

May 30, 1996

DISTRIBUTION

See attached sheet

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

SUBJECT: ST. LUCIE UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS RE: EMERGENCY
CORE COOLING SYSTEM SUBSYSTEMS DURING SHUTDOWN
(TAC NOS. M94519 AND M94520)

Dear Mr. Plunkett:

The Commission has issued the enclosed Amendment Nos. 143 and 83 to Facility Operating License Nos. DPR-67 and NPF-16 for the St. Lucie Plant, Unit Nos. 1 and 2. These amendments consist of changes to the Technical Specifications (TS) in response to your application dated January 4, 1996.

These amendments rectify a discrepancy in TS 3.5.3, and provide assurance that administrative controls for High Pressure Safety Injection pumps remain effective in the lower operational modes.

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
Leonard A. Wiens, Senior Project Manager
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket Nos. 50-335 and 50-389

Enclosures:

1. Amendment No. 143 to DPR-67
2. Amendment No. 83 to NPF-16
3. Safety Evaluation

cc w/enclosures: See next page

FILENAME - G:\STLUCIE\SL94519.AMD

OFFICE	LA:PDII-1	PM:PDII-3	D:PDII-3	OGC	BC: SRXB
NAME	Dunnington ^{ED}	LWiens ^{JW}	FHebdon ^H	^{WJ}	RJONAS RD
DATE	4/26/96	4/26/96	5/30/96	5/21/96	4/29/96
COPY	Yes/No	Yes/No	Yes/No	Yes/No	

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St. Lucie Plant

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DATED: May 30, 1996

AMENDMENT NO. 143 TO FACILITY OPERATING LICENSE NO. DPR-67 - ST. LUCIE, UNIT 1
AMENDMENT NO. 83 TO FACILITY OPERATING LICENSE NO. NPF-16 - ST. LUCIE, UNIT 2

Docket File

PUBLIC

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

FLORIDA POWER & LIGHT COMPANY

DOCKET NO. 50-335

ST. LUCIE PLANT UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 143
License No. DPR-67

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Florida Power & Light Company, et al. (the licensee), dated January 4, 1996, 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. 143, 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 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Frederick J. Heddon, 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 30, 1996

ATTACHMENT TO LICENSE AMENDMENT NO. 143
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.

Remove Pages

3/4 5-7
B 3/4 5-1

Insert Pages

3/4 5-7
B 3/4 5-1

EMERGENCY CORE COOLING SYSTEMS

ECCS SUBSYSTEMS - $T_{avg} < 325^{\circ}\text{F}$

LIMITING CONDITION FOR OPERATION

- 3.5.3 As a minimum, one ECCS subsystem comprised of the following shall be OPERABLE:
- In MODES 3* and 4#, one ECCS subsystem composed of one OPERABLE high pressure safety injection pump and one OPERABLE flow path capable of taking suction from the refueling water storage tank on a safety injection actuation signal and automatically transferring suction to the containment sump on a sump recirculation actuation signal.
 - Prior to decreasing the reactor coolant system temperature below 270°F a maximum of only one high pressure safety injection pump shall be OPERABLE with its associated header stop valve open.
 - Prior to decreasing the reactor coolant system temperature below 236°F all high pressure safety injection pumps shall be disabled and their associated header stop valves closed except as allowed by Specifications 3.1.2.1 and 3.1.2.3.

APPLICABILITY: MODES 3* and 4.
MODES 5 and 6 when the Pressurizer manway cover is in place and the reactor vessel head is on.

ACTION:

- With no ECCS subsystems OPERABLE in MODES 3* and 4#, immediately restore one ECCS subsystem to OPERABLE status or be in COLD SHUTDOWN within 20 hours.
- With RCS temperature below 270°F and with more than the allowed high pressure safety injection pump OPERABLE or injection valves and header isolation valves open, immediately disable the high pressure safety injection pump(s) or close the header isolation valves.
- In the event the ECCS is actuated and injects water into the Reactor Coolant System, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 90 days describing the circumstances of the actuation and the total accumulated actuation cycles to date.

SURVEILLANCE REQUIREMENTS

- 4.5.3.1 The ECCS subsystem shall be demonstrated OPERABLE per the applicable Surveillance Requirements of 4.5.2.
- 4.5.3.2 The high pressure safety injection pumps shall be verified inoperable and the associated header stop valves closed prior to decreasing below the above specified Reactor Coolant System temperature and once per month when the Reactor Coolant System is at refueling temperatures.

* With pressurizer pressure <1750 psia.

REACTOR COOLANT SYSTEM cold leg temperature above 250°F.

BASES

3/4.5.1 SAFETY INJECTION TANKS

The OPERABILITY of each of the RCS safety injection tanks ensures that a sufficient volume of borated water will be immediately forced into the reactor core through each of the cold legs in the event the RCS pressure falls below the pressure of the safety injection tanks. This initial surge of water into the core provides the initial cooling mechanism during large RCS pipe ruptures.

The limits on safety injection tank volume, boron concentration and pressure ensure that the assumptions used for safety injection tank injection in the accident analysis are met.

The limit of one hour for operation with an inoperable safety injection tank minimizes the time exposure of the plant to a LOCA event occurring concurrent with failure of an additional safety injection tank which may result in unacceptable peak cladding temperatures.

3/4.5.2 and 3/4.5.3 ECCS SUBSYSTEMS

The OPERABILITY of two separate and independent ECCS subsystems ensures that sufficient emergency core cooling capability will be available in the event of a LOCA assuming the loss of one subsystem through any single failure consideration. Either subsystem operating in conjunction with the safety injection tanks is capable of supplying sufficient core cooling to limit the peak cladding temperatures within acceptable limits for all postulated break sizes ranging from the double ended break of the largest RCS cold leg pipe downward. In addition, each ECCS subsystem provides long term core cooling capability in the recirculation mode during the accident recovery period.

The Surveillance Requirements provided to ensure OPERABILITY of each component ensure that at a minimum, the assumptions used in the accident analyses are met and that subsystem OPERABILITY is maintained.

The limitations on HPSI pump operability when the RCS temperature is $\leq 270^{\circ}\text{F}$ and $\leq 236^{\circ}\text{F}$, and the associated Surveillance Requirements provide additional administrative assurance that the pressure/temperature limits (Figures 3.4-2a and 3.4-2b) will not be exceeded during a mass addition transient mitigated by a single PORV. A limit on the maximum number of operable HPSI pumps is not necessary when the pressurizer manway cover or the reactor vessel head is removed.



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

FLORIDA POWER & LIGHT COMPANY
ORLANDO UTILITIES COMMISSION OF
THE CITY OF ORLANDO, FLORIDA
AND
FLORIDA MUNICIPAL POWER AGENCY
DOCKET NO. 50-389
ST. LUCIE PLANT UNIT NO. 2
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 83
License No. NPF-16

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Florida Power & Light Company, et al. (the licensee), dated January 4, 1996, 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.

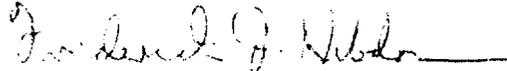
2. Accordingly, Facility Operating License No. NPF-16 is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and by amending paragraph 2.C.2 to read as follows:

2. Technical Specifications

- The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 83, 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 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 30, 1996

ATTACHMENT TO LICENSE AMENDMENT NO. 83

TO FACILITY OPERATING LICENSE NO. NPF-16

DOCKET NO. 50-389

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.

Remove Pages

3/4 5-7
B 3/4 5-2

Insert Pages

3/4 5-7
B 3/4 5-2

EMERGENCY CORE COOLING SYSTEMS

3/4.5.3 ECCS SUBSYSTEMS - T_{avg} LESS THAN 325 °F

LIMITING CONDITION FOR OPERATION

- 3.5.3 As a minimum, one ECCS subsystem comprised of the following shall be OPERABLE:
- One OPERABLE high-pressure safety injection pump, and
 - An OPERABLE flow path capable of taking suction from the refueling water tank on a Safety Injection Actuation Signal and automatically transferring suction to the containment sump on a Sump Recirculation Actuation Signal.

APPLICABILITY: MODES 3* and 4#.
Footnote # shall remain applicable in MODES 5 and 6 when the Pressurizer manway cover is in place and the reactor vessel head is on.

ACTION:

- With no ECCS subsystem OPERABLE, restore at least one ECCS subsystem to OPERABLE status within 1 hour or be in COLD SHUTDOWN within the next 20 hours.
- In the event the ECCS is actuated and injects water into the Reactor Coolant System, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 90 days describing the circumstances of the actuation and the total accumulated actuation cycles to date. The current value of the usage factor for each affected safety injection nozzle shall be provided in this Special Report whenever its value exceeds 0.70.

SURVEILLANCE REQUIREMENTS

- 4.5.3 The ECCS subsystem shall be demonstrated OPERABLE per the applicable Surveillance Requirements of 4.5.2.

* With pressurizer pressure less than 1750 psia.

One HPSI shall be rendered inoperable prior to entering MODE 5.

EMERGENCY CORE COOLING SYSTEMS

BASES

ECCS SUBSYSTEMS (Continued)

In Mode 3 with RCS pressure <1750 psia and in Mode 4, one OPERABLE ECCS subsystem is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the limited core cooling requirements.

The trisodium phosphate dodecahydrate (TSP) stored in dissolving baskets located in the containment basement is provided to minimize the possibility of corrosion cracking of certain metal components during operation of the ECCS following a LOCA. The TSP provided this protection by dissolving in the sump water and causing its final pH to be raised to greater than or equal to 7.0.

The requirement for one high pressure safety injection pump to be rendered inoperable prior to entering MODE 5, although the analysis supports actuation of safety injection in a water solid RCS with pressurizer heaters energized, provides additional administrative assurance that a mass addition pressure transient can be relieved by the operation of a single PORV or SDCRV. A limit on the maximum number of operable HPSI pumps is not necessary when the pressurizer manway cover or the reactor vessel head is removed.

The Surveillance Requirements provided to ensure OPERABILITY of each component ensure that at a minimum, the assumptions used in the accident analyses are met and that subsystem OPERABILITY is maintained. Surveillance Requirements for throttle valve position stops and flow balance testing provide assurance that proper ECCS flows will be maintained in the event of a LOCA. Maintenance of proper flow resistance and pressure drop in the piping system to each injection point is necessary to: (1) prevent total pump flow from exceeding runout conditions when the system is in its minimum resistance configuration, (2) provide the proper flow split between injection points in accordance with the assumptions used in the ECCS-LOCA analyses, and (3) provide an acceptable level of total ECCS flow to all injection points equal to or above that assumed in the ECCS-LOCA analyses. The requirement to dissolve a representative sample of TSP in a sample of RWT water provides assurance that the stored TSP will dissolve in borated water at the postulated post-LOCA temperatures.

3/4.5.4 REFUELING WATER TANK

The OPERABILITY of the Refueling Water Tank (RWT) as part of the ECCS ensures that a sufficient supply of borated water is available for injection by the ECCS in the event of a LOCA. The limits on RWT minimum volume and boron concentration ensure that (1) sufficient water is available within containment to permit recirculation cooling flow to the core, and (2) the reactor will remain subcritical in the cold condition following mixing of the RWT and the RCS water volumes with all control rods inserted except for the most reactive control assembly. These assumptions are consistent with the LOCA analyses.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 143 AND 83

TO FACILITY OPERATING LICENSE NO. DPR-67 AND NO. NPF-16

FLORIDA POWER AND LIGHT COMPANY, ET AL.

ST. LUCIE PLANT, UNIT NOS. 1 AND 2

DOCKET NOS. 50-335 AND 50-389

1.0 INTRODUCTION

By letter dated January 4, 1996, Florida Power and Light Company (FPL) requested that Appendix A of Facility Operating License DPR-67 for St. Lucie Unit 1 and NPF-16 for St. Lucie Unit 2 be amended to revise the Technical Specifications (TS) involving Emergency Core Cooling System (ECCS) subsystems during shutdown. The proposed amendments will change the APPLICABILITY statement for TS 3.5.3 to be consistent with the administrative controls on High Pressure Safety Injection (HPSI) pumps that were implemented to assure adequate Low Temperature Overpressure Protection (LTOP) at each St. Lucie unit. The changes consist of extending the stated APPLICABILITY to the lower operational modes and thereby assure that the technical requirements located within the LCO remain effective for the entire LTOP range.

2.0 BACKGROUND

Technical Specification 3.5.3 provides the limiting conditions for operation (LCO) for ECCS subsystems during shutdown.

St. Lucie Unit 1: The LTOP range is defined in Specification 1.16, and includes all reactor coolant system (RCS) temperatures $\leq 304^{\circ}\text{F}$ (during heatup) or $\leq 281^{\circ}\text{F}$ (during cooldown), when the RCS has pressure boundary integrity. To provide assurance that assumptions used in the analysis for low temperature overpressure mitigation remain valid, certain restrictions on HPSI pump operability are established in LCO 3.5.3. Specification 3.5.3.b allows a maximum of only one HPSI pump to be OPERABLE prior to decreasing the RCS temperature below 270°F . Specification 3.5.3.c requires that all HPSI pumps be disabled prior to decreasing the RCS temperature below 236°F .

St. Lucie Unit 2: The LTOP range is defined in Specification 1.16, and includes all RCS temperatures $\leq 247^{\circ}\text{F}$ (during heatup) and $\leq 230^{\circ}\text{F}$ (during

cooldown), when the RCS is not vented to containment by an opening of at least 3.58 square inches. Similar to Unit 1, a restriction on HPSI pump operability is established in LCO 3.5.3 to assure that assumptions used in the analysis for low temperature overpressure mitigation remain valid. A footnote (#) is appended to the LCO that requires one HPSI pump to be rendered inoperable prior to entering MODE 5.

3.0 DESCRIPTION OF PROPOSED CHANGES

For Unit 1, LCO 3.5.3: The APPLICABILITY statement is revised to read,

**MODES 3* and 4.
MODES 5 and 6 when the Pressurizer manway cover is in place
and the reactor vessel head is on.**

For Unit 2, LCO 3.5.3: The following statement is added to the APPLICABILITY statement,

**Footnote # shall remain applicable in MODES 5 and 6 when the
Pressurizer manway cover is in place and the reactor vessel
head is on.**

The Bases section which discusses HPSI pump operability limitations in the LTOP range is also updated by adding a summary statement.

4.0 EVALUATION

Specification 3.0.1 establishes the Applicability statement within each individual specification as the requirement for when (i.e., in which operational MODES or other specified conditions) conformance to an LCO is required for safe operation of the facility.

In the case of Specification 3.5.3, conditions within the LCO provide restrictions on HPSI pump operability that were established as administrative controls to limit the potential for a low temperature overpressure transient, and preserve the validity of assumptions used in the low temperature overpressure analysis for each St. Lucie unit. However, the APPLICABILITY statement does not include the full range of operational modes and conditions that require these restrictions, e.g., the LTOP range includes MODES 5 and 6. This inconsistency creates an ambivalent specification in that the APPLICABILITY statement is in conflict with the technical requirements within the LCO, as well as the LTOP safety analysis.

The proposed revision to the APPLICABILITY statement for Specification 3.5.3 clearly shows that conformance to the LCO is required for plant conditions that cover the entire LTOP range, including MODES 5 and 6 when the Pressurizer manway cover is in place and the reactor vessel head is on. LTOP events from

the use of HPSI pumps when the Pressurizer manway cover or the reactor vessel head is removed are not credible. Thus, assurance is provided that the effectiveness of administrative controls established in the LCO to limit the number of OPERABLE HPSI pumps will not be diminished.

5.0 TECHNICAL FINDING

The staff has reviewed the FPL proposed changes and concludes that the revision to Specification 3.5.3 for each St. Lucie unit rectifies an error in the APPLICABILITY statement. The ECCS subsystem limiting conditions for operation remain the same as previously approved. Additionally, the proposed changes are consistent with the Standard Technical Specifications. Based on the above evaluation, the staff has determined that St. Lucie, Units 1 and 2, can be operated safely without undue risk to the health and safety of the public and there is reasonable assurance that the RCS will not be overpressurized when the plant is operated in accordance with the LCO. For those reasons the staff finds the proposed changes acceptable.

6.0 STATE CONSULTATION

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

7.0 ENVIRONMENTAL CONSIDERATION

These amendments change a requirement with respect to 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 (61 FR 5813). 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.

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.

Principal Contributor: J. Norris

Dated: May 30, 1996