
Safety Evaluation Report

Related to the License Renewal of Turkey Point Nuclear Plant, Units 3 and 4

Docket Nos. 50-250 and 50-251

Florida Power & Light Company

U.S. Nuclear Regulatory Commission

Office of Nuclear Reactor Regulation

February 2002



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ABSTRACT

This document is a safety evaluation report regarding the application to renew the operating licenses for Turkey Point Nuclear Plant, Units 3 and 4, which was filed by the Florida Power and Light Company by letter dated September 8, 2000, and received by the U.S. Nuclear Regulatory Commission (NRC) on September 11, 2000. The NRC's Office of Nuclear Reactor Regulation has reviewed the Turkey Point license renewal application for compliance with the requirements of Title 10 of the *Code of Federal Regulations*, Part 54, "Requirements for Renewal of Operating Licenses for Nuclear Power Plants," and prepared this report to document its findings.

In its submittal of September 8, 2000, the Florida Power and Light Company requested renewal of the operating license for Turkey Point, Units 3 and 4 (License Nos. DPR-31 and DRP-41, respectively), which were issued under Section 104b of the Atomic Energy Act of 1954, as amended, for a period of 20 years beyond the current license expiration dates of July 19, 2012, and April 10, 2013, respectively. Turkey Point Units 3 and 4 are located in Miami-Dade County east of Florida City, Florida. Each unit consists of a Westinghouse pressurized-water reactor nuclear steam supply system designed to produce a core thermal power of 2,300 megawatts or approximately 693 net megawatts electric.

The NRC's project manager for the Turkey Point license renewal is Rajender Auluck. Dr. Auluck may be contacted by calling 301-415-1025 or by writing to the License Renewal and Environmental Impacts, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

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5. REVIEW BY THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

During the meeting of the Advisory Committee on Reactor Safeguards (ACRS) on October 5, 2001, the ACRS reviewed the NRC staff's safety evaluation report (SER) related to the license renewal application (LRA) for the Turkey Point Nuclear Plant, Units 3 and 4. The ACRS Subcommittee on Plant License Renewal initially reviewed the SER prior to its meeting with the NRC staff and the applicant on September 25, 2001, and presented its findings during the October 5, 2001, ACRS meeting.

Due to the small number and subject matter of open items, the subcommittee recommended not issuing an interim letter on its review of the license renewal SER with open items. The ACRS subcommittee meeting to review the final SER is scheduled for March 13, 2002, and the ACRS full committee meeting to review the final SER is scheduled for April 12, 2002.

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6. CONCLUSIONS

The staff reviewed the license renewal application for Turkey Point Nuclear Plant, Units 3 and 4, in accordance with Commission's regulations and the NRC's draft "Standard Review Plan for the Review of License Renewal Applications for Nuclear Power Plants," dated August 2000. The revised SRP was issued as NUREG-1800 in July 2001. 10 CFR 54.29 identifies the standards for issuance of a renewed license.

On the basis of its evaluation of the application as discussed above, the staff has determined that the requirements of 10 CFR 54.29(a) have been met.

The staff notes that any requirements of Subpart A of 10 CFR Part 51 are documented in the final plant-specific supplement to the Generic Environmental Impact Statement, dated January 2002.

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APPENDIX A CHRONOLOGY

This appendix contains a chronological listing of routine licensing correspondence between the U.S. Nuclear Regulatory Commission (NRC) staff and Florida Power & Light Company (FPL) and other correspondence regarding the NRC staff's review of the Turkey Point Nuclear Plant, Units 3 and 4 (under Docket Nos. 50-250 and 50-251) for license renewal application (LRA).

September 8, 2000	In a letter (signed by T. Plunkett), FPL submitted its LRA for Turkey Point Nuclear Plant, Units 3 and 4, as well as a copy of the boundary drawings to the NRC.
September 19, 2000	In a letter (signed by C. Grimes), NRC informed FPL that the NRC received the Turkey Point Nuclear Plant, Units 3 and 4, LRA on September 11, 2000, and that Mr. Rajender Auluck was appointed as the project manager for the Turkey Point Nuclear Plant, Units 3 and 4, LRA.
October 4, 2000	In a letter (signed by D. Mathews), NRC informed FPL that the NRC staff has determined that FPL has submitted sufficient information that is complete and acceptable for docketing, proposed review schedule, and opportunity for hearing.
November 1, 2000	In a meeting summary (signed by R. Auluck), NRC summarized the meeting held to familiarize the NRC staff with the Turkey Point Nuclear Plant, Units 3 and 4, LRA.
December 22, 2000	In a letter (signed by R. Auluck), NRC requested that FPL provide additional information (RAI) on Sections 2.3.3.10 – 12 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA.
December 22, 2000	In a meeting summary (signed by R. Auluck), NRC summarized the October 31, 2000, meeting with FPL regarding review of equipment qualification (EQ) calculations for the Turkey Point Nuclear Plant, Units 3 and 4, LRA.
January 10, 2001	In a letter (signed by R. Auluck), NRC requested that FPL provide additional information (RAI) on Sections 2.3.4 and 3.5 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA.
January 17, 2001	In a letter (signed by R. Auluck), NRC requested that FPL provide additional information (RAI) on Sections 3.7, 4.4, and Appendix B, 3.2.6 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA.
January 17, 2001	In a letter (signed by R. Auluck), NRC requested that FPL provide additional information (RAI) on Sections 2.3.3.8, 2.4.2.8, and 2.4.2.10 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA.

January 19, 2001	In a letter (signed by R. Hovey), FPL provided its response to the NRC RAIs on Sections 2.3.3.10 - 12 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA requested on December 22, 2000.
January 24, 2001	In a letter (signed by R. Auluck), NRC requested that FPL provide additional information (RAI) on Section 2.3.3.14 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA.
January 31, 2001	In a letter (signed by J. Wilson), NRC requested FPL provide additional information (RAI) regarding severe accident mitigation alternatives for Turkey Point Nuclear Plant, Units 3 and 4.
February 1, 2001	In a letter (signed by S. Koenick), NRC requested that FPL provide additional information (RAI) on Sections 4.2, 4.7.1 and Appendix B Sections 3.1.5, 3.1.6, 3.1.7, 3.2.1.1, 3.2.2, 3.2.3, 3.2.4, 3.2.9, 3.2.11, 3.2.12, 3.2.13, 3.2.14, and 3.2.16 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA.
February 2, 2001	In a letter (signed by R. Auluck), NRC requested that FPL provide additional information (RAI) on Sections 2.1, 2.3.1, 2.3.2.2, 2.3.3.3, 2.3.3.4, 2.4.1, and 2.4.2.4 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA.
February 2, 2001	In a letter (signed by R. Auluck), NRC requested that FPL provide additional information (RAI) on Section 3.2 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA.
February 2, 2001	In a letter (signed by R. Auluck), NRC requested that FPL provide additional information (RAI) on Section 3.3 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA.
February 2, 2001	In a letter (signed by R. Auluck), NRC requested that FPL provide additional information (RAI) on Section 3.4 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA.
February 2, 2001	In a letter (signed by R. Auluck), NRC requested that FPL provide additional information (RAI) on Section 3.6 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA.
February 2, 2001	In a letter (signed by R. Auluck), NRC requested that FPL provide additional information (RAI) on Sections 4.3, 4.5, 4.6, 4.7.4 and Appendix B, Sections 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.2.1.2, 3.2.1.3, 3.2.1.4, 3.2.5, 3.2.8, 3.2.10, and 3.2.15 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA.
February 8, 2001	In a letter (signed by R. Hovey), FPL provided its response to the NRC RAIs on Sections 2.3.4 and 3.5 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA requested on January 10, 2001.

February 14, 2001	In a meeting summary (signed by S. Koenick), NRC summarized the January 4, 2001, meeting with FPL to discuss staff questions and potential requests for additional information (RAIs) for the Turkey Point Nuclear Plant, Units 3 and 4, LRA.
February 16, 2001	In a letter (signed by R. Hovey), FPL provided its response to the NRC RAIs on Sections 2.3.3.8, 2.4.2.8, and 2.4.2.10 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA requested on January 17, 2001.
February 26, 2001	In a letter (signed by R. Hovey), FPL provided its response to the NRC RAIs on Section 2.3.3.14 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA requested on January 24, 2001.
March 1, 2001	In a letter (signed by R. Newton), the Westinghouse Owners Group (WOG) submitted for staff review topical report WCAP-15338, "A Review of Cracking Associated with Weld Deposited Cladding in Operating PWR Plants (MUHP-6110)."
March 22, 2001	In a letter (signed by R. Hovey), FPL provided its response to the NRC RAIs on Section 3.4 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA requested on February 2, 2001.
March 22, 2001	In a letter (signed by R. Hovey), FPL provided its response to the NRC RAIs on Sections 2.1, 2.3.1, 2.3.2.2, 2.3.3.3, 2.3.3.4, 2.4.1, and 2.4.2.4 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA requested on February 2, 2001.
March 30, 2001	In a letter (signed by R. Hovey), FPL provided its response to the NRC RAIs on Sections 3.7, 4.4, and Appendix B, 3.2.6 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA requested on January 17, 2001.
March 30, 2001	In a letter (signed by R. Hovey), FPL provided its response to the NRC RAIs on Section 3.3 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA requested on February 2, 2001.
March 30, 2001	In a letter (signed by R. Hovey), FPL provided its response to the NRC RAIs on Section 3.6 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA requested on February 2, 2001.
March 30, 2001	In a letter (signed by R. Hovey), FPL provided its response to the NRC RAIs regarding severe accident mitigation alternatives for Turkey Point Nuclear Plant, Units 3 and 4, requested on January 31, 2001.

April 12, 2001	In a letter (signed by R. Anand), NRC requested that WOG provide additional information (RAI) on WCAP-15338, "A Review of Cracking Associated with Weld Deposited Cladding in Operating PWR Plants."
April 19, 2001	In a letter (signed by R. Hovey), FPL provided its response to the NRC RAIs on Section 3.2 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA requested on February 2, 2001.
April 19, 2001	In a letter (signed by R. Hovey), FPL provided its response to the NRC RAIs on Sections 4.2, 4.7.1, and Appendix B, Sections 3.1.5, 3.1.6, 3.1.7, 3.2.1.1, 3.2.2, 3.2.3, 3.2.4, 3.2.9, 3.2.11, 3.2.12, 3.2.13, 3.2.14, and 3.2.16 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA requested on February 1, 2001.
April 19, 2001	In a letter (signed by R. Hovey), FPL provided its response to the NRC RAIs on Sections 4.3, 4.5, 4.7.4, and Appendix B Sections 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.2.1.2, 3.2.1.3, 3.2.1.4, 3.2.5, 3.2.8, 3.2.10, and 3.2.15 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA requested on February 2, 2001.
April 24, 2001	In a meeting summary (signed by S. Koenick), NRC summarized the March 20, 2001, meeting with FPL to discuss draft responses to requests for additional information (RAIs) for the Turkey Point Nuclear Plant, Units 3 and 4, LRA.
April 25, 2001	In an audit Report (signed by T. Quay), NRC issued "Turkey Point Units 3 and 4 License Renewal Application — Scoping/Screening Methodology and Quality Assurance Attribute Audit Report (TAC NOS. MA9939 and MA9943)."
May 2, 2001	In a meeting summary (signed by R. Auluck), NRC summarized the January 24, 2001, meeting with FPL to discuss staff questions and potential requests for additional information (RAIs) for the Turkey Point Nuclear Plant, Units 3 and 4, LRA.
May 3, 2001	In a letter (signed by R. Hovey), FPL provided its supplemental response to NRC RAI 2.1-2 on Section 2.1 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA requested on February 2, 2001.
May 11, 2001	In a letter (signed by R. Hovey), FPL provided its supplemental response to the NRC RAIs on Section 3.7 and Appendix B, Section 3.2.6 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA requested on January 17, 2001.
May 11, 2001	In a letter (signed by R. Hovey), FPL provided its supplemental response to an NRC RAI on Section 3.6 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA requested on February 2, 2001.

May 29, 2001	In a letter (signed by R. Hovey), FPL provided its supplemental response to an NRC RAI on Section 4.2 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA requested on February 1, 2001.
May 29, 2001	In a letter (signed by R. Hovey), FPL provided its supplemental response to the NRC RAIs on Sections 3.7 and 4.4 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA requested on January 17, 2001.
June 15, 2001	In a letter (signed by R. Bryan), WOG provided its response to the NRC RAI on WCAP-15338, "A Review of Cracking Associated with Weld Deposited Cladding in Operating PWR Plants."
June 25, 2001	In a letter (signed by R. Hovey), FPL provided its supplemental response to an NRC RAI on Appendix B, Section 3.1.7 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA requested on February 1, 2001.
July 18, 2001	In a letter (signed by R. Hovey), FPL provided its supplemental response to the NRC RAIs on Sections 2.3.3.10 – 12 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA requested on December 22, 2000.
July 23, 2001	In a letter (signed by H. Christensen), NRC issued its Inspection Report Nos. 50-250/01-09 and 50-251/01-09 documenting the results of its scoping and screening inspection.
July 31, 2001	In a letter (signed by R. Bryan), WOG provided its revised response to the NRC RAI on WCAP-15338, "A Review of Cracking Associated with Weld Deposited Cladding in Operating PWR Plants."
August 13, 2001	In a letter (signed by T. Jones), FPL provided a clarification to its RAI 3.2.3-3 response provided in its April 19, 2001, letter on Section 3.2 of the Turkey Point Nuclear Plant, Units 3 and 4, LRA.
August 17, 2001	In a letter (signed by D.B. Matthews), NRC issued its "Safety Evaluation Report With Open Items Related to the License Renewal of Turkey Point Nuclear Plant, Units 3 and 4."
August 29, 2001	In a letter (signed by R. Auluck), NRC issued a correction to the NRC's transmittal letter of August 17, 2001.
September 25, 2001	In a transcript (issued by N. Gross, court reporter), NRC issued its official transcript of the Advisory Committee for Reactor Safety Plant License Renewal Subcommittee Meeting for the Turkey Point Units 3 and 4 LRA.

October 29, 2001	In a letter (issued by H. Christensen), NRC issued Inspection Report Nos. 50-250/01-11, and 50-251/01-11 regarding the inspection of the Turkey Point facility as it relates to the FPL's application for license renewal for the Turkey Point Units 3 and 4.
October 30, 2001	In a letter (issued by C.I. Grimes), NRC provided additional clarification to FPL regarding its regulatory position for aging management of concrete.
November 1, 2001	In a letter (signed by J.P. McElwain), FPL provided "Turkey Point Units 3 and 4. . . . License Renewal Safety Evaluation Report Open Item and Confirmatory Item Responses and Revised License Renewal Application Appendix A."
November 7, 2001	In a letter (signed by J.P. McElwain), FPL provided "Turkey Point Units 3 and 4. . . . License Renewal Safety Evaluation Report Open Item Regarding Aging Management of Concrete."
November 8, 2001	In a letter (signed by R. Auluck), NRC provided FPL with a revised schedule for the NRC's review for the Turkey Point, Units 3 and 4, LRA.
December 17, 2001	In a letter (signed by J P. McElwain), FPL provided "Turkey Point Units 3 and 4. . . . License Renewal Safety Evaluation Report Open Item and Confirmatory Item Responses and Revised License Renewal Application Appendix A."
February 1, 2002	In a memorandum (signed by B.S. Mallett), Acting Regional Administrator, Region II, provided his recommendations regarding the license renewal for the Turkey Point Units 3 and 4.
February 15, 2002	In a meeting summary (signed by R. Auluck), NRC recommended the October 4, 2001, meeting with FPL to discuss the open items identified in the SER related to Turkey Point Units 3 and 4, LRA.
February 27, 2002	By letter (signed by C.I. Grimes), NRC issued "Safety Evaluation Report Related to the License Renewal of Turkey Point, Units 3 and 4.

APPENDIX B REFERENCES

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APPENDIX C ABBREVIATIONS

A/C	air conditioning
ABVS	auxiliary building ventilation system
ACI	American Concrete Institute
ACRS	Advisory Committee on Reactor Safeguards
AMP	aging management program
AMR	aging management review
ANS	American Nuclear Society
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
ATWS	anticipated transient without scram
B&W	Babcock and Wilcox
BL	bulletin
BTP	branch technical position
CASS	cast austenitic stainless steel
CBVS	control building ventilation system
CCW	component cooling water
CCSRVS	computer/cable spreading room ventilation system
CFR	<i>Code of Federal Regulations</i>
CLB	current licensing basis
CMAA	Crane Manufacturers Association of America
CRDM	control rod drive mechanism
CRVS	control room ventilation system
CS	condensate system
CST	condensate storage tank
CUF	cumulative usage factor
CVCS	chemical and volume control system
DBD	design-basis document
DCEIRVS	dc equipment/inverter room ventilation system
DG	draft regulatory guide
DOR	Division of Operating Reactors
DWST	demineralized water storage tank
ECCS	emergency core cooling system
ECT	eddy current testing
EDG	emergency diesel generator
EDGB	emergency diesel generator building
EDGBVS	emergency diesel generator building ventilation system
EER	electrical equipment room
EERV	electrical equipment room ventilation
EFPD	effective full-power day
EFPY	effective full-power year
EOL	end of life

EPRI	Electric Power Research Institute
EQ	environmental qualification
ESF	engineered safety features
FAC	flow-accelerated corrosion
FP	fire protection
FPL	Florida Power and Light Company
FSAR	final safety analysis report
FSER	final safety evaluation report
GALL	generic aging lessons learned
GEIS	generic environmental impact statement
GL	generic letter
GSI	generic safety issue
HEPA	high-efficiency particulate air (filter)
HVAC	heating, ventilation, and air conditioning
IASCC	irradiation-assisted stress-corrosion cracking
IEB	Inspection and Enforcement Bulletin
IEEE	Institute of Electrical and Electronics Engineers
IGSCC	intergranular stress-corrosion cracking
IN	information notice
INPO	Institute of Nuclear Power Operations
IPA	integrated plant assessment
ISI	inservice inspection
ITS	improved technical specification
LBB	leak-before-break
LOOP	loss of offsite power
LRA	license renewal application
MCRE	main control room environment
MFS	main feedwater system
MIC	microbiologically influenced corrosion
MRV	minimum required value
NDE	nondestructive examination
NEI	Nuclear Energy Institute
NEPA	National Environmental Policy Act
NRC	Nuclear Regulatory Commission
NUREG	NRC technical report designation
PLL	prescribed lower limits
PTS	pressurized thermal shock
PWR	pressurized-water reactors
PWSCC	primary water stress-corrosion cracking
QA	quality assurance

RAI	request for additional information
RCP	reactor coolant pump
RCS	reactor coolant system
RG	regulatory guide
RHR	residual heat removal
RI-ISI	risk-informed ISI
RPV	reactor pressure vessel
RT	reference temperature
RVHPIP	reactor vessel head Alloy 600 penetration inspection program
SC	structure and component
SCC	stress-corrosion cracking
SER	safety evaluation report
SFP	spent fuel pool
SI	safety injection
SOC	statement of considerations
SPCS	steam and power conversion systems
SRP	standard review plan
SSC	structure, system, and component
TBVS	turbine building ventilation system
TEMA	Tubular Exchanger Manufacturers Association
TLAA	time-limited aging analyses
TS	technical specification
UFSAR	updated final safety analysis report
USE	upper-shelf energy
UT	ultrasonic testing
VHP	vessel head penetration
WCAP	Westinghouse Owners Group generic technical report
WOG	Westinghouse Owners Group

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