November 14, 2000

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 REGARDING TECHNICAL SPECIFICATION CHANGES FOR THE PRESSURIZER SAFETY VALVE AND MAIN STEAM SAFETY VALVE SETPOINTS (TAC NOS. MA8109 AND MA8110)

Dear Mr. Plunkett:

The Commission has issued the enclosed Amendments Nos. 166 and 110 to Facility Operating Licenses Nos. DPR-67 and NPF-16 for the St. Lucie Plant, Units Nos. 1 and 2. These amendments consist of changes to the Technical Specifications in response to your application dated January 19, 2000, as supplemented July 19, 2000.

These amendments will increase the setpoint tolerances for the pressurizer and main steam safety valves.

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,
/RA/
Kahtan N. Jabbour, Senior Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-335 and 50-389

Enclosures:
1. Amendment No. 166 to DPR-67
2. Amendment No. 110 to NPF-16
3. Safety Evaluation

cc w/enclosures: See next page

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NRR-058

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

November 14, 2000

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 REGARDING TECHNICAL SPECIFICATION CHANGES FOR THE PRESSURIZER SAFETY VALVE AND MAIN STEAM SAFETY VALVE SETPOINTS (TAC NOS. MA8109 AND MA8110)

Dear Mr. Plunkett:

The Commission has issued the enclosed Amendments Nos. 166 and 110 to Facility Operating Licenses Nos. DPR-67 and NPF-16 for the St. Lucie Plant, Units Nos. 1 and 2. These amendments consist of changes to the Technical Specifications in response to your application dated January 19, 2000, as supplemented July 19, 2000.

These amendments will increase the setpoint tolerances for the pressurizer and main steam safety valves.

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

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Docket Nos. 50-335 and 50-389

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1. Amendment No. 166 to DPR-67
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cc w/enclosures: See next page

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. 166
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 January 19, 2000, as supplemented July 19, 2000, 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.166 , 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

Richard P. Correia

Richard P. Correia, 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: November 14, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 166

TO FACILITY OPERATING LICENSE NO. DPR-67

DOCKET NO. 50-335

Replace the following pages of the Appendix A Technical Specifications with the attached pages. The revised pages are identified by amendment number and contain marginal lines indicating the area of change.

Remove Pages	Insert Pages
IV	IV
3/4 4-2	3/4 4-2
3/4 4-3	3/4 4-3
B 3/4 4-1	B 3/4 4-1
B 3/4 4-2	B 3/4 4-2
3/4 7-1	3/4 7-1
3/4 7-3	3/4 7-3
B 3/4 7-2	B 3/4 7-2

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LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

SECTION PAGE

DELETED

REACTOR COOLANT SYSTEM

SAFETY VALVES - OPERATING

LIMITING CONDITION FOR OPERATION

3.4.3 All pressurizer code safety valves shall be OPERABLE with a lift setting of $\geq$ 2422.8 psig and $\leq$ 2560.3 psig.

APPLICABILITY: MODES 1, 2, 3, and 4 with all RCS cold leg temperatures > 281°F.

ACTION:

a. With one pressurizer code safety valve inoperable, either restore the inoperable valve to OPERABLE status within 15 minutes or be in HOT STANDBY within 6 hours and in HOT SHUTDOWN within the next 6 hours.

b. With two or more pressurizer code safety valves inoperable, be in HOT STANDBY within 6 hours and in HOT SHUTDOWN with all RCS cold leg temperatures $\leq$ 281°F within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.4.3 Verify each pressurizer code safety valves is OPERABLE in accordance with the Inservice Testing Program. Following testing, as-left lift settings shall be within +/- 1% of 2500 psia.

3/4.4.1 REACTOR COOLANT LOOPS AND COOLANT CIRCULATION

The plant is designed to operate with both reactor coolant loops and associated reactor coolant pumps in operation, and maintain DNBR above the DNBR limit during all normal operations and anticipated transients. In MODES 1 and 2 with one reactor coolant loop not in operation, this specification requires that the plant be in at least HOT STANDBY within 1 hour.

In MODE 3, a single reactor coolant loop provides sufficient heat removal capability for removing decay heat; however, single failure considerations require that two loops be OPERABLE.

In MODE 4, and in MODE 5 with reactor coolant loops filled, a single reactor coolant loop or shutdown cooling loop provides sufficient heat removal capability for removing decay heat; but single failure considerations require that at least two loops (either shutdown cooling or RCS) be OPERABLE.

In MODE 5 with reactor coolant loops not filled, a single shutdown cooling loop provides sufficient heat removal capability for removing decay heat; but single failure considerations and the unavailability of the steam generators as a heat removing component, require that at least two shutdown cooling loops be OPERABLE.

The operation of one Reactor Coolant Pump or one shutdown cooling pump provides adequate flow to ensure mixing, prevent stratification and produce gradual reactivity changes during boron concentration reductions in the Reactor Coolant System. The reactivity change rate associated with boron reductions will, therefore, be within the capability of operator recognition and control.

The restrictions on starting a Reactor Coolant Pump are provided to prevent RCS pressure transients, caused by energy additions from the secondary system, which could exceed the limits of Appendix G to 10 CFR 50. The RCS will be protected against overpressure transients and will not exceed the limits of Appendix G by restricting starting of the Reactor Coolant Pumps to when the secondary water temperature of each steam generator is less than 30°F above each of the Reactor Coolant System cold leg temperatures.

3/4.4.3 SAFETY VALVES

The pressurizer code safety valves operate to prevent the RCS from being pressurized above its Safety Limit of 2750 psia. Each safety valve is designed to relieve 2×10^5 lbs per hour of saturated steam at the valve setpoint. The relief capacity of a single safety valve is adequate to relieve any overpressure condition which could occur during shutdown. In the event that no safety valves are OPERABLE, an operating shutdown cooling loop, connected to the RCS, provides overpressure relief capability and will prevent RCS overpressurization.

3/4.4.2 and 3/4.4.3 SAFEY VALVES (continued)

During operation, all pressurizer code safety valves must be OPERABLE to prevent the RCS from being pressurized above its safety limit of 2750 psia. The combined relief capacity of these valves is sufficient to limit the Reactor Coolant System pressure to within its Safety Limit of 2750 psia following a complete loss of turbine generator load while operating at RATED THERMAL POWER and assuming no reactor trip until the first Reactor Protective System trip setpoint (Pressurizer Pressure-High) is reached (i.e., no credit is taken for a direct reactor trip on the loss of turbine) and also assuming no operation of the pressurizer power operated relief valve or steam dump valves.

Surveillance Requirements are specified in the Inservice Testing Program. Pressurizer code safety valves are to be tested in accordance with the requirements of Section XI of the ASME Code, which provides the activities and the frequency necessary to satisfy the Surveillance Requirements. No additional requirements are specified.

The pressurizer code safety valve as-found setpoint is 2500 psia +3/-2.5% for OPERABILITY; however, the valves are reset to 2500 psia +/- 1% during the Surveillance to allow for drift. The LCO is expresed in units of psig for consistency with implementing procedures.

3/4.4.4 PRESSURIZER

A steam bubble in the pressurizer ensures that the RCS is not a hydraulically solid system and is capable of accommodating pressure surges during operation. The steam bubble also protects the pressurizer code safety valves and power operated relief valve against water relief. The power operated relief valve and steam bubble function to relieve RCS pressure during all design transients. Operation of the power operated relief valve in conjunction with a reactor trip on a Pressurizer-Pressure-High signal minimizes the undesirable opening of the spring-loaded pressurizer code safety valves. The required pressurizer heater capacity is capable of maintaining natural circulation sub-cooling. Operability of the heaters, which are powered by a diesel generator bus, ensures ability to maintain pressure control even with loss of offsite power.

3/4.4.5 STEAM GENERATORS

One OPERABLE steam generator provides sufficient heat removal capability to remove decay heat after a reactor shutdown. The requirement for two steam generators capable of removing decay heat, combined with the requirements of Specifications 3.7.1.1, 3.7.1.2 and 3.7.1.3 ensures adequate decay heat removal capabilities for RCS temperatures greater than 325°F if one steam generator becomes inoperable due to single failure considerations. Below 325°F, decay heat is removed by the shutdown cooling system.

The Surveillance Requirements for inspection of the steam generator tubes ensure that the structural integrity of this portion of the RCS will be maintained. The program for inservice inspection of steam generator tubes is based on a modification of Regulatory Guide 1.83, Revision 1. Inservice inspection of steam generator tubing is essential in order to maintain surveillance of the conditions of the tubes in the event that there is evidence of mechanical damage or progressive degradation due to design, manufacturing errors, or in-service conditions that lead to corrosion. Inservice inspection of Steam generator tubing also provides a means of characterizing the nature and cause of any tube degradation so that corrective measures can be taken.

3/4.7 PLANT SYSTEMS

3.4.7.1 TURBINE CYCLE

SAFETY VALVES

LIMITING CONDITION FOR OPERATION

3.7.1.1 All main steam line code safety valves shall be OPERABLE with lift settings as specified in Table 4.7-1.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

a. With both reactor coolant loops and associated steam generators in operation and with one or more main steam line code safety valves inoperable, operation in MODES 1, 2 and 3 may proceed provided that within 4 hours, either the inoperable valve is restored to OPERABLE status or the Power Level-High trip setpoint is reduced per Table 3.7-1; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.1.1 Verify each main steam line code safety valve is OPERABLE in accordance with the Inservice Testing Program. Following testing, as-left lift settings shall be within +/- 1% of 1000 psia for valves 8201 through 8208, and within +/- 1% of 1040 psia for valves 8209 through 8216 specified in Table 4.7-1.

TABLE 4.7-1

STEAM LINE SAFETY VALVES PER LOOP

	VALVE NUMBER		LIFT SETTING (+ 1% to - 3%)
	Header A	Header B	
a.	8201	8205	$\geq$ 955.3 psig and $\leq$ 995.3 psig
b.	8202	8206	$\geq$ 955.3 psig and $\leq$ 995.3 psig
c.	8203	8207	$\geq$ 955.3 psig and $\leq$ 995.3 psig
d.	8204	8208	$\geq$ 955.3 psig and $\leq$ 995.3 psig
e.	8209	8213	$\geq$ 994.1 psig and $\leq$ 1035.7 psig
f.	8210	8214	$\geq$ 994.1 psig and $\leq$ 1035.7 psig
g.	8211	8215	$\geq$ 994.1 psig and $\leq$ 1035.7 psig
h.	8212	8216	$\geq$ 994.1 psig and $\leq$ 1035.7 psig

106.5 = Power Level-High Trip Setpoint for two loop operation

X = Total relieving capacity of all safety valves per steam line in lbs/hour (6.192×10^6 lbs/hr.)

Y = Maximum relieving capacity of any one safety valve in lbs/hour (7.74×10^6 lbs/hr.)

Surveillance Requirement 4.7.1.1 verifies the OPERABILITY of the MSSVs by the verification of each MSSV lift setpoint in accordance with the Inservice Testing Program. The MSSV setpoints are 1000 psia +1/-3% (4 valves each header) and 1040 psia +1/-3% (4 valves each header) for OPERABILITY; however, the valves are reset to 1000 psia +/- 1% and 1040 psia +/- 1%, respectively, during the Surveillance to allow for drift. The LCO is expressed in units of psig for consistency with implementing procedures.

The provisions of Specification 3.0.4 do not apply. This allows entry into and operation in MODE 3 prior to performing the Surveillance Requirements so that the MSSVs may be tested under hot conditions.

3/4.7.1.2 AUXILIARY FEEDWATER PUMPS

The OPERABILITY of the auxiliary feedwater pumps ensures that the Reactor Coolant System can be cooled down to less than 325°F from normal operating conditions in the event of a total loss of off-site power.

Any two of the three auxiliary feedwater pumps have the required capacity to provide sufficient feedwater flow to remove reactor decay heat and reduce the RCS temperature to 325°F where the shutdown cooling system may be placed into operation for continued cooldown.

3/4.7.1.3 CONDENSATE STORAGE TANK

The OPERABILITY of the condensate storage tank with the minimum water volume ensures that sufficient water is available for cooldown of the Reactor Coolant System to less than 325°F in the event of a total loss of off-site power. The minimum water volume is sufficient to maintain the RCS at HOT STANDBY conditions for 8 hours with steam discharge to atmosphere.

3/4.7.1.4 ACTIVITY

The limitations on secondary system specific activity ensure that the resultant off-site radiation dose will be limited to a small fraction of 10 CFR Part 100 limits in the event of a steam line rupture. The dose calculations for an assumed steam line rupture include the effects of a coincident 1.0 GPM primary to secondary tube leak in the steam generator of the affected steam line and a concurrent loss of offsite electrical power. These values are consistent with the assumptions used in the accident analyses.

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. 110
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 19, 2000, as supplemented July 19, 2000, 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. <u>Technical Specifications</u>

      The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 110 , 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

Richard P. Correia

Richard P. Correia, 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: November 14, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 110

TO FACILITY OPERATING LICENSE NO. NPF-16

DOCKET NO. 50-389

Replace the following pages of the Appendix A Technical Specifications with the attached pages. The revised pages are identified by amendment number and contain marginal lines indicating the area of change.

Remove Pages	Insert Pages
VI	VI
3/4 4-7	3/4 4-7
3/4 4-8	3/4 4-8
B 3/4 4-2	B 3/4 4-2
3/4 7-1	3/4 7-1
3/4 7-3	3/4 7-3
B 3/4 7-1	B 3/4 7-1

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LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

DELETED

REACTOR COOLANT SYSTEM

OPERATING

LIMITING CONDITION FOR OPERATION

3.4.2.2 All pressurizer code safety valves shall be OPERABLE with a lift setting of $\geq$ 2435.3 psig and $\leq$ 2535.3 psig.*

APPLICABILITY: MODES 1, 2, 3, and 4 with all RCS cold leg temperatures > 230°F.

ACTION:

a. With one pressurizer code safety valve inoperable, either restore the inoperable valve to OPERABLE status within 15 minutes or be in HOT STANDBY within 6 hours and in HOT SHUTDOWN within the next 6 hours.

b. With two or more pressurizer code safety valves inoperable, be in HOT STANDBY within 6 hours and in HOT SHUTDOWN with all RCS cold leg temperatures at $\leq$ 230°F within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.4.2.2 Verify each pressurizer code safety valve is OPERABLE in accordance with the Inservice Testing Program. Following testing, as-left lift settings shall be within +/- 1% of 2500 psia.

* The lift setting pressure shall correspond to ambient conditions of the valve at nominal operating temperature and pressure.

SAFETY VALVES (continued)

During operation, all pressurizer code safety valves must be OPERABLE to prevent the RCS from being pressurized above its safety limit of 2750 psia. The combined relief capacity of these valves is sufficient to limit the system pressure to within its Safety Limit of 2750 psia following a complete loss of turbine generator load while operating at RATED THERMAL POWER and assuming no reactor trip until the first Reactor Protective System trip setpoint (Pressurizer Pressure-High) is reached (i.e., no credit is taken for a direct reactor trip on the loss of turbine) and also assuming no operation of the pressurizer power-operated relief valve or steam dump valves.

Surveillance Requirements are specified in the Inservice Testing Program. Pressurizer code safety valves are to be tested in accordance with the requirements of Section XI of the ASME Code, which provides the activities and the frequency necessary to satisfy the Surveillance Requirements. No additional requirements are specified.

The pressurizer code safety valve as-found setpoint is 2500 psia +/- 2% for OPERABILITY; however, the valves are reset to 2500 psia +/- 1% during the Surveillance to allow for drift. The LCO is expressed in units of psig for consistency with implementing procedures.

3/4.4.3 PRESSURIZER

A OPERABLE pressurizer provides pressure control for the Reactor Coolant System during operations with both forced reactor coolant flow and with natural circulation flow. The minimum water level in the pressurizer assures the pressurizer heaters, which are required to achieve and maintain pressure control, remain covered with water to prevent failure, which could occur if the heaters were energized uncovered. The maximum water level in the pressurizer ensures that this parameter is maintained within the envelope of operation assumed in the safety analysis. The maximum water level also ensures that the RCS is not a hydraulically solid system and that a steam bubble will be provided to accommodate pressure surges during operation. The steam bubble also protects the pressurizer code safety valves against water relief. The requirement to verify that on an Engineered Safety Features Actuation test signal concurrent with a loss of offsite power the pressurizer heaters are automatically shed from the emergency power sources is to ensure that the non-Class 1E heaters do not reduce the reliability of or overload the emergency power source. The requirement that a minimum number of pressurizer heaters be OPERABLE enhances the capability to control Reactor Coolant System pressure and establish and maintain natural circulation.

3/4.7 PLANT SYSTEMS

3/4.7.1 TURBINE CYCLE

SAFETY VALVES

LIMITING CONDITION FOR OPERATION

3.7.1.1 All main steam line code safety valves shall be OPERABLE with lift settings as shown in Table 3.7-2.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

a. With both reactor coolant loops and associated steam generators in operation and with one or more main steam line code safety valves inoperable, operation in MODES 1, 2 and 3 may proceed provided that, within 4 hours, either the inoperable valve is restored to OPERABLE status or the Power Level-High trip setpoint is reduced per Table 3.7-1; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. The provisions of specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.1.1 Verify each main steam line code safety valve is OPERABLE in accordance with the Inservice Testing Program. Following testing, as-left lift settings shall be within +/- 1% of 1000 psia for valves 8201 through 8208, and within +/- 1% of 1040 psia for valves 8209 through 8216 specified in Table 3.7-2.

TABLE 3.7-2

STEAM LINE SAFETY VALVES PER LOOP

	VALVE NUMBER		LIFT SETTING (+ 1% to - 3%)
	Header A	Header B	
a.	8201	8205	$\geq$ 955.3 psig and $\leq$ 995.3 psig
b.	8202	8206	$\geq$ 955.3 psig and $\leq$ 995.3 psig
c.	8203	8207	$\geq$ 955.3 psig and $\leq$ 995.3 psig
d.	8204	8208	$\geq$ 955.3 psig and $\leq$ 995.3 psig
e.	8209	8213	$\geq$ 994.1 psig and $\leq$ 1035.7 psig
f.	8210	8214	$\geq$ 994.1 psig and $\leq$ 1035.7 psig
g.	8211	8215	$\geq$ 994.1 psig and $\leq$ 1035.7 psig
h.	8212	8216	$\geq$ 994.1 psig and $\leq$ 1035.7 psig

3/4.7 PLANT SYSTEMS

BASES

3/4.7.1 TURBINE CYCLE

3/4.7.1.1 SAFETY VALVES

The OPERABILITY of the main steam line code safety valves ensures that the secondary system pressure will be limited to within 110% (1100 psia) of its design pressure of 1000 psia during the most severe anticipated system operational transient. The maximum relieving capacity is associated with a turbine trip from 100% RATED THERMAL POWER coincident with an assumed loss of condenser heat sink (i.e., no steam bypass to the condenser).

The specified valve lift settings and relieving capacities are in accordance with the requirements of Section III of the ASME Boiler and Pressure Vessel Code, 1971 Edition, and ASME Code for Pumps and Valves, Class II. The total relieving capacity for all valves on all of the steam lines is 12.49×10^6 lbs/hr which is 103.8% of the total secondary steam flow of 12.03×10^6 lbs/hr at 100% RATED THERMAL POWER. A minimum of two OPERABLE safety valves per steam generator ensures that sufficient relieving capacity is available for removing decay heat.

STARTUP and/or POWER OPERATION is allowable with safety valves inoperable within the limitations of the ACTION requirements on the basis of the reduction in secondary system steam flow and THERMAL POWER required by the reduced reactor trip settings of the Power Level-High channels. The reactor trip setpoint reductions are derived on the following bases:

For two loop operation:

$$SP = \left[\frac{(X)-(Y)(V)}{X} \times (107.0)\right] - 0.9$$

where:

SP	=	reduced reactor trip setpoint in percent of RATED THERMAL POWER
V	=	maximum number of inoperable safety valves per steam line
107.0	=	Power Level-High Trip Setpoint for two loop operation
0.9	=	Equipment processing uncertainty
X	=	Total relieving capacity of all safety valves per steam line in lbs/hour (6.247×10^6 lbs/hr)
Y	=	Maximum relieving capacity of any one safety valve in lbs/hour (7.74×10^5 lbs/hr)

Surveillance Requirement 4.7.1.1 verifies the OPERABILITY of the MSSVs by the verification of each MSSV lift setpoint in accordance with the Inservice Testing Program. The MSSV setpoints are 1000 psia +1/-3% (4 valves each header) and 1040 psia +1/-3% (4 valves each header) for OPERABILITY; however, the valves are reset to 1000 psia +/- 1% and 1040 psia +/- 1%, respectively, during the Surveillance to allow for drift. The LCO is expressed in units of psig for consistency with implementing procedures.

The provisions for Specification 3.0.4 do not apply. This allows entry into and operation in MODE 3 prior to performing the Surveillance Requirement so that the MSSVs may be tested under hot conditions.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

CONCERNING CHANGES TO TECHNICAL SPECIFICATIONS

FOR SETPOINT TOLERANCES OF PRESSURIZER SAFETY VALVES

AND MAIN STEAM SAFETY VALVES

RELATED TO AMENDMENT NOS. 166 AND 110

TO FACILITY OPERATING LICENSES NOS. DPR-67 AND NPF-16

FLORIDA POWER AND LIGHT COMPANY, ET AL.

ST. LUCIE PLANT, UNITS NOS. 1 AND 2

DOCKET NOS. 50-335 AND 50-389

INTRODUCTION

By letter dated January 19, 2000 (Ref. 1), as supplemented July 19, 2000 (Ref. 2), Florida Power and Light Company (FPL, the licensee), submitted proposed changes to the St. Lucie Units 1 and 2 Technical Specifications (TSs). The proposed TSs would increase the setpoint tolerances for the pressurizer safety valves (PSVs) and main steam safety valves (MSSVs).

Previous TS 3.4.3 for Unit 1 and TS 3.4.2.2 for Unit 2, "Safety Valves - Operating," require that all PSVs be operable with a lift setting of 2500 psia ±1%. The proposed TSs would change the PSV setpoint tolerances from the previous requirements of ±1% of 2500 psia to +3% and -2.5% of 2500 psia for Unit 1 and ±2% of 2500 psia for Unit 2. Also, previous TS Table 4.7-1 for Unit 1 and Table 3.7-2 for Unit 2, "Steam Line Safety Valves," require that the setpoints for the MSSVs be within ±1% of their specified setpoints. The proposed TSs revise the MSSV setpoint tolerances from the previous requirements of ±1% to +1% and -3% for both units.

The licensee also proposed TS changes requiring that following the valve setpoint testing, the lift setpoints of PSVs and MSSVs be set within ±1% of their specific setpoints.

The TS changes proposed by the licensee were to minimize TS violations caused by setpoint drifting. The July 19, 2000, submittal provided clarifying information that did not change the scope of the original request or change the initial no significant hazards consideration determination.

2.0 EVALUATION

2.1 Setpoint Tolerances -- St. Lucie Unit 1

The main design purposes of the PSVs and MSSVs are to provide overpressure protection for the reactor coolant system (RCS) and the steam generator (SG) secondary system, respectively. In assessing the effects of the TS changes on the design-basis-event analyses, the licensee evaluated the existing transient and accident analyses and identified that the loss of external load event (LOEL), resulting in highest pressurizer pressure, was the case whose consequences were most sensitive to the proposed changes in valve setpoint tolerances.

The licensee indicated that the analysis of record for the LOEL assumed that the safety valves would open only when the calculated pressures reach values corresponding to the specific valve setpoints with the associated tolerances of +3% for PSVs and +1% for MSSVs. The staff finds that the analysis of record (in EMF-96-135) was previously approved for license Amendment No. 145, and the assumed values for positive setpoint tolerances are consistent with those for the proposed TSs. Therefore, the staff concludes that the proposed positive tolerances for PSVs and MSSVs are acceptable.

The licensee stated that negative tolerances for PSV and MSSV setpoints had no inadvertent affect on the limiting LOEL since the opening of PSVs and MSSVs would provide heat sinks for removal of energy from the RCS and the use of PSV and MSSV setpoints with inclusion of negative tolerances would result in an earlier opening of the valves and decreased the peak pressurizer pressure during an LOEL, which was the limiting case from the view point of the highest peak pressurizer pressure. The staff agrees.

During the course of the review, the staff pointed out that an earlier opening of MSSVs would increase dose releases during a steam generator tube rupture (SGTR) event and requested the licensee to evaluate the effect of a negative setpoint tolerance for MSSVs on the SGTR event. In response (Ref. 2), the licensee indicated that the analysis of record for the SGTR event assumed that the atmospheric dump valves were opened manually following the reactor trip. This assumption resulted in increased steam releases to the atmosphere and conservative radiological releases. The calculated SG pressure in the SGTR analysis remained below the MSSV setpoint with -3% tolerance. Therefore, a negative tolerance for MSSVs would not inadvertently affect the result of the analysis of record for the SGTR event.

The licensee used the value of -3% for the MSSV negative tolerance. For the PSV negative tolerance, the licensee selected -2.5 % in order to avoid opening the PSVs before the reactor trips on the high pressurizer pressure trip signal. Since the licensee showed that the negative setpoint tolerances for PSVs and MSSVs had no inadvertent effect on the existing analyses for safe operation of the plant, the staff concluded that the negative values proposed for the TS are acceptable.

The licensee also revised the Action items for the PSV limiting condition for operation (LCO). The proposed Action items require that, for the condition with one PSV inoperable, the operators either restore the inoperable valve to OPERABLE status within 15 minutes or put the plant in HOT STANDBY within 6 hours and in HOT SHUTDOWN within the next 6 hours. For conditions with two or more PSVs inoperable, the Action items require that the plant be put in HOT STANDBY within 6 hours and HOT SHUTDOWN with all RCS cold-leg temperatures less than 281 ^{0}F within the next 6 hours. Since the proposed Action items met the intent of Babcock and Wilcox Standard TS 3.4.10, "Pressurizer Safety Valves," the staff concludes that they are acceptable.

2.1 Setpoint Tolerances -- St. Lucie Unit 2

To support the proposed TSs for PSV and MSSV setpoint tolerances, the licensee performed an evaluation to determine the impact on the design basis transients and accidents for St. Lucie Unit 2. Based on its evaluation, the licensee indicated in References 1 and 2 that all of the transients and accidents which could potentially challenge the PSVs and MSSVs were analyzed with the assumed setpoint tolerances that bounded the proposed tolerances of $\pm$2% for PSVs and +1% and -3% for MSSVs. The affected transients and accidents included the loss of condenser vacuum, feedwater line break (FLB), control element assembly withdrawal, asymmetric SG transient, SGTR event, and small-break loss-of-coolant accident. For the limiting pressurization case, the FLB event assumed tolerances of +3% for both PSVs and MSSVs. For the limiting dose release case, the SGTR event assumed a value of -3 % for MSSV tolerances (PSVs were not actuated during the SGTR event). The results of these analyses demonstrated that the acceptance criteria for each event were met. The licensee confirmed that the methodology used in the analyses was consistent with the Nuclear Regulatory Commission (NRC) approved methodology. The staff finds that the licensee's analyses of record were previously approved by NRC for license Amendment No. 105, and proposed setpoint tolerances are within the applicable ranges of the acceptable analyses. Therefore, the staff concludes that the proposed TSs are acceptable.

The licensee also added an Action item to the PSV LCO. The added Action item requires that with two or more PSVs inoperable, the plant be put in HOT STANDBY within 6 hours and HOT SHUTDOWN with all RCS cold-leg temperatures less than 230 ^{0}F within the next 6 hours. Since the added Action item met the intent of Action B of Combustion Engineering Standard TS 3.4.10, "Pressurizer Safety Valves," the staff concludes that the added item is acceptable.

2.3 PSV LCO Reformatting

In the previous TSs, there were two PSV LCOs: one for Modes 1 through 3 and one for Modes 4 and 5. Specifically, for Unit 1, RCS overpressure protection was provided via TS 3.4.2 for PSV operability in Modes 4 and 5, and TS 3.4.3 for PSV operability in Modes 1, 2, and 3.

Additionally, TS 3.4.13 required operability of the power-operated relief valves (PORVs) for low temperature overpressure protection (LTOP) when cold-leg temperatures were below a predetermined limit, which included operation in part of Mode 4, Mode 5 and Mode 6. The existing TSs created an overlap and inconsistency in RCS overprotection provided by the PSVs and PORVs. In order to remove the TS inconsistency, the licensee proposed to combine TS 3.4.2 and 3.4.3 into a single LCO and eliminate the PSV LCO applicability for Mode 5. In addition, PSV Mode 4 applicability would be limited to the condition when all the RCS temperatures >281 ^{0}F, the LTOP enable temperature.

A similar TS inconsistency existed in Unit 2: TS 3.4.2.1 required PSV operability in Modes 4 and 5; TS 3.4.2.2 required PSV operability in Modes 1 through 3; and TS 3.4.9.3 required the PORVs to be operable for the LTOP covering part of Mode 4, Mode 5 and Mode 6. The licensee proposed changes to the Unit 2 TSs with a format similar to that described above for Unit 1. The only significant difference between the units is the LTOP enable temperature, which is 230 ^{0}F for Unit 2.

Since the proposed TSs remove inconsistencies in RCS overpressure protection provided by PSVs and PORVs, and does not reduce the previous TS requirements, the staff concludes that the proposed PSV TSs with the new format are acceptable.

2.4 Mechanical Aspects of the Setpoint Change

At St. Lucie 1 and 2, the setpoint tolerance for the PSVs and MSSVs is $\pm$1% of the nominal setpoints specified in the plant TS. The licensee stated that periodic setpoint testing of the PSVs and MSSVs has produced results wherein one or more of the tested valves lifts at a pressure that is outside the $\pm$1% band. Therefore, the licensee has requested the proposed TS changes to allow for expanded as-found testing acceptance tolerances for the PSVs and MSSVs. The licensee has performed the necessary analyses to support the proposed expansion of the as-found TS tolerances. The licensee is also proposing to reset the PSVs to within 1% of nominal setpoints after testing. This will reduce the possibility of setpoint drift outside the allowable tolerance.

The licensee has performed transient overpressure analyses to support the proposed increase in the PSV and MSSV setpoint tolerances. To address the effect of possible inaccuracy in MSSV setpoint testing, the licensee stated that the as-found setpoint testing method, which uses a hydraulically assisted lift device, has been correlated with actual steam test data. The individual hydraulically assisted tests were within 0.65% of the mean of the steam tests. Also, after refurbishing the MSSVs, the valves are reset to the as-left setpoint at an offsite testing laboratory with an accuracy of $\pm$0.10%. For the PSVs, the licensee stated that both the as-found and as-left setpoints are tested at the offsite testing laboratory with an accuracy of $\pm$0.10%. As such, the staff finds that the inaccuracies associated with determining the setpoints of the PSVs and the MSSVs are sufficiently small, such that additional conservatism to specifically account for this source of uncertainty is not necessary for these specific TS changes.

The licensee also evaluated the effect of the increased PSV and MSSV setpoint tolerances on the performance of safety-related valves. The licensee determined that there are no hydraulically-operated valves affected by the increased setpoint tolerances. The licensee also reviewed the motor-operated valves (MOVs) in the Generic Letter 89-10 program and determined that the only MOVs affected are the Unit 1 and 2 primary system power-operated PORV block valves. The licensee determined that the design requirement for the block valves is based on opening the valves at a pressure below the PSV setpoint. Therefore, additional pressure due to the proposed PSV setpoint tolerance would not affect the required block valve capability. The licensee also determined that there is an additional margin in the capability of the valve actuators to accommodate an increase in pressure due to the increased PSV setpoint tolerance, in addition to the margin required for age-related degradation and the margin for rate of loading. For the air-operated valves, the licensee determined that there are RCS sample line valves and chemical and volume control system letdown line isolation valves which could potentially be affected by higher RCS pressures. However, the licensee determined that the function of these valves to close when receiving a containment isolation signal is not affected by increased pressure due to the proposed PSV setpoint tolerances. In addition, testing performed on two of the valves demonstrated that the seating loads for the valves remains positive when the pressure increases from 2485 psig to 2560 psig. The staff has determined that this is adequate to address the concern regarding the function of safety-related valves.

2.5 Summary

Based on the above evaluation, the staff finds that the licensee has adequately demonstrated the acceptability of the proposed changes to TS 3.4.3 and Table 3.7-1 for Unit 1, and TS 3.4.2.2 and Table 3.7-2 for Unit 2 regarding the proposed increases in PSV and MSSV setpoint tolerances. Also, after testing, the valves will be reset to within $\pm$1% of the specified setpoints. Therefore, the staff concludes that the licensee's proposed TS changes for St. Lucie 1 and 2 are acceptable.

2.6 References

1. Letter from J. Stall (FPL) to NRC, " Proposed License Amendments, Main Steam and Pressurizer Code Safety Valve Setpoint Setting and Setpoint Testing Requirements," dated January 19, 2000.

2. Letter from R. Kundalkar (FPL) to NRC, "St. Lucie Units 1 and 2, Docket Nos. 50-335 and 50-389, FPL RAI [Request for Additional Information] Response for PSV/MSSV PLA," dated July 19, 2000.

3.0 STATE CONSULTATION

Based upon a letter dated March 8, 1991, from Mary E. Clark of the State of Florida, Department of Health and Rehabilitative Services, to Deborah A. Miller, Licensing Assistant, U.S. Nuclear Regulatory Commission, the State of Florida does not desire notification of issuance of license amendments.

4.0 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 and change surveillance requirements. 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 (65 FR 17915). 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.

5.0 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.

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