

May 12, 1998

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

SUBJECT: TURKEY POINT UNITS 3 AND 4 - ISSUANCE OF AMENDMENTS REGARDING
THE USE OF FUEL WITH ZIRLO CLADDING (TAC NOS. MA0692 AND MA0693)

Dear Mr. Plunkett:

The Commission has issued the enclosed Amendment No. 196 to Facility Operating License No. DPR-31 and Amendment No. 190 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 dated January 9, 1998, as supplemented by letter dated April 20, 1998. The amendments permit the use of fuel with ZIRLO cladding.

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)

Kahtan N. Jabbour, Senior Project Manager
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket Nos. 50-250
and 50-251

Enclosures:

1. Amendment No. 196 to DPR-31
2. Amendment No. 190 to DPR-41
3. Safety Evaluation

cc w/enclosures:
See next page

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

cc:

M. S. Ross, Attorney
Florida Power & Light Company
P.O. Box 14000
Juno Beach, FL 33408-0420

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

Mr. Robert J. Hovey, Site
Vice President
Turkey Point Nuclear Plant
Florida Power and Light Company
9760 SW. 344th Street
Florida City, FL 33035

Armando Vidal
County Manager
Metropolitan Dade County
111 NW 1 Street, 29th Floor
Miami, Florida 33128

Senior Resident Inspector
Turkey Point Nuclear Generating
Station
U.S. Nuclear Regulatory Commission
P.O. Box 1448
Homestead, Florida 33090

Mr. Bill Passetti
Office of Radiation Control
Department of Health and
Rehabilitative Services
1317 Winewood Blvd.
Tallahassee, Florida 32399-0700

TURKEY POINT PLANT

Mr. Joe Myers, Director
Division of Emergency Preparedness
Department of Community Affairs
2740 Centerview Drive
Tallahassee, Florida 32399-2100

Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
61 Forsyth Street, SW., Suite 23T85
Atlanta, GA 30303-3415

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

Plant Manager
Turkey Point Nuclear Plant
Florida Power and Light Company
9760 SW. 344th Street
Florida City, FL 33035

Mr. H.N. Paduano, Manager
Licensing & Special Programs
Florida Power and Light Company
P.O. Box 14000
Juno Beach, Florida 33408-0420

Mr. Gary E. Hollinger
Licensing Manager
Turkey Point Nuclear Plant
9760 SW. 344th Street
Florida City, FL 33035

Mr. Robert P. Schin
U.S. Nuclear Regulatory Commission
61 Forsyth Street, SW., Suite 23T85
Atlanta, GA 30303-3415



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

FLORIDA POWER AND LIGHT COMPANY

DOCKET NO. 50-250

TURKEY POINT PLANT UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 196
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 9, 1998, and supplemented April 20, 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, 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. 196 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 its date of issuance and shall be implemented within 30 days.

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: May 12, 1998



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

FLORIDA POWER AND LIGHT COMPANY

DOCKET NO. 50-251

TURKEY POINT PLANT UNIT NO. 4

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 190
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 9, 1998, and supplemented April 20, 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.

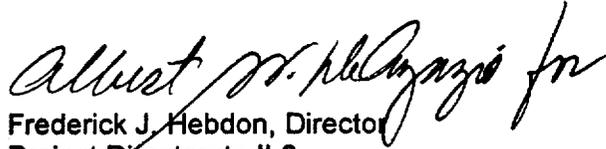
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR-41 is hereby amended to read as follows:

(B) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 190, 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 its date of issuance and shall be implemented within 30 days.

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: May 12, 1998

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO.196 FACILITY OPERATING LICENSE NO. DPR-31

AMENDMENT NO.190 FACILITY OPERATING LICENSE NO. DPR-41

DOCKET NOS. 50-250 AND 50-251

Revise Appendix A as follows:

Remove pages

5-4
6-22

Insert pages

5-4
6-22

DESIGN FEATURES

5.3 REACTOR CORE

FUEL ASSEMBLIES

5.3.1 The core shall contain 157 fuel assemblies with each fuel assembly containing 204 fuel rods clad with Zircaloy-4 or ZIRLO™, 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 fuel length of 144 inches. Should more than 30 individual rods in the core, or 10 fuel rods in any fuel assembly, be replaced per refueling, a Special Report discussing the rod replacements shall be submitted to the Commission within 30 days after cycle startup.

CONTROL ROD ASSEMBLIES

5.3.2 The core shall contain 45 full-length control rod assemblies. The full-length control rod assemblies shall contain a nominal 142 inches of absorber material. The absorber material shall be silver, indium, and cadmium. All control rods shall be clad with stainless steel tubing.

5.4 REACTOR COOLANT SYSTEM

DESIGN PRESSURE AND TEMPERATURE

5.4.1 The Reactor Coolant System is designed and shall be maintained:

- a. In accordance with the Code requirements specified in Section 4.1 of the FSAR, with allowance for normal degradation pursuant to the applicable Surveillance Requirements,
- b. For a pressure of 2485 psig \pm 1%, and
- c. For a temperature of 650°F, except for the pressurizer which is 680°F.

VOLUME

5.4.2 The nominal water and steam volume of the Reactor Coolant System is 9343 cubic feet at a nominal T_{avg} of 574.2°F.

5.5 METEOROLOGICAL TOWER LOCATION

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

ADMINISTRATIVE CONTROLS

3. WCAP-10054-P, Addendum 2, Revision 1 (proprietary), "Addendum to the Westinghouse Small Break ECCS Evaluation Model Using the NOTRUMP Code: Safety Injection in the Broken Loop and Improved Condensation Model", October 1995.*
4. WCAP-12945-P, "Westinghouse Code Qualification Document For Best Estimate LOCA Analysis," Volumes I-V, June 1996.**
5. USNRC Safety Evaluation Report, Letter from R. C. Jones (USNRC) to N. J. Liparulo (W), "Acceptance for Referencing of the Topical Report WCAP-12945(P) 'Westinghouse Code Qualification Document for Best Estimate Loss of Coolant Analysis,'" June 28, 1996.**
6. Letter dated June 13, 1996, from N. J. Liparulo (W) to Frank R. Orr (USNRC), "Re-Analysis Work Plans Using Final Best Estimate Methodology."***
7. WCAP-12610-P-A, "VANTAGE+ Fuel Assembly Reference Core Report," S. L. Davidson and T. L. Ryan, April 1995.

The analytical methods used to determine Rod Bank Insertion Limits and the All Rods Out position shall be those previously reviewed and approved by the NRC in:

1. WCAP-9272-P-A, "Westinghouse Reload Safety Evaluation Methodology," July 1985.

The ability to calculate the COLR nuclear design parameters are demonstrated in:

1. Florida Power & Light Company Topical Report NF-TR-95-01, "Nuclear Physics Methodology for Reload Design of Turkey Point & St. Lucie Nuclear Plants".

Topical Report NF-TR-95-01 was approved by the NRC for use by Florida Power & Light Company in:

1. Safety Evaluation by the Office of Nuclear Reactor Regulations Related to Amendment No. 174 to Facility Operating License DPR-31 and Amendment No. 168 to Facility Operating License DPR-41, Florida Power & Light Company Turkey Point Units 3 and 4, Docket Nos. 50-250 and 50-251.

The AFD, $F_Q(Z)$, $F_{\Delta H}$, $K(Z)$, and Rod Bank Insertion Limits shall be determined such that all applicable limits of the safety analyses are met. The CORE OPERATING LIMITS REPORT, including any mid-cycle revisions or supplements thereto, shall be provided upon issuance, for each reload cycle, to the NRC Document Control Desk with copies to the Regional Administrator and Resident Inspector, unless otherwise approved by the Commission.

SPECIAL REPORTS

6.9.2 Special reports shall be submitted to the Regional Administrator of the Regional Office of the NRC within the time period specified for each report as stated in the Specifications within Sections 3.0, 4.0, or 5.0.

*This reference is only to be used subsequent to NRC approval.

**As evaluated in NRC Safety Evaluation dated December 20, 1997.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 196 TO FACILITY OPERATING LICENSE NO. DPR-31
AND AMENDMENT NO. 190 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

1.0 INTRODUCTION

By letter dated January 9, 1998, and supplemented April 20, 1998, the Florida Power and Light Company (FPL or the licensee) proposed changes to Technical Specifications (TS) 5.3.1, "Reactor Core, Fuel Assemblies," and 6.9.1.7, "Core Operating Limits Report" for Turkey Point Plant, Units 3 and 4, to permit the use of fuel with ZIRLO cladding. The licensee also provided additional information regarding Turkey Point accident analyses considering the presence of ZIRLO-clad fuel in the cores. The clarifying information provided in the April 20, 1998, letter did not affect the proposed no significant hazards determination published in the Federal Register on February 25, 1998.

2.0 EVALUATION

10 CFR 50.46, 10 CFR Part 50 Appendix K, and 10 CFR 50.44 are applicable to fuel with ZIRLO cladding. The material properties of Zircaloy and ZIRLO are very similar. Therefore, the inclusion of VANTAGE + (ZIRLO) fuel in the Turkey Point cores is acceptable provided regulatory criteria are met.

2.1 LOCA Analyses

The U.S. Nuclear Regulatory Commission (NRC) staff safety evaluations (SEs) of WCAP-12610-P-A, regarding the analysis and methodologies applicable to VANTAGE + (ZIRLO) fuel assemblies and the large and small break loss-of-coolant accident (LOCA) analyses for ZIRLO fuel, approve the analyses and use of ZIRLO fuel in pressurized-water reactor plants. As discussed in the NRC SEs, WCAP-12610-P-A is acceptable for inclusion in plant licensing documentation, including the TSs and the core operating limit report for any plant using VANTAGE+ (ZIRLO) fuel. The NRC SE states that ZIRLO may be used as a co-resident with Zircaloy in LOCA analyses without penalty to either fuel type, because of the similarity of the material properties of the two cladding materials, provided that the fuels are of the same features and closely similar dimensions. In a letter of April 20, 1998, the licensee stated that the ZIRLO fuel assemblies were like the resident Zircaloy fuel assemblies except that the cladding material was ZIRLO rather than Zircaloy. The licensee assessed that the limiting post-LOCA peak cladding temperature (PCT) would be increased by 20-30°F, and the estimated PCT would continue to be below the 10 CFR 50.46(b)(1) criterion of 2200°F. The licensee will track the PCT

effects of the changes in both large break and small break LOCA analyses in the plants' 10 CFR 50.46 reports, in accordance with the requirements of 10 CFR 50.46 (a)(3)(ii). The staff has determined that new LOCA analyses were not needed because the change affected only the material properties, and there was no significant change in the geometry of the fuel assemblies.

2.2 NON-LOCA ACCIDENT ANALYSES

The licensee has evaluated the effect of the introduction of ZIRLO-clad fuel to the core as a co-resident with existing Zircaloy-clad fuel and concluded that the change will not impact the existing safety analysis limits. The staff has determined that new non-LOCA analyses were not needed because the change affected only the material properties; there was no significant change in the geometry of the fuel assemblies.

Based on its review as discussed in Section 2.0 above, the staff finds that the generic report is applicable to Turkey Point Units 3 and 4, and, therefore, the use of ZIRLO-clad fuel is acceptable.

3.0 TS REVISION

Based on the above discussion, the staff finds that the following proposed TS changes are acceptable.

In TS 5.3.1 "FUEL ASSEMBLIES," the phrase "or ZIRLO[™]" is added following Zircaloy-4 to authorize the proposed use of this fuel rod clad material.

In TS 6.9.1.7 "CORE OPERATING LIMITS REPORT," reference no. 7, WCAP-12610-P-A, "VANTAGE+ Fuel Assembly Reference Core Report," S. L. Davidson and T. L. Ryan, April 1995, is added as a methodology applicable to ZIRLO fuel. By letter dated January 22, 1998, the NRC staff corrected Page No. 6-22 of Turkey Point Units 3 and 4 TSs to add the issuance date of the NRC staff SE referred to by the second footnote on that page.

The staff finds the use of NRC approved methods will ensure that values for cycle-specific parameters are determined such that all applicable limits (e.g., cladding temperature and oxidation) of the safety analysis are met .

4.0 STATE CONSULTATION

Based upon the written notice of the proposed amendments, the Florida State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

These amendments involve a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the 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 the amendments involve no significant hazards consideration, and there has been no public comment on such finding (63 FR 9605). The amendments also change

recordkeeping and reporting requirements. Accordingly, these amendments meet 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 the amendments.

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

Principle Contributor: Frank R. Orr

Date: May 12, 1998