMENDMENT NO. 109 TO FACILITY OPERATING LICENSE NO. DPR-41

FLORIDA POWER AND LIGHT COMPANY

TURKEY POINT UNIT NOS. 3 AND 4

DOCKET NOS. 50-250 AND 50-251

I. INTRODUCTION

By letter dated February 15, 1985, Florida Power and Light Company requested a change to the Turkey Point Units 3 and 4 moderator temperature coefficient (MTC) Technical Specification. Supplemental information was provided in letters dated April 17, 1985 and May 8, 1985. The present Specification allows operation with a positive MTC of 5 pcm/°F up to 70 percent rated power, with a step change to zero above 70 percent rated power. The request proposes to substitute a linear rampdown of the allowable MTC from 5 pcm/°F at 70 percent rated power to 0 at 100 percent rated power.

The MTC is one of the components which affect reactivity in the core. A positive MTC results in an increase in reactivity with an increase in temperature and a negative MTC results in a decrease in reactivity with an increase in temperature. The proposed change will remove the restrictive requirement for a step change by requiring a linear rampdown which will result in more operational flexibility.

II. EVALUATION

The present Specification which allows operation with a MTC of 5 pcm/°F up to 70 percent rated power was approved initially in Amendment Nos. 76 and 70 (February 4, 1982) and Amendment Nos. 98 and 99 for the current fuel design (December 9, 1983) to License Nos. DPR-31 and DPR-41, respectively. These approvals evaluate reanalyses of:

A. Boron dilution
B. Control rod withdrawal from a subcritical condition
C. Uncontrolled control bank withdrawal at power
D. Loss of coolant flow
E. Locked rotor
F. Loss of external electrical load
G. Control rod ejection

The analyses of these events were performed with a 5 pcm/°F MTC at full power except that the coefficient in the control rod ejection analysis became less positive for temperatures higher than the full power nominal

average temperature. This is acceptable since the MTC is actually zero at full power in the present Specification and in the proposed change.

In addition, the previous evaluations agreed that the following transients did not require reanalysis:

A. RCCA misalignment/drop
B. Startup of an inactive RCS loop
C. Excessive heat removal due to feedwater system malfunction
D. Excessive load increase
E. Loss of normal feedwater, loss of offsite power
F. Rupture of a main steam pipe
G. Loss of coolant accident (LOCA)

Since the above analyses were found acceptable assuming a 5 pcm/°F MTC at full power, they remain acceptable for the proposed change, which, like the earlier changes, requires the MTC to be 0 at full power. There is only the qualification that the RCCA drop for a low worth rod is sensitive to a positive MTC. In a letter dated May 8, 1985 in support of the conclusions in the initial submittals, the licensee provided results of a 75 pcm rod (and a much higher worth dropped rod which produces the highest heat flux during the transient when the most negative MTC is used). For the 75 pcm dropped rod, an overtemperature-ΔT trip occurs. The results show DNB does not occur. The licensee also states that this conclusion remains true for a range of dropped rod worths. The May 8 submittal did not modify the Technical Specification changes initially proposed, but provided clarification to support the changes requested.

III. FINDINGS

In view of the previous approved analyses remaining applicable for the proposed change and the acceptable results for the dropped rod analysis, we find the proposed Technical Specification changes acceptable.

IV. 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 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 Sec 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.

V. 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: June 27, 1985

Principal Contributor:

M. Dunenfeld