

Docket Nos. 50-250
and 50-251

DISTRIBUTION
See attached sheet

10/12/88

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:
USE OF NATURAL URANIUM AXIAL BLANKETS AND REPLACEMENT
OF INDIVIDUAL FUEL RODS (TAC NOS. 67445 AND 67446)

The Commission has issued the enclosed Amendment No. to Facility Operating License No. DPR-31 and Amendment No. 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 11, 1988.

These amendments modify the description of the reactor core in the TS to provide for the replacement of individual fuel rods within fuel assemblies with stainless steel rods or vacant rod positions. These amendments also revise the TS to provide for the use of a natural uranium axial blanket in the core and to provide for the elimination of the use of part-length control rods. Please be advised that these amendments do not by themselves permit the core changes to be implemented. The core reload analysis report will need to address the changes and conclude they are acceptable and safe.

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,

151

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

8810170411 881012
PDR ADDCK 05000250
P PNU

Enclosures:

1. Amendment No. 133 to DPR-31
2. Amendment No. 127 to DPR-41
3. Safety Evaluation

cc w/enclosures:
See next page

*SEE PREVIOUS CONCURRENCE

LA:PD22*
DMiller
09/06/88

PM:PD22*
JSchiffgens
09/08/88

PM:PD22* *HEE*
GEdison
9/19/88

D:RDP-2
HBerlow
9/27/88

SRXB
WHodges
9/27/88

OGC-WF
myberg
10/13/88

DFOL
11
unsubmitted
revisions
C-P-1

Mr. W. F. Conway
Florida Power and Light Company

Turkey Point Plant

cc:

Harold F. Reis, Esquire
Newman and Holtzinger, P.C.
1615 L Street, N.W.
Washington, DC 20036

Administrator
Department of Environmental
Regulation
Power Plant Siting Section
State of Florida
2600 Blair Stone Road
Tallahassee, Florida 32301

Mr. Jack Shreve
Office of the Public Counsel
Room 4, Holland Building
Tallahassee, Florida 32304

Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
Suite 2900
101 Marietta Street
Atlanta, Georgia 30323

John T. Butler, Esquire
Steel, Hector and Davis
4000 Southeast Financial
Center
Miami, Florida 33131-2398

Attorney General
Department of Legal Affairs
The Capitol
Tallahassee, Florida 32304

Mr. J. Odom, Vice President
Turkey Point Nuclear Plant
Florida Power and Light Company
P.O. Box 029100
Miami, Florida 33102

Plant Manager
Turkey Point Nuclear Plant
Florida Power and Light Company
P.O. Box 029100
Miami, Florida 33102

County Manager of Metropolitan
Dade County
Miami, Florida 33130

Resident Inspector
U.S. Nuclear Regulatory Commission
Turkey Point Nuclear Generating Station
Post Office Box 57-1185
Miami, Florida 33257-1185

Jacob Daniel Nash
Office of Radiation Control
Department of Health and
Rehabilitative Services
1317 Winewood Blvd.
Tallahassee, Florida 32399-0700

Intergovernmental Coordination
and Review
Office of Planning & Budget
Executive Office of the Governor
The Capitol Building
Tallahassee, Florida 32301

AMENDMENT NO. 133 TO FACILITY OPERATING LICENSE NO. DPR-31-TURKEY POINT UNIT 3
AMENDMENT NO. 127 TO FACILITY OPERATING LICENSE NO. DPR-41-TURKEY POINT UNIT 4

DATED: October 12, 1988

~~Docket File~~

NRC & Local PDRs

PDII-2 Reading

S. Varga, 14/E/4

G. Lainas, 14/H/3

H. Berkow

D. Miller

G. Edison

OGC-WF

D. Hagan, 3302 MNBB

E. Jordan, 3302 MNBB

B. Grimes, 9/A/2

T. Barnhart(8), P1-137

Wanda Jones, P-130A

E. Butcher, 11/F/23

J. Schiffgens

ACRS (10)

GPA/PA

ARM/LFMB

Gray File

B. Wilson, R-II

cc: Plant Service list



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.133
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 11, 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.

8810170413 881012
PDR ADOCK 05000250
P PNU

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. , 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, 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: October 12, 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. 127
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 11, 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. , 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, 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: October 12, 1988

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 133 FACILITY OPERATING LICENSE NO. DPR-31

AMENDMENT NO. 127 FACILITY OPERATING LICENSE NO. DPR-41

DOCKET NOS. 50-250 AND 50-251

Revise Appendix A as follows:

Remove Pages

Insert Pages

5.2-1

5.2-1

6-19

6-19

5.2 REACTOR

REACTOR CORE

1. The core shall contain 157 fuel assemblies with each assembly nominally containing 204 fuel rods clad with Zircaloy-4, except that replacement of fuel rods by filler rods consisting of stainless steel, or by vacant rod positions, may be made in fuel assemblies if justified by cycle-specific reload analysis using NRC-approved methodology. The reactor core contains approximately 71 metric tons of uranium in the form of natural or slightly enriched uranium dioxide pellets. Each fuel rod shall have a nominal active length of 144 inches.
2. The average enrichment of the initial core is a nominal 2.50 weight percent of U-235. Three fuel enrichments are used in the initial core. The highest enrichment is a nominal 3.10 weight percent of U-235.
3. Reload fuel will be similar in design to the initial core.
4. Burnable poison rods are in the form of rod clusters which are located in vacant rod cluster control guide tubes, or integral to the fuel design and are used for reactivity and/or power distribution control.
5. There are 45 full-length RCC assemblies in the reactor core. The full-length RCC assemblies contain a 144 inch length of silver-indium-cadmium alloy clad with the stainless steel.

REACTOR COOLANT SYSTEM

1. The design of the Reactor Coolant System complies with the code requirements.
2. All piping, components and supporting structures of the Reactor Coolant System are designed to Class I requirements and have been designed to withstand:
 - a. The design seismic ground acceleration, 0.05g acting in the horizontal and 0.033g acting in the vertical planes simultaneously, with stress maintained within code allowable working stresses.
 - b. The maximum potential seismic ground acceleration, 0.15g, acting in the horizontal and 0.10g acting in the vertical directions simultaneously with no loss of function.
3. The nominal liquid volume of the Reactor Coolant System, at rated operating conditions, is 9088 cubic feet.

- l. If the power tilt in Technical Specification 3.2.6.h is not corrected to less than 2% within 24 hours and its design hot channel factors for rated power are not exceeded, a Special Report with an evaluation as to the cause of the discrepancy shall be submitted within 30 days. Reference T.S. 3.2.6.i(1).
- m. Following a normalization of the computed boron concentration as a function of burnup, if the difference between the observed and predicted boron concentration reached the equivalent of one percent in reactivity, a Special Report shall be submitted within 30 days. Reference T.S. 4.11.
- n. Reactor Vessel Level Monitoring System, Reference Table 3.5-5, Action Statements 8 and 9.
- o. Should more than 30 individual fuel rods in the core, or 10 fuel rods in any fuel assembly, be replaced per refueling, a Special Report discussing the rod replacements will be submitted to the Commission within 30 days after cycle startup. Reference T.S. 5.2.1.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 133 TO FACILITY OPERATING LICENSE NO. DPR-31
AND AMENDMENT NO. 127 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

BACKGROUND

By letter dated February 11, 1988, Florida Power and Light Company (FPL, the licensee) proposed changes to the Technical Specifications (TS) for the Turkey Point Plant, Units 3 and 4. The proposed changes would modify the description of the reactor core in the TS to allow the replacement of individual fuel rods within fuel assemblies with stainless steel rods or vacant rod positions. The changes would also allow the use of a natural uranium axial blanket in the core and disallow the use of part-length control rods.

During a phone call in September 1988, the licensee agreed to a TS provision concerning an additional special reporting requirement similar to those already listed in TS 6.9.3. This change did not substantially change the action noticed, or affect the initial determination published in the Federal Register on April 6, 1988.

DISCUSSION

The licensee's proposed changes would modify the Turkey Point Technical Specifications Sections 5.2.1 and 5.2.5 for Unit 3 and Unit 4 and delete a related footnote. The proposed revisions would allow, if justified by cycle-specific reload analyses using NRC-approved methodology, a) the replacement of fuel rods in fuel assemblies by stainless steel filler rods, or the removal of fuel rods with no replacement, and b) the use of a natural uranium axial blanket in the core.

The term "NRC-approved methodology" includes those methodologies acknowledged in the FSAR and applied in support of issuance of the original operating licenses for the Turkey Point Plant, Units 3 and 4. Additionally, it includes those subsequent methodologies which have been submitted to and accepted by the staff after the issuance of the Turkey Point operating licenses. As noted in NRC Generic Letter 83-11, "Licensee Qualifications for Performing Safety Analyses in Support of Licensing Actions," each licensee or vendor who intends to use a safety analysis methodology to support licensing actions must demonstrate their proficiency in using the methodology by submitting verification performed by

8810170415 881012
PDR ADOCK 05000250
P PNU

them, not others. Thus, methodologies approved by the NRC for a specific vendor may be used by that vendor in support of Turkey Point reload design and analysis; use of that methodology by other than that vendor does not constitute an "NRC-approved methodology" unless specifically authorized by the NRC.

With regard to the removal of fuel rods from the core, the proposed change permits the timely removal, during a refueling outage, of individual fuel rods which leak or are deemed likely to leak in the near future. This should improve the licensee's fuel performance program and tend to minimize occupational radiation exposure and plant radiological release. The staff will require that a provision be made to inform the staff by a Special Report if a relatively large number of fuel rods are replaced during a refueling. The provision states that should more than 30 fuel rods in the core or 10 fuel rods in any fuel assembly be replaced per refueling, a Special Report discussing the rod replacements will be submitted to the Commission within 30 days after cycle startup. The requirement for special reporting is similar to those in existing TS 6.9.3 and satisfies the NRC's request to be informed in the event a significant deviation from past fuel performance occurs (e.g., the past performance record for Unit 3 shows that during Cycle 8 refueling 40 rods were removed, 29 from one assembly, and during Cycle 10 refueling two rods were removed). The staff discussed this provision with the licensee by telephone, and the licensee has agreed to an additional modification to the TS in Section 6.9.3 to add item (o) to provide for a Special Report if needed. The NRC staff finds the licensee's proposed revision of TS 5.2.1 to allow for modification of fuel assembly composition to be adequate and acceptable provided item (o) is added to TS 6.9.3. The NRC has recently approved a similar provision for McGuire Nuclear Station, Units 1 and 2.

With regard to the use of axial blankets, the licensee expects to save several hundred thousand dollars per cycle by using fuel rods with natural uranium dioxide pellets at the ends in place of enriched pellets. Axial blankets reduce fast neutron flux in the blanket area, reducing neutron leakage from the ends of the core and improving uranium utilization. The resulting increase in power density of the enriched fuel and potential increases in core peaking factors would be among the items considered in the cycle-specific core design and safety evaluation to assure that design criteria and safety limits are satisfied. The application of this design feature would depend on NRC acceptance of the cycle-specific Reload Safety Evaluation (RSE) in which the licensee must demonstrate that the safety and operating limits specified elsewhere in the TS are met. For these reasons, the NRC staff finds the proposed revision of TS 5.2.1 to allow for the use of natural uranium dioxide pellets in the core to be adequate and acceptable. The NRC has accepted provisions for the use of axial blankets for R. E. Ginna Nuclear Plant and for Prairie Island Nuclear Generating Plant, Units 1 and 2.

The licensee will no longer use part-length control rods in the cores of Turkey Point Plant, Units 3 and 4. Hence, references to part-length control rods and the corresponding footnote have been deleted from Section 5.2.5.

SUMMARY

The staff finds that the proposed revisions to TS 5.2.1 and TS 5.2.5 do not result in any significant adverse change in the process for determining the adequacy of reload designs and associated safety analyses. The licensee will continue to justify each cycle-specific reload by analyses using NRC-approved methodology in order to demonstrate that existing design limits and safety analyses criteria are met in advance of cycle operation. The licensee will continue to keep the NRC informed in a timely manner regarding any significant adverse change in its fuel performance program in accordance with a new special reporting requirement in TS 6.9.3. Therefore, the modifications to the description of the reactor core proposed in these amendments submitted by FPL for the Turkey Point Plant, Units 3 and 4 are judged by the NRC staff to be adequate and 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: October 12, 1988

Principal Contributor:

John O. Schiffgens