

D2S MS-016

DEC 3 1982

Docket No. 50-335

Dr. Robert E. Uhrig
Vice President
Advanced Systems & Technology
Florida Power & Light Company
P. O. Box 529100
Miami, Florida 33152

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Dear Dr. Uhrig:

The Commission has issued the enclosed Amendment No. 54 to Facility Operating License No. DPR-67 for the St. Lucie Plant, Unit No. 1. The amendment consists of changes to the Technical Specifications (TS) as requested in your letter of November 16, 1978, which was superseded by your submittal of January 8, 1981 and supplemented by letter dated May 26, 1982. To meet our requirements, we have revised Bases 3/4.7.5 "Ultimate Heat Sink" to reflect the changes proposed by this amendment. Mr. Ronald Stevens of your staff has agreed to these revisions.

The amendment revises TS 3/4.7.5 to reflect the new Ultimate Heat Sink flow barrier configuration and the deletion of the maximum water temperature limitation.

Copies of the Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

Original signed by
David H. Wagner

David H. Wagner, Project Manager
Operating Reactors Branch #3
Division of Licensing

Enclosures:

1. Amendment No. 54 to DPR-67
2. Safety Evaluation
3. Notice of Issuance

cc w/enclosures:
See next page

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OFFICE	ORB#3:DL	ORB#3:DL	ORB#3:DL	SSPB	ORB#3:DL	AD:OR:DL	OELD
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

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Docket No. 50-335

Docketing and Service Section
Office of the Secretary of the Commission

SUBJECT: FLORIDA POWER AND LIGHT COMPANY, St. Lucie Plant, Unit No. 1

Two signed originals of the Federal Register Notice identified below are enclosed for your transmittal to the Office of the Federal Register for publication. Additional conformed copies (12) of the Notice are enclosed for your use.

- ☐ Notice of Receipt of Application for Construction Permit(s) and Operating License(s).
- ☐ Notice of Receipt of Partial Application for Construction Permit(s) and Facility License(s): Time for Submission of Views on Antitrust Matters.
- ☐ Notice of Availability of Applicant's Environmental Report.
- ☐ Notice of Proposed Issuance of Amendment to Facility Operating License.
- ☐ Notice of Receipt of Application for Facility License(s); Notice of Availability of Applicant's Environmental Report; and Notice of Consideration of Issuance of Facility License(s) and Notice of Opportunity for Hearing.
- ☐ Notice of Availability of NRC Draft/Final Environmental Statement.
- ☐ Notice of Limited Work Authorization.
- ☐ Notice of Availability of Safety Evaluation Report.
- ☐ Notice of Issuance of Construction Permit(s).
- ☐ Notice of Issuance of Facility Operating License(s) or Amendment(s).
- ☒ Other: Amendment No. 54
Referenced documents have been provided PDR.

Division of Licensing
Office of Nuclear Reactor Regulation

Enclosure:
As Stated

OFFICE →	ORB#3:DL					
SURNAME →	PMKreutzer/pn					
DATE →	12/3/82					

Florida Power & Light Company

CC:

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Executive Office of the Governor
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Tallahassee, Florida 32301



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

FLORIDA POWER & LIGHT COMPANY

DOCKET NO. 50-335

ST. LUCIE PLANT UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 54
License No. DPR-67

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Florida Power & Light Company, (the licensee) dated November 16, 1978 as superseded January 8, 1981 and supplemented May 26, 1982, 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.

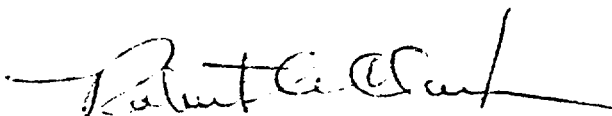
2. Accordingly, Facility Operating License No. DPR-67 is amended by changes to the Technical Specifications as indicated in the Attachment to this license amendment, and by amending paragraph 2.C(2) to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 54, 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 its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: December 3, 1982

ATTACHMENT TO LICENSE AMENDMENT NO. 54
TO FACILITY OPERATING LICENSE NO. DPR-67
DOCKET NO. 50-335

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by amendment number and contain vertical lines indicating the area of change. The corresponding overleaf pages are also provided to maintain document completeness.

Pages

3/4 7-18
B 3/4 7-4

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- b. At least once per 18 months during shutdown, by:
 - 1. Cycling each power operated (excluding automatic) valve servicing safety related equipment that is not testable during plant operation, through at least one complete cycle of full travel.
 - 2. Verifying that each automatic valve servicing safety related equipment actuates to its correct position on a Safety Injection Actuation Signal.

PLANT SYSTEMS

3/4.7.5 ULTIMATE HEAT SINK

LIMITING CONDITION FOR OPERATION

3.7.5.1 The ultimate heat sink shall be OPERABLE with:

- a. Cooling water from the Atlantic Ocean providing a water level above -10.5 feet elevation, Mean Low Water, at the plant intake structure, and
- b. Two OPERABLE valves in the barrier dam between Big Mud Creek and the intake structure.

APPLICABILITY: At all times.

ACTION:

- a. With the water level requirement of the above Specification not satisfied, be in at least HOT STANDBY within six hours and provide cooling water from Big Mud Creek within the next 12 hours.
- b. With one isolation valve in the barrier dam between Big Mud Creek and the intake structure inoperable, restore the inoperable valve to OPERABLE status within 72 hours or, within the next 24 hours, install a temporary flow barrier and open the barrier dam isolation valve. The availability of the onsite equipment capable of removing the barrier shall be verified at least once per seven days thereafter.
- c. With both of the isolation valves in the barrier dam between the intake structure and Big Mud Creek inoperable, within 24 hours either:
 - 1) Install both temporary flow barriers and manually open both barrier dam isolation valves. The availability of the onsite equipment capable of removing the barriers shall be verified at least once per seven days thereafter, or
 - 2) Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- d. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.5.1.1 The ultimate heat sink shall be determined OPERABLE at least once per 24 hours by verifying the average water level to be within limits.

4.7.5.1.2 The isolation valves in the barrier dam between the intake structure and Big Mud Creek shall be demonstrated OPERABLE at least once per six months by cycling each valve through at least one complete cycle of full travel.

PLANT SYSTEMS

BASES

3/4.7.1.5 MAIN STEAM LINE ISOLATION VALVES

The OPERABILITY of the main steam line isolation valves ensures that no more than one steam generator will blowdown in the event of a steam line rupture. This restriction is required to 1) minimize the positive reactivity effects of the Reactor Coolant System cooldown associated with the blowdown, and 2) limit the pressure rise within containment in the event the steam line rupture occurs within containment. The OPERABILITY of the main steam isolation valves within the closure times of the surveillance requirements are consistent with the assumptions used in the accident analyses.

3/4.7.1.6 SECONDARY WATER CHEMISTRY

A test program will be conducted during approximately the first 6 months of operation after initial criticality to establish the appropriate limits on the secondary water chemistry parameters and to determine the appropriate frequencies for monitoring these parameters. The results of this test program will be submitted to the Commission for review. The Commission will then issue a revision to this specification specifying the limits on the chemistry parameters and the frequencies for monitoring these parameters.

The test program will include an analysis of the chemical constituent of the makeup water for the St. Lucie Plant. The analysis shall identify the various traces of ions which upon concentration may have the potential for inducement for stress corrosion in the steam generator tubing. The test program shall also evaluate the efficiency of the water treatment systems in the St. Lucie facility for removal of such ions and the potential for addition of other ions resulting from the treatment method. The test program shall analyze concentration phenomena and the concentration rates in the steam generator and the secondary water system and shall consider concentration in the recirculating cooling water system.

3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

The limitation on steam generator pressure and temperature ensures that the pressure induced stresses in the steam generators do not exceed the maximum allowable fracture toughness stress limits. The limitations of 70°F and 200-psig are based on a steam generator RT_{NDT} of 50°F and are sufficient to prevent brittle fracture.

PLANT SYSTEMS

BASES

3/4.7.3 COMPONENT COOLING WATER SYSTEM

The OPERABILITY of the component cooling water system ensures that sufficient cooling capacity is available for continued operation of vital components and Engineered Safety Feature equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the accident analyses.

3/4.7.4 INTAKE COOLING WATER SYSTEM

The OPERABILITY of the intake cooling water system ensures that sufficient cooling capacity is available for continued operation of vital components and Engineered Safety Feature equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the accident analyses.

3/4.7.5 ULTIMATE HEAT SINK

The limitations on the ultimate heat sink level ensure that sufficient cooling capacity is available to either 1) provide normal cooldown of the facility, or 2) to mitigate the effects of accident conditions within acceptable limits.

The limitation on minimum water level is based on providing an adequate cooling water supply to safety related equipment until cooling water can be supplied from Big Mud Creek.

Cooling capacity calculations are based on an ultimate heat sink temperature of 95°F. It has been demonstrated by a temperature survey conducted from March 1976 to May 1981 that the Atlantic Ocean has never risen higher than 86°F. Based on this conservatism, no ultimate heat sink temperature limitation is specified.

3/4.7.6 FLOOD PROTECTION

The limitation on flood protection ensures that facility will be adequately protected from flooding.

3/4.7.7 CONTROL ROOM EMERGENCY VENTILATION SYSTEM

The OPERABILITY of the control room emergency ventilation system ensures that 1) the ambient air temperature does not exceed the allowable temperature for continuous duty rating for the equipment and instrumentation cooled by this system and 2) the control room will remain habitable



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 54 TO FACILITY OPERATING LICENSE NO. DPR-67
FLORIDA POWER AND LIGHT COMPANY
ST. LUCIE UNIT 1
DOCKET NO. 50-335

Introduction

By application dated November 16, 1978, superseded on January 8, 1981 and supplemented May 26, 1982, Florida Power and Light Company (FPL or the licensee) requested an amendment to Facility Operating License No. DPR-67 for St. Lucie Plant, Unit No. 1 (St. Lucie-1). The amendment request consists of changes to Technical Specification (TS) 3/4.7.5 to reflect the new ultimate heat sink (UHS) flow barrier configuration and to delete the maximum water temperature limits.

Discussion and Evaluation

The ultimate heat sink consists of two separate water sources: 1) the Atlantic Ocean, and 2) Big Mud Creek and the Indian River which are connected to the Atlantic Ocean via the Fort Pierce and St. Lucie Inlets. To separate these two sources of water for normal operation, a barrier dam was designed and constructed. The design of the barrier dam provides for flow control devices to be actuated only in an emergency to supply water from Big Mud Creek.

TS Surveillance Requirement 4.7.5.1.2 presently requires the availability of on-site equipment for removing the flow barrier between the intake structure and Big Mud Creek be verified at least once per seven days. This TS was based upon the configuration of the interim barrier dam. On July 31, 1977, as required by paragraph F.1 of the license, installation of gates/valves to control water flow through the ultimate heat sink barrier dam was completed. The present ultimate heat sink barrier dam configuration is described in the updated FSAR Section 9.2.7.2.1. The licensee has concluded that on-site equipment is required only in the event that the isolation (flow control) valves are inoperable and stop logs must be installed on an interim basis to block flow.

We agree with the licensee's conclusion that the on-site equipment is not required unless the isolation valves are inoperable. Further, we find acceptable their proposed changes to TS 3/4.7.5 which reflects the installation of two 54 inch diameter butterfly valves to control water flow through the barrier dam.

In response to the licensee's original proposed change, we determined that deletion of the limitation on maximum water temperature was not justified. Our response emphasized that more certainty might be attached to the licensee's assertion of the low likelihood of intake canal temperature exceeding 95°F (34.9°C) if results from ongoing temperature monitoring in the canal is presented. We suggested that such data might also show the relative effect of additional heating of intake canal water due to recirculation, and that the potential for recirculation might have been one of the primary reasons for imposing the maximum intake water temperature limit of 95°F (34.9°C). We further expressed concern about the potential for high ambient temperatures in Big Mud Creek (the alternate source of emergency cooling water), although this was not directly addressed in the subject TS. Since it was not demonstrated to be otherwise, we assumed that ambient temperatures of 95°F or greater in Big Mud Creek may occur during the life of the plant, and that an ambient temperature greater than the design inlet temperature of 95°F (34.9°C) would not provide adequate cooling to place the plant in a safe shutdown mode.

FPL's response, dated May 26, 1982, documenting their position regarding UHS ambient temperatures is summarized below.

- a. The licensee reviewed their records of ambient water temperature from March 1976 to May 1981 and found no occasion where the average daily intake canal temperature exceeded 95°F (34.9°C). Sample data supportive of this finding was submitted in Attachment A to the response.
- b. Water temperature was measured at 4 points in Big Mud Creek monthly from April 1977 to March 1979. During the year, temperatures ranged from 14.6°C (50.3°F) to 32.0°C (89.6°F) at the surface and from 14.3°C (57.7°F) to 23.2°C (73.8°F) at the bottom. Bottom temperatures tended to remain low and were especially stable from May through December. These findings were corroborated by respective graphical summaries in Attachment B to their response.
- c. The potential for recirculation of warm water from the discharge canal entering the intake canal was treated in detail in Amendment 5 to St. Lucie-2 Environmental Report. Based upon both mathematical modes and the physical model studies, it was concluded that with both Units 1 and 2 in operation, the temperature rise attributable to recirculation would be small compared to natural ambient temperature variations, and should pose no significant problems for plant operation. Additionally, no recirculation effects have been detected during the six years of Unit 1 operation. Unit 2 discharge piping extends farther away from the shore than that of

Unit 1, and is provided with a more efficient diffuser design (Unit 2 FES-OL, Section 4.2.4). There should be no major recirculation attending Unit 2 operation.

- d. Surface water temperatures measured in the vicinity of the discharge canal outfall to the Atlantic Ocean from July 1971 to July 1974, and February 1976 to December 1978, disclosed that the maximum temperature did not exceed 86°F (30°C) (Attachment C to licensee's response).

FPL concluded that the information provided in their response for additional information represents a body of data sufficient to demonstrate that exceeding 95°F (34.9°C) in either Big Mud Creek or the intake canal is not a credible event. Further, the analytical work undertaken for St. Lucie-2 ER-OL demonstrates that recirculation poses no significant impact attending operation of both Units 1 and 2.

Based upon our review of the licensee's response and other pertinent documents including the FES-CP, ER-OL for St. Lucie Unit No. 2 and St. Lucie Unit No. 1 Annual Non-Radiological Environmental Monitoring Reports for 1980 and 1981, we agree with their proposed changes regarding deletion of the limitations on maximum water temperature in TS 3/4.7.5 and the applicable surveillance requirements in 4.7.5.1.1.

Environmental Consideration

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated, does not create the possibility of an accident of a type different from any evaluated previously, and does not involve a significant reduction in a margin of safety, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: December 3, 1982

Principal Contributors:

A. Cunningham
D. Wagner

UNITED STATES NUCLEAR REGULATORY COMMISSIONDOCKET NO. 50-335FLORIDA POWER & LIGHT COMPANYNOTICE OF ISSUANCE OF AMENDMENT TO FACILITY
OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 54 to Facility Operating License No. DPR-67, issued to Florida Power & Light Company (the licensee), which revised Technical Specifications for operation of the St. Lucie Plant, Unit No. 1 (the facility), located in St. Lucie County, Florida. The amendment is effective as of the date of issuance.

The amendment revises Technical Specification 3/4.7.5 to reflect the new Ultimate Heat Sink flow barrier configuration and deletes the maximum water temperature limitation.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment was not required since this amendment does not involve a significant hazards consideration.

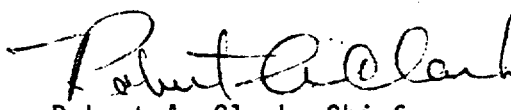
- 2 -

The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of this amendment.

For further details with respect to this action, see (1) the application for amendment dated November 16, 1978, superseded January 8, 1981 and supplemented May 26, 1982, (2) Amendment No. 54 to License No. DPR-67 and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C. and at the Indian River Junior College Library, 3209 Virginia Avenue, Ft. Pierce, Florida. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Licensing.

Dated at Bethesda, Maryland, this 3rd day of December, 1982.

FOR THE NUCLEAR REGULATORY COMMISSION


Robert A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing