August 20, 2004

Mr. J. A. Stall
Senior Vice President, Nuclear and
Chief Nuclear Officer
Florida Power and Light Company
P.O. Box 14000
Juno Beach, Florida 33408-0420

SUBJECT: TURKEY POINT UNIT 4 - ISSUANCE OF EXIGENT TECHNICAL SPECIFICATION AMENDMENT CONCERNING CONTROL ROD POSITION INDICATION SYSTEM (TAC NO. MC3889)

Dear Mr. Stall:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 221 to Facility Operating License No. DPR-41 for the Turkey Point Plant Unit 4. This amendment consists of a change to the Technical Specifications (TSs) in response to Florida Power and Light Company's application dated July 28, 2004, as supplemented by a letter dated August 5, 2004. Pursuant to Title 10, *Code of Federal Regulations* (10 CFR) Section 50.91(a)(6), you requested that your application be processed as an exigent TS amendment.

The amendment modifies TSs 3/4.1.3.1, "Movable Control Assemblies," 3/4.1.3.2, "Position Indication Systems - Operating," and 3/4.1.3.5, "Shutdown Rod Insertion Limit," to allow the use of an alternate method of determining rod position for the control rod F-8 until the end of Cycle 21 or until repairs can be conducted on the Analog Rod Position Indication System at the next outage of sufficient duration, whichever comes first.

A copy of our safety evaluation is also enclosed. Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

/RA/

Eva A. Brown, Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-251

Enclosures: 1. Amendment No. 221 to License No. DPR-41
2. Safety Evaluation

cc w/encls: See next page

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FLORIDA POWER AND LIGHT COMPANY

DOCKET NO. 50-251

TURKEY POINT PLANT UNIT NO. 4

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 221
Renewed License No. DPR-41

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

   A. The application for amendment by Florida Power and Light Company (the licensee) dated July 28, 2004, as supplemented by a letter dated August 5, 2004, 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 set forth in 10 CFR Chapter I;

   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:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 221, 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 its date of issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Michael L. Marshall, Jr., Acting Chief, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: August 20, 2004

ATTACHMENT TO LICENSE AMENDMENT NO. 221

FACILITY OPERATING LICENSE NO. DPR-41

DOCKET NO. 50-251

Replace the following pages of the Appendix A, Technical Specifications, with the attached revised pages as indicated. The revised pages are identified by amendment numbers and contains marginal lines indicating the area of change.

Remove Pages	Insert Pages
3/4 1-17	3/4 1-17
3/4 1-18	3/4 1-18
3/4 1-20	3/4 1-20
3/4 1-21	3/4 1-21
3/4 1-25	3/4 1-25

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 221 TO

RENEWED FACILITY OPERATING LICENSE NO. DPR-41

FLORIDA POWER AND LIGHT COMPANY

TURKEY POINT PLANT UNIT NO. 4

DOCKET NO. 50-251

1.0 INTRODUCTION

By letter dated July 28, 2004, as supplemented by a letter dated August 5, 2004, Florida Power and Light (FPL, the Licensee) Company requested exigent approval of changes to the Technical Specifications (TSs) for Turkey Point Unit 4. This revision is being requested due to an inoperable control Rod Position Indicator (RPI) associated with control rod F-8 in Shutdown Bank B. These proposed changes will modify TS 3/4.1.3.1, "Movable Control Assemblies," 3/4.1.3.2, "Position Indication Systems - Operating," and 3/4.1.3.5, "Shutdown Rod Insertion Limit," to allow the use of an alternate method of determining rod position for the control rod F-8 with the RPI. The licensee indicated its intention that repairs would be completed at the earliest opportunity, when Unit 4 enters Mode 5 and the outage is of sufficient duration to effect the repairs, but no later than the Unit 4 Cycle 22 refueling outage in the spring of 2005.

The alternate method to be used will monitor the stationary gripper coil of the F-8 control rod drive mechanism (CRDM). The proposed change is expected to provide adequate controls to ensure that the rod position is known and any control rod incident is detectable. These changes would reduce the frequency of flux mapping to determine the position of control rod F-8 while the rod position indication system for this control rod is inoperable.

Turkey Point Unit 4 TS Action Statement a.1 of TS 3.1.3.2 requires that, with one analog rod position indicator (ARPI) inoperable, either: (1) the position of the non-indicating rod be determined indirectly by the movable incore detectors once per 8 hours and within 1 hour of any motion that exceeds 24 steps or (2) thermal power be reduced to less than 75 percent within 8 hours. Currently FPL is using Option (1).

The proposed TS changes would replace the requirement for use of movable incore detectors and allow determination of the position of rod F-8 once per 8 hours by an alternate method other than the ARPI system until repair of the indication system is completed. Surveillance Requirements (SRs) 4.1.3.1.1, 4.1.3.2.1 and 4.1.3.2.2 would also be modified to reflect the alternate method of determining the position of rod F-8 until repair of the indication system is completed.

2.0 REGULATORY EVALUATION

Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50 Appendix A, "General Design Criteria (GDC) for Nuclear Power Plants," (Reference 4) provides a list of the minimum design requirements for nuclear power plants. According to GDC 13, the licensee must provide instrumentation to monitor the variables and systems over their operating ranges during normal operation, anticipated operational occurrences, and accident conditions. TSs 3.1.3.1, 3.1.3.2, and 3.1.3.5 require OPERABILITY of the ARPI and control rods to determine control rod positions and thereby ensure compliance with the rod alignment and insertion limits. The OPERABILITY, including position indication, of the shutdown and control rods is an initial assumption in all safety analyses that assume rod insertion upon reactor trip.

TS 3.1.3.2 currently requires the RPI System to be operable and capable of determining the respective actual and demanded shutdown and control rod positions. With a maximum of one RPI per bank inoperable, the TS ACTION statement requires that the licensee determine the position of the non-indication rod(s) indirectly by using the movable incore detectors once every 8 hours and within 1 hour for any movement of the non-indicating rod which exceeds 24 steps in one direction. The licensee also has the option to reduce power to 75 percent of rated thermal power.

The proposed change would permit the licensee to monitor the stationary gripper coil of the CRDM for control rod F-8 in lieu of the RPI system, thus partially restoring the ability to determine RPI for control rod F-8. This alternate method would be used for control rod F-8 RPI in TS Sections 3.1.3.1, 3.1.3.2, and 3.1.3.5. The licensee would be required to verify every 8 hours that the gripper coil has not changed state. The absence of movement of the gripper coil would indicate that the control rod had not moved.

Additionally, the proposed change will add a footnote to TSs 3/4.1.3.1, 3/4.1.3.2 and 3/4.3.1.3.5, which states that during Cycle 21 the position of control rod F-8 may be determined indirectly by an alternate method, other than the ARPI system, until the repair of the indication system for this rod is completed. Additionally, a footnote stating that the use of the alternate method for control rod F-8 does not require the 4-hour comparison of demand versus actual position will be added to SRs 4.1.3.1.1 and 4.1.3.2.1. This change would not affect the existing TS surveillance requirements to determine control rod F-8's position by flux map every 31 days, but would require the licensee to determine control rod F-8's position using the movable incore system at least once every 31 days. However, it would relieve the licensee from performing this determination every 8 hours as the existing TSs require.

3.0 TECHNICAL EVALUATION

The ARPI system functions to ensure control rod alignment and insertion limits are maintained, acceptable power distributions as well as minimum shutdown margins are met, and that the potential effects of a rod misalignment on associated accidents are limited.

Control Rod F-8 is located in Shutdown Bank B and is, therefore, required to be fully withdrawn when the reactor is critical. In order to evaluate the proposed TS change, the licensee considered the following conditions:

1) Rod drop or rod misalignment during power operation
2) Rod drop or rod misalignment during reactor startup
3) Reactor trip

These are the only conditions that need to be considered since control rod F-8 will be fully withdrawn at all other times that the TS is applicable.

The licensee can detect a full rod drop of control rod F-8 during power operation with indications other than the ARPI. A rod drop event would cause a noticeable change in the core parameters such as reactor power, as read by the excore nuclear detectors, and reactor coolant temperature. Thus, the operators would be directed to take the appropriate actions by indications other than the ARPI. Similarly, a rod misalignment event would also be detected by the excore nuclear detectors.

Since the alternate monitoring equipment does not provide a means to verify full rod insertion following a reactor trip or shutdown, the licensee has revised its procedures for calculating shutdown margin (SDM). The licensee stated that the Shutdown Margin Calculation procedure, 0-OP-028.2, will be revised to ensure that SDM limits continue to be met for the remainder of Cycle 21. At the NRC staff's request, the licensee performed an analysis using approved NRC codes (as described in the licensee's Core Operating Limits Report) to demonstrate that following a reactor trip, Turkey Point would continue to satisfy its SDM requirements with both control rods F-8 and the worst-case stuck rod fully withdrawn from the core. Therefore, although the position of control rod F-8 will not be readily identifiable following a reactor trip, the licensee has demonstrated that it will have sufficient SDM to ensure that the reactor can be shutdown even if control rod F-8 does not insert.

FPL has determined that the objectives stated above can be met with an inoperable ARPI in a shutdown bank without subjecting the movable incore detectors to unnecessary additional wear. The licensee's alternate monitoring system will track the stationary gripper coil current. The licensee stated that it will monitor the current (measured as an equivalent voltage) on an existing control room recorder, R-4-448. A voltage signal change will indicate a change in the state of the gripper coil. The licensee will use a spare channel on the recorder to provide a readily available indication of the gripper current voltage to the control room operators. The normal gripper current is 4.4 amps, which when measured across the resistor will be equivalent to 275 milli-volts. The licensee also stated that the recorder contains an alarm indication in the form of a display window which is programmed for a low voltage alarm indicative of a gripper coil change of state. FPL's proposed TS changes will require it to verify that the gripper coil has not changed state every 8 hours, although the location of the alternate indication in the control room, and its alarm feature, will ensure that operators have an immediate indication of any change in gripper coil state. This 8-hour surveillance period is consistent with the current operational requirements for control rod F-8 position determination.

Licensed operators will be responsible for monitoring the chart recorder. The licensee indicated that Operating Procedure 4-OSP-201.1, "RCO Daily Log," will be revised to provide instructions for monitoring gripper coil trends. Additionally, since the operators will be required to log the

position of control rod F-8 every 4 hours, the operators will be able to identify any changes in gripper coils state based on a deviation from the normal state. The normal state is defined by a predetermined operating band and programmed alarm, as well as by observing the historical trend line displayed on the recorder. The licensee also provided information in the August 5, 2004 supplemental submittal which described an operator response to a change in the gripper coil voltage value. The licensee stated that the action prescribed in the Annunciator Response and Off Normal Operating procedures for such a change is the same for a rod that is indicated to be deviating based on an individual rod position indicator.

In the August 5 letter, the licensee provided, at the request of the NRC staff, a summary of all the indications and alarms affected by the inoperable ARPI for control rod F-8. Also included, in the form of a detailed table, was a concise list of the affected indications and alarms, their functions, normal operating conditions, and the affected or modified operating conditions. Additionally, FPL summarized how the operators would compensate for each of the affected indications and alarms during normal, startup, and shutdown operations. For example, the licensee described how the incore detector system will be used to confirm the position of control rod F-8 during non-steady-state evolutions such as a reactor shutdown. Additionally, the licensee stated that since the F-8 Rod Bottom Light and Rod Bottom Annunciation Alarm will not be available on the alternate monitoring equipment, the loss will be compensated for by a procedurally driven requirement to perform a flux trace any time a change in gripper coil state is indicated on the chart recorder. Based on review of the licensee's compensatory actions, the NRC staff agrees that FPL has developed effective controls to compensate for the loss of these indications and alarms.

The NRC staff has reviewed all the material submitted and performed an assessment of the proposed changes. The staff agrees that the personnel safety and as low as reasonably achievable (ALARA) with regards to occupational exposure concerns prevent safe completion of the repairs with the reactor at power and that continued frequent incore detector use is not advisable for the extended period of time until the next outage of sufficient duration. The proposed TS change provides adequate controls to ensure that the rod position is known and to ensure that rod misalignment is detectable. Since the increase in the likelihood of an undetected rod drop or misalignment is determined to be negligible, the integrity of the accident analysis is maintained. Based on the evaluation provided above, the staff concludes that the proposed TS change is acceptable for providing an alternative means of monitoring the position of control rod F-8 for the remainder of Cycle 21 or the next outage of sufficient duration to effect the repairs, whichever comes first.

4.0 STATEMENT OF EXIGENT CIRCUMSTANCES

The Commission's regulation, as stated in 10 CFR 50.91, provides special exceptions for the issuance of amendments when the usual 30-day public notice cannot be met. One type of special exception is an exigency. An exigency exists when the staff and the licensee need to act quickly and time does not permit the staff to publish a *Federal Register* notice allowing 30 days for prior public comment, and the staff also determines that the amendment involves no significant hazards consideration. In accordance with 10 CFR 50.91(a)(6)(i)(A), the staff issued a *Federal Register* notice providing an opportunity for hearing and allowing at least 2 weeks from the date of the notice for prior public comment on August 5, 2004 (69 FR 47467). No comments were received.

In its submittal, the licensee discussed the need for an exigent review of the proposed license amendment. This request was submitted on an exigent basis as a result of the unanticipated failure of the rod position indication for Rod F-8. The existing compensatory measures require exercising the movable incore detectors every 8 hours (90 times a month) which also may cause excessive wear on the incore detection system. Therefore, the licensee requested NRC review and approval of this License Amendment on an exigent basis.

On the basis of the above discussion, the staff has determined that exigent circumstances exist and that the licensee used its best efforts to make a timely application and did not cause the exigent situation.

5.0 STATE CONSULTATION

Based upon a letter dated May 2, 2003, from Michael N. Stephens of the Florida Department of Health, Bureau of Radiation Control, to Brenda L. Mozafari, Senior Project Manager, U.S. Nuclear Regulatory Commission, the State of Florida does not desire notification of issuance of license amendments.

6.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Commission's regulations in 10 CFR 50.92 state that the Commission may make a final determination that a license amendment involves no significant hazards consideration if operation of the facility, in accordance with the amendment, would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated, or (2) create the possibility of a new or different kind of accident from any accident previously evaluated, or (3) involve a significant reduction in a margin of safety. As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue. The staff's analysis is set forth below.

The proposed amendment would modify several sections of the TSs to allow the use of an alternate method of determining rod position for the control rod F-8 until the end of Cycle 21 or until repairs can be conducted on the Analog Rod Position Indication System at the next outage of sufficient duration, whichever comes first.

(1) This change does not significantly increase the probability of an accident previously evaluated because the proposed change does not require any change to plant systems, structures, or components. The change does not increase the consequences of an accident because the change only provides an alternative method of monitoring shutdown rod position and does not change the assumption or results of any previously evaluated accident.

(2) The change provides only an alternative method of determining the position of one shutdown rod. No new accident initiators are introduced by the proposed alternative method of performing rod position verification. The proposed change does not affect the reactor protection system nor the reactor control system; therefore, no new failure modes are created that would cause a new or different kind of accident from any accident previously evaluated.

(3) The proposed change provides only an alternative method of determining the position of one shutdown rod. No new accident initiators are introduced by the proposed alternative manner of performing rod position verification. The proposed change does not affect the reactor protection system or the reactor control system. Hence, no new failure modes are

created that would cause a new or different kind of accident from any accident previously evaluated. Therefore, the change does not involve a significant reduction in a margin of safety.

Based on the above considerations, the NRC staff concludes that the amendment meets the three criteria of 10 CFR 50.92. Therefore, the staff has made a final determination that the proposed amendment does not involve a significant hazards consideration.

7.0 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 (69 FR 47467). 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 the amendments.

8.0 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.

9.0 REFERENCES

1. Letter from T.O. Jones (FPL) to NRC, "Proposed License Amendment, Inoperable Rod Position Indication," dated July 28, 2004, ADAMS Accession No. ML042180193.

2. Letter from T.O. Jones (FPL) to NRC, "Response to Request for Additional Information for Proposed License Amendment, Inoperable Rod Position Indication," dated August 5, 2004.

3. Letter from Brown, Eva A. (NRC) to Stall, J.A. (FPL), "Turkey Point Unit 4 - Issuance of Exigent Technical Specification Amendment Concerning Control Rod Position Indication System (TAC No. MB7503)," dated August 20, 2002, ADAMS Accession No. ML022320685.

4. Title 10 *Code of Federal Regulations*, Part 50, Appendix A, General Design Criteria 13.

Principal Contributor: R. Taylor, NRR

Date: August 20, 2004

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Florida Power and Light Company

TURKEY POINT PLANT

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