

June 29, 1995

Mr. J. H. Goldberg  
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: TESTING REQUIREMENTS OF EMERGENCY DIESEL GENERATOR (TAC NOS. M92016 AND M92017)

Dear Mr. Goldberg:

The Commission has issued the enclosed Amendment Nos. 138 and 78 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 in response to your application dated April 3, 1995.

These amendments incorporate line-item TS improvements to Specifications 3/4.8.1 "Electrical Power Systems-A.C. Sources," and 4.8.1.2.2 "Electrical Power Systems-Shutdown." The changes are consistent with recommendations for Emergency Diesel Generator (EDG) Surveillance Requirements in NUREG-1366, and regulatory guidance provided in Generic Letter (GL) 93-05 and GL 94-01. This issuance also contains FPL's commitment to implement a maintenance program for monitoring and maintaining EDG performance for both St. Lucie Units consistent with 10 CFR 50.65 and the guidance of Regulatory Guide 1.160.

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:

Jan A. Norris, Senior Project Manager  
Project Directorate II-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosures:

- 1. Amendment No. 138 to DPR-67
- 2. Amendment No. 78 to NPF-16
- 3. Safety Evaluation

cc w/enclosures:  
See next page

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NAME	EDunnington	JNorris	DMatthews	AS	
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Mr. J. H. Goldberg  
Florida Power and Light Company

St. Lucie Plant

cc:  
Jack Shreve, Public Counsel  
Office of the Public Counsel  
c/o The Florida Legislature  
111 West Madison Avenue, Room 812  
Tallahassee, Florida 32399-1400

Mr. Bill Passetti  
Office of Radiation Control  
Department of Health and  
Rehabilitative Services  
1317 Winewood Blvd.  
Tallahassee, Florida 32399-0700

Senior Resident Inspector  
St. Lucie Plant  
U.S. Nuclear Regulatory Commission  
7585 S. Hwy A1A  
Jensen Beach, Florida 34957

Regional Administrator, RII  
U.S. Nuclear Regulatory Commission  
101 Marietta Street N.W., Suite 2900  
Atlanta, Georgia 30323

Mr. Joe Myers, Director  
Div. of Emergency Preparedness  
Department of Community Affairs  
2740 Centerview Drive  
Tallahassee, Florida 32399-2100

Mr. H. N. Paduano, Manager  
Licensing & Special Programs  
Florida Power and Light Company  
P.O. Box 14000  
Juno Beach, Florida 33408-0420

J. R. Newman  
Morgan, Lewis & Bockius  
1800 M Street, N.W.  
Washington, DC 20036

D. A. Sager, Vice President  
St. Lucie Nuclear Plant  
P.O. Box 128  
Ft. Pierce, Florida 34954-0128

John T. Butler, Esq.  
Steel, Hector and Davis  
4000 Southeast Financial Center  
Miami, Florida 33131-2398

C. L. Burton  
Plant General Manager  
St. Lucie Nuclear Plant  
P.O. Box 128  
Ft. Pierce, Florida 34954-0128

Mr. Thomas R.L. Kindred  
County Administrator  
St. Lucie County  
2300 Virginia Avenue  
Fort Pierce, Florida 34982

Mr. Charles B. Brinkman, Manager  
Washington Nuclear Operations  
ABB Combustion Engineering, Nuclear Power  
12300 Twinbrook Parkway, Suite 330  
Rockville, Maryland 20852



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. 138  
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 April 3, 1995, 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.

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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. 138, 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



David B. Matthews, Director  
Project Directorate II-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: June 29, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 138

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

Insert Pages

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B 3/4 8-1

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B 3/4 8-2

## **3/4.8 ELECTRICAL POWER SYSTEMS**

### **3/4.8.1 A.C. SOURCES**

#### **OPERATING**

#### **LIMITING CONDITION FOR OPERATION**

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- 3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:
- a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and
  - b. Two separate and independent diesel generator sets each with:
    1. Engine-mounted fuel tanks containing a minimum of 152 gallons of fuel,
    2. A separate fuel storage system containing a minimum of 16,450 gallons of fuel, and
    3. A separate fuel transfer pump.

**APPLICABILITY:** MODES 1, 2, 3 and 4.

#### **ACTION:**

- a. With one offsite circuit of 3.8.1.1.a inoperable, except as provided in Action f. below, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. Restore the offsite circuit to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.
- b. With one diesel generator of 3.8.1.1.b inoperable, demonstrate the OPERABILITY of the A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and if the EDG became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventative maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE EDG by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours, unless it can be confirmed that the cause of the inoperable EDG does not exist on the remaining EDG\*; restore the diesel generator to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Additionally, verify within 2 hours or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours that:

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\* If the absence of any common-cause failure cannot be confirmed, this test shall be completed regardless of when the inoperable EDG is restored to OPERABILITY.

## **ELECTRICAL POWER SYSTEMS**

### **ACTION** (continued)

1. all required systems, subsystems, trains, components and devices that depend on the remaining OPERABLE diesel generator as a source of emergency power are also OPERABLE, and
  2. when in MODE 1, 2 or 3, the steam-driven auxiliary feed pump is OPERABLE.
- c. With one offsite A.C. circuit and one diesel generator inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; and if the EDG became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventative maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE EDG by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours unless it can be confirmed that the cause of the inoperable EDG does not exist on the remaining EDG\*. Restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore the other A.C. power source (offsite circuit or diesel generator) to OPERABLE status in accordance with the provisions of Section 3.8.1.1 ACTION Statement a or b, as appropriate, with the time requirement of that ACTION Statement based on the time of the initial loss of the remaining inoperable A.C. power source. Additionally, verify within 2 hours or be in HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours that:
1. all required systems, subsystems, trains, components and devices that depend on the remaining OPERABLE diesel generator as a source of emergency power are also OPERABLE, and
  2. When in MODE 1, 2 or 3, the steam-driven auxiliary feed pump is OPERABLE.
- d. With two of the required offsite A.C. circuits inoperable, restore one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. Following restoration of one offsite source, follow ACTION Statement a. with the time requirement of that ACTION Statement based on the time of the initial loss of the remaining inoperable offsite A.C. circuit.

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\* If the absence of any common-cause failure cannot be confirmed, this test shall be completed regardless of when the inoperable EDG is restored to OPERABILITY.

## **ELECTRICAL POWER SYSTEMS**

### **ACTION** (continued)

- e. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; restore one of the inoperable diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Following restoration of one diesel generator unit, follow ACTION Statement b. with the time requirement of that ACTION Statement based on the time of initial loss of the remaining inoperable diesel generator.
  
- f. With one Unit 1 startup transformer (1A or 1B) inoperable and with a Unit 2 startup transformer (2A or 2B) connected to the same A or B offsite power circuit and administratively available to both units, then should Unit 2 require the use of the startup transformer administratively available to both units, Unit 1 shall demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. Restore the inoperable startup transformer to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.

### **SURVEILLANCE REQUIREMENTS**

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- 4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:
  - a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments, indicated power availability; and
  - b. Demonstrated OPERABLE at least once per 18 months by transferring (manually and automatically) unit power supply from the auxiliary transformer to the startup transformer.
  
- 4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:
  - a. At least once per 31 days on a STAGGERED TEST BASIS by:
    - 1. Verifying fuel level in the engine-mounted fuel tank,
    - 2. Verifying the fuel level in the fuel storage tank,
    - 3. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the engine-mounted tank,

## **ELECTRICAL POWER SYSTEMS**

### **SURVEILLANCE REQUIREMENTS** (continued)

4. Verifying the diesel starts from ambient condition and accelerates to approximately 900 rpm in less than or equal to 10 seconds\*\*. The generator voltage and frequency shall be  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz within 10 seconds after the start signal\*\*. The diesel generator shall be started for this test by using one of the following signals:
  - a) Manual/Local
  - b) Simulated loss-of-offsite power by itself.
  - c) Simulated loss-of-offsite power in conjunction with an ESF actuation test signal.
  - d) An ESF actuation test signal by itself.
5. Verifying the generator is synchronized, loaded to greater than or equal to 3500 kW in accordance with the manufacturer's recommendations and operates within a load band of 3300 to 3500 kW\*\*\* for at least an additional 60 minutes, and
6. Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.
  - b. By removing accumulated water:
    1. From the engine-mounted fuel tank at least once per 31 days and after each occasion when the diesel is operated for greater than 1 hour, and
    2. From the storage tank at least once per 92 days.

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\*\* The diesel generator start (10 sec.) from ambient conditions shall be performed at least once per 184 days in these surveillance tests. All other diesel generator starts for the purposes of this surveillance testing may be preceded by an engine prelube period and may also include warmup procedures (e.g., gradual acceleration) as recommended by the manufacturer so that mechanical stress and wear on the diesel generator is minimized.

\*\*\* The indicated load band is meant as guidance to avoid routine overloading. Variations in loads in excess of the band due to changing bus loads shall not invalidate this test.

## ELECTRICAL POWER SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

6. Verifying the diesel generator operates for at least 24 hours\*\*\*\*. During the first 2 hours of this test, the diesel generator shall be loaded within a load band of 3800 to 3960 kW# and during the remaining 22 hours of this test, the diesel generator shall be loaded within a load band of 3300 to 3500 kW#. The generator voltage and frequency shall be  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz within 10 seconds after the start signal; the steady state generator voltage and frequency shall be maintained within these limits during this test.
  7. Verifying that the auto-connected loads do not exceed the 2000-hour rating of 3730 kW.
  8. Verifying the diesel generator's capability to:
    - a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power.
    - b) Transfer its loads to the offsite power source, and
    - c) Be restored to its standby status.
  9. Verifying that with the diesel generator operating in a test mode (connected to its bus), a simulated safety injection signal overrides the test mode by (1) returning the diesel generator to standby operation and (2) automatically energizes the emergency loads with offsite power.
  10. Verifying that the fuel transfer pump transfers fuel from each fuel storage tank to the engine-mounted tanks of each diesel via the installed cross connection lines.
  11. Verifying that the automatic load sequence timers are operable with the interval between each load block within  $\pm 1$  second of its design interval.
- f. At least once per ten years or after any modification which could affect diesel generator independence by starting\*\*\*\* the diesel generators simultaneously, during shutdown, and verifying that the diesel generators accelerate to approximately 900 rpm in less than or equal to 10 seconds.

#This band is meant as guidance to avoid routine overloading of the engine. Variations in load in excess of this band due to changing bus loads shall not invalidate this test.

\*\*\*\*This test may be conducted in accordance with the manufacturer's recommendations concerning engine prelube period.

## **ELECTRICAL POWER SYSTEMS**

### **SURVEILLANCE REQUIREMENTS** (continued)

- g. At least once per ten years by:
  - 1. Draining each fuel storage tank, removing the accumulated sediment and cleaning the tank using an appropriate cleaning compound, and
  - 2. Performing a pressure test of those portions of the diesel fuel oil system designed to USAS B31.7 Class 3 requirements at a test pressure equal to 110% of the system design pressure.

#### 4.8.1.1.3 Reports - (Not Used)

4.8.1.1.4 The Class 1E underground cable system shall be demonstrated OPERABLE within 30 days after the movement of any loads in excess of 80% of the ground surface design basis load over the cable ducts by pulling a mandrel with a diameter of at least 80% of the duct's inside diameter through a duct exposed to the maximum loading (duct nearest the ground's surface) and verifying that the duct has not been damaged.

**TABLE 4.8-1**

**DIESEL GENERATOR TEST SCHEDULE**

(NOT USED)

## **ELECTRICAL POWER SYSTEMS**

### **SHUTDOWN**

#### **LIMITING CONDITION FOR OPERATION**

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- 3.8.1.2 As a minimum, the following A.C. electrical power sources shall be OPERABLE:
- a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and
  - b. One diesel generator set with:
    1. Engine-mounted fuel tanks containing a minimum of 152 gallons of fuel,
    2. A fuel storage system containing a minimum of 16,450 gallons of fuel, and
    3. A fuel transfer pump.

**APPLICABILITY:** MODES 5 and 6.

#### **ACTION:**

With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel, or crane operation with loads over the fuel storage pool. In addition, when in MODE 5 with the reactor coolant loops not filled, or in MODE 6 with the water level less than 23 feet above the top of irradiated fuel assemblies seated within the reactor vessel, immediately initiate corrective action to restore the required sources to OPERABLE status as soon as possible.

#### **SURVEILLANCE REQUIREMENTS**

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- 4.8.1.2.1 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2a.5.

ELECTRICAL POWER SYSTEMS

3/4.8.2 ONSITE POWER DISTRIBUTION SYSTEMS

A.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

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3.8.2.1 The following A.C. electrical busses shall be OPERABLE and energized from sources of power other than the diesel generator sets:

4160	volt Emergency Bus	1A3
4160	volt Emergency Bus	1B3
480	volt Emergency Bus	1A2
480	volt Emergency Bus	1B2
480	volt Emergency MCC Busses	1A5, 1A6, 1A7
480	volt Emergency MCC Busses	1B5, 1B6, 1B7
120	volt A.C. Instrument Bus	1MA
120	volt A.C. Instrument Bus	1MB
120	volt A.C. Instrument Bus	1MC
120	volt A.C. Instrument Bus	1MD

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With less than the above complement of A.C. busses OPERABLE, restore the inoperable bus to OPERABLE status within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

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4.8.2.1 The specified A.C. busses shall be determined OPERABLE and energized from A.C. sources other than the diesel generators at least once per 7 days by verifying indicated power availability.

**BASES**

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The OPERABILITY of the A.C. and D.C. power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety related equipment required for 1) the safe shutdown of the facility and 2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D.C. power sources and distribution systems satisfy the requirements of General Design Criteria 17 of Appendix "A" to 10 CFR 50.

The ACTION requirements specified for the levels of degradation of the power sources provide restriction upon continued facility operation commensurate with the level of degradation. The OPERABILITY of the power sources are consistent with the initial condition assumptions of the accident analyses and are based upon maintaining at least one of each of the onsite A.C. and D.C. power sources and associated distribution systems OPERABLE during accident conditions coincident with an assumed loss of offsite power and single failure of the other onsite A.C. source. When one diesel generator is inoperable, there is an additional ACTION requirement to verify that all required systems, subsystems, trains, components and devices that depend on the remaining OPERABLE diesel generator as a source of emergency power, are also OPERABLE, and that the steam-driven auxiliary feedwater pump is OPERABLE. This requirement is intended to provide assurance that a loss of offsite power event will not result in a complete loss of safety function of critical systems during the period one of the diesel generators is inoperable. The term verify as used in this context means to administratively check by examining logs or other information to determine if certain components are out-of-service for maintenance or other reasons. It does not mean to perform the surveillance requirements needed to demonstrate the OPERABILITY of the component.

All EDG inoperabilities must be investigated for common-cause failures regardless of how long the EDG inoperability persists. When one diesel generator is inoperable, required ACTIONS 3.8.1.1.b and 3.8.1.1.c provide an allowance to avoid unnecessary testing of EDGs. If it can be determined that the cause of the inoperable EDG does not exist on the remaining OPERABLE EDG, then SR 4.8.1.1.2.a.4 does not have to be performed. Eight (8) hours is reasonable to confirm that the OPERABLE EDG is not affected by the same problem as the inoperable EDG. If it cannot otherwise be determined that the cause of the initial inoperable EDG does not exist on the remaining EDG, then satisfactory performance of SR 4.8.1.1.2.a.4 suffices to provide assurance of continued OPERABILITY of that EDG. If the cause of the initial inoperability exists on the remaining OPERABLE EDG, that EDG would also be declared inoperable upon discovery, and ACTION 3.8.1.1.e would be entered. Once the failure is repaired (on either EDG), the common-cause failure no longer exists.

Ambient conditions are the normal standby conditions for the diesel engines. Any normally running warmup systems should be in service and operating, and manufacturer's recommendations for engine oil and water temperatures and other parameters should be followed.

The OPERABILITY of the minimum specified A.C. and D.C. power sources and associated distribution systems during shutdown and refueling ensures that 1) the facility can be maintained in the shutdown or refueling condition for extended time periods and 2) sufficient instrumentation and control capability is available for monitoring and maintaining the facility status.

## **ELECTRICAL POWER SYSTEMS**

### **BASES** (continued)

The Surveillance Requirements for demonstrating the OPERABILITY of the diesel generators are in accordance with the recommendations of Regulatory Guide 1.108, "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants," Revision 1, August 1977, Regulatory Guide 1.137, "Fuel Oil Systems for Standby Diesel Generators," Revision 1, October 1979, Generic Letter 84-15, "Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability," dated July 2, 1984, and NRC staff positions reflected in Amendment No. 48 to Facility Operating License NPF-7 for North Anna Unit 2, dated April 25, 1985; as modified by Generic Letter 93-05, "Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation," dated September 27, 1993, and Generic Letter 94-01, "Removal of Accelerated Testing and Special Reporting Requirements for Emergency Diesel Generators," dated May 31, 1994.



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. 78  
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 April 3, 1995, 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. 78 , 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



David B. Matthews, Director  
Project Directorate II-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: June 29, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 78

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

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3/4 8-3

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## **3/4.8 ELECTRICAL POWER SYSTEMS**

### **3/4.8.1 A.C. SOURCES**

#### **OPERATING**

#### **LIMITING CONDITION FOR OPERATION**

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- 3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:
- a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and
  - b. Two separate and independent diesel generators, each with:
    1. Two separate engine-mounted fuel tanks containing a minimum volume of 200 gallons of fuel each,
    2. A separate fuel storage system containing a minimum volume of 40,000 gallons of fuel, and
    3. A separate fuel transfer pump.

**APPLICABILITY:** MODES 1, 2, 3, and 4.

#### **ACTION:**

- a. With one offsite circuit of 3.8.1.1.a inoperable, except as provided in Action f. below, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. Restore the offsite circuit to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.
- b. With one diesel generator of 3.8.1.1.b inoperable, demonstrate the OPERABILITY of the A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and if the EDG became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventative maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE EDG by performing Surveillance Requirement 4.8.1.1.2a.4 within 8 hours, unless it can be confirmed that the cause of the inoperable EDG does not exist on the remaining EDG\*; restore the diesel generator to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Additionally, verify within 2 hours or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours that:

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\* If the absence of any common-cause failure cannot be confirmed, this test shall be completed regardless of when the inoperable EDG is restored to OPERABILITY.

## **ELECTRICAL POWER SYSTEMS**

### **ACTION:** (Continued)

1. All required systems, subsystems, trains, components and devices that depend on the remaining OPERABLE diesel generator as a source of emergency power are also OPERABLE, and
  2. When in MODE 1, 2 or 3, the steam-driven auxiliary feed pump is OPERABLE.
- c. With one offsite A.C. circuit and one diesel generator inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.a within one hour and at least once per 8 hours thereafter; and if the EDG became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventative maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE EDG by performing Surveillance Requirement 4.8.1.1.2a.4 within 8 hours, unless it can be confirmed that the cause of the inoperable EDG does not exist on the remaining EDG\*. Restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore the other A.C. power source (offsite circuit or diesel generator) to OPERABLE status in accordance with the provisions of Section 3.8.1.1. ACTION Statement a or b, as appropriate, with the time requirement of that ACTION Statement based on the time of initial loss of the remaining inoperable A.C. power source. Additionally, verify within 2 hours or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours that:
1. All required systems, subsystems, trains, components and devices that depend on the remaining OPERABLE diesel generator as a source of emergency power are also OPERABLE, and
  2. When in MODE 1, 2, or 3, the steam-driven auxiliary feed pump is OPERABLE.

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\* If the absence of any common-cause failure cannot be confirmed, this test shall be completed regardless of when the inoperable EDG is restored to OPERABILITY.

## ELECTRICAL POWER SYSTEMS

### ACTION: (Continued)

- d. With two of the required offsite A.C. circuits inoperable, restore one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. Following restoration of one offsite source, follow ACTION Statement a. with the time requirement of that ACTION Statement based on the time of initial loss of the remaining inoperable offsite A.C. circuit.
- e. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; restore one of the inoperable diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Following restoration of one diesel generator unit, follow ACTION Statement b. with the time requirement of that ACTION Statement based on the time of initial loss of the remaining inoperable diesel generator.
- f. With one Unit 2 startup transformer (2A or 2B) inoperable and with a Unit 1 startup transformer (1A or 1B) connected to the same A or B offsite power circuit and administratively available to both units, then should Unit 1 require the use of the startup transformer administratively available to both units, Unit 2 shall demonstrate the operability of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1a. within 1 hour and at least once per 8 hours thereafter. Restore the inoperable startup transformer to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.

### SURVEILLANCE REQUIREMENTS

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- 4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:
  - a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments, indicated power availability; and
  - b. Demonstrated OPERABLE at least once per 18 months by transferring (manually and automatically) unit power supply from the normal circuit to the alternate circuit.
- 4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:
  - a. At least once per 31 days on a STAGGERED TEST BASIS BY:

## **ELECTRICAL POWER SYSTEMS**

### **SURVEILLANCE REQUIREMENTS (Continued)**

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1. Verifying the fuel level in the engine-mounted fuel tank,
  2. Verifying the fuel level in the fuel storage tank,
  3. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the engine-mounted tank,
  4. Verifying the diesel starts from ambient condition and accelerates to approximately 900 rpm in less than or equal to 10 seconds \*\*. The generator voltage and frequency shall be  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz within 10 seconds after the start signal\*\*. The diesel generator shall be started for this test by using one of the following signals:
    - a) Manual/Local.
    - b) Simulated loss-of-offsite power by itself.
    - c) Simulated loss-of-offsite power in conjunction with an ESF actuation test signal.
    - d) An ESF actuation test signal by itself.
  5. Verifying the generator is synchronized, loaded to greater than or equal to 3685 kW in accordance with the manufacturer's recommendations, and operates within a load band of 3450 to 3685 kW\*\*\* at least an additional 60 minutes, and
  6. Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.
- b. By removing accumulated water:
1. From the engine-mounted fuel tank at least once per 31 days and after each occasion when the diesel is operated for greater than 1 hour, and
  2. From the storage tank at least once per 31 days.

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\*\* The diesel generator start (10 sec) from ambient conditions shall be performed at least once per 184 days in these surveillance tests. All other diesel generator starts for purposes of this surveillance testing may be preceded by an engine prelube period and may also include warmup procedures (e.g., gradual acceleration) as recommended by the manufacturer so that mechanical stress and wear on the diesel generator is minimized.

\*\*\* The indicated load band is meant as guidance to avoid routine overloading. Variations in loads in excess of the band due to changing bus loads shall not invalidate this test.

## **ELECTRICAL POWER SYSTEMS**

### **SURVEILLANCE REQUIREMENTS (Continued)**

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- c) Verifying that all automatic diesel generator trips, except engine overspeed and generator differential, are automatically bypassed upon loss of voltage on the emergency bus concurrent with a safety injection actuation signal.
  
7. Verifying the diesel generator operates for at least 24 hours.\*\*\*\*  
During the first 2 hours of this test, the diesel generator shall be loaded within a load band of 3800 to 3985 kW\* and during the remaining 22 hours of this test, the diesel generator shall be loaded within a load band of 3450 to 3685 kW\*. The generator voltage and frequency shall be  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz within 10 seconds after the start signal; the steady-state generator voltage and frequency shall be maintained within these limits during this test.
  
8. Verifying that the auto-connected loads to each diesel generator do not exceed the 2000-hour rating of 3935 kW.
  
9. Verifying that the diesel generator's capability to:
  - a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power.
  - b) Transfer its load to the offsite power source, and
  - c) Be restored to its standby status.
  
10. Verifying that with the diesel generator operating in a test mode (connected to its bus), a simulated safety injection signal overrides the test mode by (1) returning the diesel generator to standby operation and (2) automatically energizes the emergency loads with offsite power.
  
11. Verifying that the fuel transfer pump transfers fuel from each fuel storage tank to the engine-mounted tanks of each diesel via the installed cross connection lines.

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# This band is meant as guidance to avoid routine overloading of the engine. Variations in load in excess of this band due to changing bus loads shall not invalidate this test.

\*\*\*\* This test may be conducted in accordance with the manufacturer's recommendations concerning engine prelube period.

## **ELECTRICAL POWER SYSTEMS**

### **SURVEILLANCE REQUIREMENTS (Continued)**

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12. Verifying that the automatic load sequence timers are operable with the interval between each load block within  $\pm 1$  second of its design interval.
  13. Performing Surveillance Requirement 4.8.1.1.2a.4 within 5 minutes of shutting down the diesel generator after it has operated within a load band of 3450 kW to 3685 kW\* for at least 2 hours or until operating temperatures have stabilized.
- f. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting\*\*\*\* the diesel generators simultaneously, during shutdown, and verifying that the diesel generators accelerate to approximately 900 rpm in less than or equal to 10 seconds.
  - g. At least once per 10 years by:
    1. Draining each fuel oil storage tank, removing the accumulated sediment and cleaning the tank using a sodium hypochlorite solution, and
    2. Performing a pressure test of those portions of the diesel fuel oil system designed to Section III, subsection ND of the ASME Code at a test pressure equal to 110% of the system design pressure.
- 4.8.1.1.3 Reports - (Not Used).
- 4.8.1.1.4 The Class 1E underground cable system shall be demonstrated OPERABLE within 30 days after the movement of any loads in excess of 80% of the ground surface design basis load over the cable ducts by pulling a mandrel with a diameter of at least 80% of the duct's inside diameter through a duct exposed to the maximum loading (duct nearest the ground's surface) and verifying that the duct has not been damaged.

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# This band is meant as guidance to avoid routine overloading of the engine. Variations in load in excess of this band due to changing bus loads shall not invalidate this test.

\*\*\*\* This test may be conducted in accordance with the manufacturer's recommendations concerning engine prelube period.

**TABLE 4.8-1**

**DIESEL GENERATOR TEST SCHEDULE**

(NOT USED)

## **ELECTRICAL POWER SYSTEMS**

### **A.C. SOURCES**

### **SHUTDOWN**

### **LIMITING CONDITION FOR OPERATION**

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3.8.1.2 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and
- b. One diesel generator with:
  1. Two engine-mounted fuel tanks each containing a minimum volume of 200 gallons of fuel,
  2. A fuel storage system containing a minimum volume of 40,000 gallons of fuel, and
  3. A fuel transfer pump.

**APPLICABILITY:** MODES 5 and 6.

### **ACTION:**

With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel, or crane operation with loads over the fuel storage pool, and within 8 hours, depressurize and vent the Reactor Coolant System through a greater than or equal to 3.58 square inch vent. In addition, when in MODE 5 with the reactor coolant loops not filled, or in MODE 6 with the water level less than 23 feet above the reactor vessel flange, immediately initiate corrective action to restore the required sources to OPERABLE status as soon as possible.

### **SURVEILLANCE REQUIREMENTS**

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4.8.1.2.1 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 (except for requirement 4.8.1.1.2a.5).

## ELECTRICAL POWER SYSTEMS

### 3/4.8.2 D.C. SOURCES

#### OPERATING

#### LIMITING CONDITION FOR OPERATION

---

3.8.2.1 As a minimum the following D.C. electrical sources shall be OPERABLE:

- a. 125-volt Battery bank No. 2A and a full capacity charger.
- b. 125-volt Battery bank No. 2B and a full capacity charger.

APPLICABILITY: MODES 1, 2, 3, and 4.

#### ACTION:

- a. With one of the required battery banks inoperable, restore the inoperable battery bank to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one of the required full capacity chargers inoperable, demonstrate the OPERABILITY of its associated battery banks by performing Surveillance Requirement 4.8.2.1a.1 within 1 hour, and at least once per 8 hours thereafter. If any Category A limit in Table 4.8-2 is not met, declare the battery inoperable.

## SURVEILLANCE REQUIREMENTS

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4.8.2.1 Each 125-volt battery bank and charger shall be demonstrated OPERABLE:

- a. At least once per 7 days by verifying that:
  1. The parameters in Table 4.8-2 meet the Category A limits, and
  2. The total battery terminal voltage is greater than or equal to 129-volts on float charge.

**BASES**

**3/4.8.1, 3/4.8.2 and 3/4.8.3 A.C. SOURCES, D.C. SOURCES and ONSITE POWER DISTRIBUTION SYSTEMS**

The OPERABILITY of the A.C. and D.C. power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety related equipment required for 1) the safe shutdown of the facility and 2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D.C. power sources and distribution systems satisfy the requirements of General Design Criterion 17 of Appendix "A" to 10 CFR 50.

The ACTION requirements specified for the levels of degradation of the power sources provide restriction upon continued facility operation commensurate with the level of degradation. The OPERABILITY of the power sources are consistent with the initial condition assumptions of the safety analyses and are based upon maintaining at least one redundant set of onsite A.C. and D.C. power sources and associated distribution systems OPERABLE during accident conditions coincident with an assumed loss of offsite power and single failure of the other onsite A.C. source. The A.C. and D.C. source allowable out-of-service times are based on Regulatory Guide 1.93, "Availability of Electrical Power Sources," December 1974. When one diesel generator is inoperable, there is an additional ACTION requirement to verify that all required systems, subsystems, trains, components and devices, that depend on the remaining OPERABLE diesel generator as a source of emergency power, are also OPERABLE, and that the steam-driven auxiliary feedwater pump is OPERABLE. This requirement is intended to provide assurance that a loss of offsite power event will not result in a complete loss of safety function of critical systems during the period one of the diesel generators is inoperable. The term verify as used in this context means to administratively check by examining logs or other information to determine if certain components are out-of-service for maintenance or other reasons. It does not mean to perform the surveillance requirements needed to demonstrate the OPERABILITY of the component.

All EDG inoperabilities must be investigated for common-cause failures regardless of how long the EDG inoperability persists. When one diesel generator is inoperable, required ACTIONS 3.8.1.1.b and 3.8.1.1.c provide an allowance to avoid unnecessary testing of EDGs. If it can be determined that the cause of the inoperable EDG does not exist on the remaining OPERABLE EDG, then SR 4.8.1.1.2.a.4 does not have to be performed. Eight (8) hours is reasonable to confirm that the OPERABLE EDG is not affected by the same problem as the inoperable EDG. If it cannot otherwise be determined that the cause of the initial inoperable EDG does not exist on the remaining EDG, then satisfactory performance of SR 4.8.1.1.2.a.4 suffices to provide assurance of continued OPERABILITY of that EDG. If the cause of the initial inoperability exists on the remaining OPERABLE EDG, that EDG would also be declared inoperable upon discovery, and ACTION 3.8.1.1.e would be entered. Once the failure is repaired (on either EDG), the common-cause failure no longer exists.

## **ELECTRICAL POWER SYSTEMS**

### **BASES (Continued)**

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#### **3/4.8.1, 3/4.8.2 and 3/4.8.3 A.C. SOURCES, D.C. SOURCES and ONSITE POWER DISTRIBUTION SYSTEMS (Continued)**

The OPERABILITY of the minimum specified A.C. and D.C. power sources and associated distribution systems during shutdown and refueling ensures that 1) the facility can be maintained in the shutdown or refueling condition for extended time periods and 2) sufficient instrumentation and control capability is available for monitoring and maintaining the unit status.

The Surveillance Requirements for demonstrating the OPERABILITY of the diesel generators are in accordance with the recommendations of Regulatory Guides 1.9 "Selection of Diesel Generator Set Capacity for Standby Power Supplies," March 10, 1971, and 1.108 "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants," Revision 1, August 1977, and 1.137, "Fuel Oil Systems for Standby Diesel Generators," Revision 1, October 1979, Generic Letter 84-15, "Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability" dated July 2, 1984, and NRC staff positions reflected in Amendment No. 48 to Facility Operating License No. NPF-7 for North Anna Unit 2, dated April 25, 1985; as modified by Generic Letter 93-05, "Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation," dated September 27, 1993, and Generic Letter 94-01, "Removal of Accelerated Testing and Special Reporting Requirements for Emergency Diesel Generators," dated May 31, 1994.

## ELECTRICAL POWER SYSTEMS

### BASES

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#### A.C. SOURCES, D.C. SOURCES AND ONSITE POWER DISTRIBUTION SYSTEMS (Continued)

The Surveillance Requirement for demonstrating the OPERABILITY of the Station batteries are based on the recommendations of Regulatory Guide 1.129, "Maintenance Testing and Replacement of Large Lead Storage Batteries for Nuclear Power Plants," February 1978, and IEEE Std 450-1980, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations."

Verifying average electrolyte temperature above the minimum for which the battery was sized, total battery terminal voltage on float charge, connection resistance values and the performance of battery service and discharge tests ensures the effectiveness of the charging system, the ability to handle high discharge rates and compares the battery capacity at that time with the rated capacity.

Table 4.8-2 specifies the normal limits for each designated pilot cell and each connected cell for electrolyte level, float voltage and specific gravity. The limits for the designated pilot cells float voltage and specific gravity, greater than 2.13 volts and .015 below the manufacturer's full charge specific gravity or a battery charger current that had stabilized at a low value, is characteristic of a charged cell with adequate capacity. The normal limits for each connected cell for float voltage and specific gravity, greater than 2.13 volts and not more than .020 below the manufacturer's full charge specific gravity with an average specific gravity of all the connected cells not more than .010 below the manufacturer's full charge specific gravity, ensures the OPERABILITY and capability of the battery.

Operation with a battery cell's parameter outside the normal limit but within the allowable value specified in Table 4.8-2 is permitted for up to 7 days. During this 7 day period: (1) the allowable values for electrolyte level ensures no physical damage to the plates with an adequate electron transfer capability; (2) the allowable value for the average specific gravity of all the cells, not more than .020 below the manufacturer's recommended full charge specific gravity, ensures that the decrease in rating will be less than the safety margin provided in sizing; (3) the allowable value for an individual cell's specific gravity, ensures that an individual cell's specific gravity will not be more than .040 below the manufacturer's full charge specific gravity and that the overall capability of the battery will be maintained within an acceptable limit; and (4) the allowable value for an individual cell's float voltage, greater than 2.07 volts, ensures the battery's capability to perform its design function.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 138 AND 78

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 April 3, 1995, Florida Power and Light Company (FPL) requested that Appendix A of Facility Operating License DPR-67 for St. Lucie Unit 1 (PSL1) and NPF-16 for St. Lucie Unit 2 (PSL2) be revised to incorporate line-item Technical Specifications (TS) improvements to Specifications 3/4.8.1, "Electrical Power Systems-A.C. Sources," and 4.8.1.2.2, "Electrical Power Systems-Shutdown." The proposed changes are consistent with guidance provided in GL 93-05, "Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation," and the corresponding recommendations contained in NUREG-1366, "Improvements to Technical Specifications Surveillance Requirements," December, 1992.

In addition, line-item improvements are proposed following the guidance in GL 94-01, "Removal of Accelerated Testing and Special Reporting Requirements for Emergency Diesel Generators." A commitment to implement a maintenance program for monitoring and maintaining Emergency Diesel Generator (EDG) performance for both St. Lucie (PSL) units within 90 days following issuance of the proposed amendments, consistent with the provisions of 10 CFR 50.65 "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants" and the associated guidance of Regulatory Guide 1.160, is contained in the Basis for Item 8.

2.0 BACKGROUND

As part of the NRC Technical Specifications Improvement Program, NUREG-1366 reported the findings and recommendations of a comprehensive examination of surveillance requirements in TS that require testing during power operation. Certain recommendations from this study were designed to remove testing requirements which may be counter-productive to safety in terms of equipment degradation and availability, and were incorporated into the improved standard technical specifications (STS) issued by the NRC in September 1992. For plants that have TS in a format that is different than the STS, GL 93-05 provides guidance to assist licensees in preparing license amendment requests to implement recommendations contained in NUREG-1366 as line-item TS

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improvements. The proposed TS changes should be consistent with the intent the NUREG recommendations, the guidance of GL 93-05, and the format of the individual plant TS.

Section 10.1 of NUREG-1366 and GL 93-05 includes the recommended improvements to Specifications for the Emergency Diesel Generators (EDGs). Specifically,

- (1) When an EDG itself is inoperable (not including a support system or independently testable component), the other EDG(s) should be tested only once (not every 8 hours) and within 8 hours unless the absence of any potential common mode failure can be demonstrated.
- (2) EDGs should be loaded in accordance with the vendor recommendations for all test purposes other than the refueling outage LOOP tests.
- (3) The hot-start test following the 24-hour EDG test should be a simple EDG start test. If the hot-start test is not performed within 5 minutes following the 24-hour EDG test, it should not be necessary to repeat the 24-hour EDG test. The only requirement should be that the hot-start test is performed within 5 minutes of operating the diesel generator at its continuous rating for 2 hours or until operating temperatures have stabilized.
- (4) Delete the requirement for alternate testing of EDGs and other unrelated systems not associated with an inoperable train or subsystem (other than an inoperable EDG).

GL 94-01 provides guidance for a TS line-item improvement that was developed in response to an NRC decision on SECY-93-044, "Resolution of Generic Safety Issue B-56, 'Diesel Generator Reliability'." The GL states that, "The NRC staff determined that a commitment to implement a maintenance program for monitoring and maintaining EDG performance in accordance with the provisions of the maintenance rule and consistent with the guidance of RG 1.160 would provide a basis for the staff to approve a licensee request to remove the accelerated testing and special reporting requirements for EDGs from their plant TS." Specifically, accelerated testing requirements for EDGs which are based on the number of failures in the last 20 and 100 valid tests would be deleted, and reference to the applicable test schedule would be deleted from TS 4.8.1.1.2. In addition, EDG special reporting requirements would be deleted from the plant TS since 10 CFR 50.72 and 50.73 address the regulatory requirements for licensees to notify NRC and report individual EDG failures.

### 3.0 DESCRIPTION OF CHANGES AND BASIS/JUSTIFICATIONS

The licensee provided the following descriptions and basis or justifications for those proposed changes. Unless otherwise indicated, the following proposed changes apply to both St. Lucie Unit 1 (PSL1) and St. Lucie Unit 2 (PSL2).

1. TS 3.8.1.1. ACTION a. "With one offsite circuit of 3.8.1.1.a inoperable...." : DELETE the following requirement to test EDGs: "If either EDG has not been successfully tested within the past 24 hours, demonstrate its OPERABILITY by performing Surveillance Requirement 4.8.1.1.2.a.4 separately for each such EDG within 24 hours."

BASIS: NUREG-1366, GL 93-05 Section 10.1, Recommendation (4).

2. TS 3.8.1.1 ACTION b. "With one diesel generator of 3.8.1.1.b inoperable...." : REVISE the following requirement to test the remaining OPERABLE EDG, "and if the EDG became inoperable due to any cause other than preplanned preventative maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE EDG by performing Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours\*;" TO READ,

*"and if the EDG became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventative maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE EDG by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours, unless it can be confirmed that the cause of the inoperable EDG does not exist on the remaining EDG\*,"*

BASIS: NUREG-1366, GL 93-05 Section 10.1, Recommendation (1). FPL's proposed wording has the same meaning as the generic example for this specification provided in GL 93-05, and is consistent with the syntax used in the Bases for corresponding Actions B.3.1 and B.3.2 shown in the STS for Combustion Engineering Plants (NUREG-1432).

3. Page 3/4 8-1, Footnote "\*" : REVISE the footnote, "This test is required to be completed regardless of when the inoperable EDG is restored to OPERABILITY." TO READ,

*"If the absence of any common-cause failure cannot be confirmed, this test shall be completed regardless of when the inoperable EDG is restored to OPERABILITY."*

BASIS: The proposed wording revises the footnote to clarify that, if the cause for inoperability of the faulty EDG has not been conclusively demonstrated to preclude the potential for a common-cause failure, the test for the remaining EDG is required even in those situations where the inoperable EDG is restored to an OPERABLE status before the action specified in 3.8.1.1.b has been completed. Assurance is thereby maintained that a potential common-cause failure has not rendered the remaining EDG inoperable. The proposed revision is consistent with NUREG-1366 and GL 93-05 Section 10.1, Recommendation (1).

4. TS 3.8.1.1 ACTION c. "With one offsite A.C. circuit and one diesel generator inoperable,..." : REVISE the following requirement to test the remaining OPERABLE EDG, "and if the EDG became inoperable due to any cause other than preplanned preventative maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE EDG by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours\*." TO READ,

"and if the EDG became inoperable due to any cause other than *an inoperable support system, an independently testable component, or preplanned preventative maintenance or testing*, demonstrate the OPERABILITY of the remaining OPERABLE EDG by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours, *unless it can be confirmed that the cause of the inoperable EDG does not exist on the remaining EDG\*.*"

BASIS: NUREG-1366, GL 93-05 Section 10.1, Recommendation (1). FPL's proposed wording has the same meaning as the generic example provided in GL 93-05, and is consistent with the syntax used in the Bases for corresponding Actions B.3.1 and B.3.2 shown in the STS for Combustion Engineering Plants (NUREG-1432).

5. Page 3/4 8-2, Footnote "\*" : REVISE the footnote, "This test is required to be completed regardless of when the inoperable EDG is restored to OPERABILITY." TO READ,

*"If the absence of any common-cause failure cannot be confirmed, this test shall be completed regardless of when the inoperable EDG is restored to OPERABILITY."*

BASIS: The proposed wording revises the footnote to clarify that, if the cause for inoperability of the faulty EDG has not been conclusively demonstrated to preclude the potential for a common-cause failure, the test for the remaining EDG is required even in those situations where the inoperable EDG is restored to an OPERABLE status before the action specified in 3.8.1.1.b has been completed. Assurance is thereby maintained that a potential common-cause failure has not rendered the remaining EDG inoperable. The proposed revision is consistent with NUREG-1366 and GL 93-05 Section 10.1, Recommendation (1).

6. TS 3.8.1.1. ACTION d. "With two of the required offsite A.C. circuits inoperable,..." : DELETE the following requirement to test the EDGs: "demonstrate the OPERABILITY of two diesel generators by sequentially performing Surveillance Requirement 4.8.1.1.2.a.4 on both diesels within 8 hours, unless the diesel generators are already operating;"

BASIS: NUREG-1366, GL 93-05 Section 10.1, Recommendation (4).

7. TS 3.8.1.1 ACTION f. "With one Unit ... startup transformer ... inoperable,..." : DELETE the following requirement to test the EDGs, "If either EDG has not been successfully tested within the past 24 hours, demonstrate its OPERABILITY by performing Surveillance Requirement 4.8.1.1.2.a.4 separately for each such EDG within 24 hours."

BASIS: NUREG-1366, GL 93-05 Section 10.1, Recommendation (4).

8. SR 4.8.1.1.2.a, REVISE the specified frequency, "In accordance with the frequency specified in Table 4.8-1 on a STAGGERED TEST BASIS by:" TO READ,

*"At least once per 31 days on a STAGGERED TEST BASIS by:"*

BASIS: Implementing the provisions of the maintenance rule for EDGs and the associated support systems that impact EDG availability will assure EDG performance. FPL hereby commits to implement within 90 days following issuance of the license amendments a maintenance program for monitoring and maintaining EDG performance consistent with the provisions of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," and the associated guidance of Regulatory Guide 1.160 for PSL1 and PSL2.

As stated in GL 94-01, "...the staff has concluded that it is not necessary to await the effective date of the maintenance rule to remove the associated TS requirements nor is it necessary to relocate accelerated testing requirements to the maintenance program." The proposed TS change is consistent with GL 94-01, Enclosure 2, "Revisions to TS 4.8.1.1.2"

9. SR 4.8.1.1.2.a.4 (PSL2 only): In the first line, replace the word "form" with the proper word, "*from*".

BASIS: Editorial change, e.g., correction of a spelling error.

10. SR 4.8.1.1.2.a.5, REVISE the requirement to load the generator "in less than or equal to 60 seconds\*\*\*," TO READ,

*"in accordance with the manufacturer's recommendations,".*

**BASIS:** NUREG-1366, GL 93-05 Section 10.1, Recommendation (2).

**NOTE:** For PSL2 only, and as shown in Attachment 4, the triple asterisk will be relocated from its present position as superscript to the word "loaded" to the position of superscript to the load value "3685 kw", to be consistent with the corresponding PSL1 TS.

11. **Page 3/4 8-4, Footnote "\*\*\*\*", DELETE** the first two sentences, "Generator loading in less than or equal to 60 seconds shall be performed at least once every 184 days; timing for this loading test shall start upon the closing of the diesel generator breaker. All other loading for the purpose of this surveillance test may be performed according to manufacturer's recommendations."

**BASIS:** NUREG-1366, GL 93-05 Section 10.1, Recommendation (2).

12. **Page 3/4 8-7 (PSL2 ONLY), TS 4.8.1.1.2.e.7, DELETE** the last sentence, "Within 5 minutes after completing this 24 hour test, perform Surveillance Requirement 4.8.1.1.2e.4.b."

**BASIS:** As reported in Section 10.1 of NUREG-1366, failure to restart when hot, or extended delay in restarting, is typically only experienced with small forced-air-cooled diesel engines which, upon being tripped undergo a temperature rise transient. The PSL2 diesel engines are water cooled, and are normally maintained at hot standby conditions (heated cooling water and lubricating oil) following shutdown. Significant temperature rise transients have not been experienced following shutdown of the PSL EDGs.

The following specific finding is also reported in NUREG-1366, "There is no safety reason for performing a startup of a diesel within 5 minutes of the 24-hour test run as is required by Technical Specifications." In addition to the GL 93-05 recommendations, NUREG-1366 also states (following discussion of another utility's similar amendment request), "The NRC staff, therefore recommends that other utilities be permitted to change their Technical Specifications to separate the 24-hour test and the hot startup test if they propose doing so."

Based on the preceding discussion, and recognizing that potential refueling outage "critical path" flexibility would be provided, FPL proposes to re-specify the hot restart test requirement as the following Specification 4.8.1.1.2.e.13.

13. Page 3/4 8-7a (PSL2 ONLY):

(a) ADD new Specification 4.8.1.1.2.e.13, *"Performing Surveillance Requirement 4.8.1.1.2a.4 within 5 minutes of shutting down the diesel generator after it has operated within a load band of 3450 kW to 3685 kW<sup>#</sup> for at least 2 hours or until operating temperatures have stabilized."*

(b) ADD new footnote, *" # This band is meant as guidance to avoid routine overloading of the engine. Variations in load in excess of this band due to changing bus loads shall not invalidate this test."*

BASIS: NUREG-1366, GL 93-05 Section 10.1, Recommendation (3).

14. SR 4.8.1.1.3, Reports: DELETE the specified reporting requirement and REPLACE with the words *"(Not used)"*

BASIS: GL 94-01, Enclosure 2, "Revisions to TS 4.8.1.1.3." 10 CFR 50.72 and 50.73 address the remaining regulatory requirements for licensees to notify NRC and report individual EDG failures.

15. TABLE 4.8-1: REPLACE the content of TABLE 4.8-1 with the words, *"(Not used)"*

BASIS: GL 94-01, Enclosure 2, "Revisions to Table 4.8.1.1.2-1"

16. SR 4.8.1.2.2 Reports: DELETE this specification in its entirety.

BASIS: Deleting the entire section will not interrupt the TS numbering sequence, and removing the reporting requirement from the TS is consistent with GL 94-01, Enclosure 2, "Revisions to TS 4.8.1.1.3, 'Reports'." 10 CFR 50.72 and 50.73 address the remaining regulatory requirements for licensees to notify NRC and report individual EDG failures.

17. Page B 3/4 8-1, 3/4.8 ELECTRICAL POWER SYSTEMS, BASES:

(a) ADD the following paragraph as indicated by "Insert -A" in Attachment 3 (PSL1) and Attachment 4 (PSL2):

*"All EDG inoperabilities must be investigated for common-cause failures regardless of how long the EDG inoperability persists. When one diesel generator is inoperable, required ACTIONS 3.8.1.1.b and 3.8.1.1.c provide an allowance*

*to avoid unnecessary testing of EDGs. If it can be determined that the cause of the inoperable EDG does not exist on the remaining OPERABLE EDG, then SR 4.8.1.1.2.a.4 does not have to be performed. Eight (8) hours is reasonable to confirm that the OPERABLE EDG is not affected by the same problem as the inoperable EDG. If it cannot otherwise be determined that the cause of the initial inoperable EDG does not exist on the remaining EDG, then satisfactory performance of SR 4.8.1.1.2.a.4 suffices to provide assurance of continued OPERABILITY of that EDG. If the cause of the initial inoperability exists on the remaining OPERABLE EDG, that EDG would also be declared inoperable upon discovery, and ACTION 3.8.1.1.e would be entered. Once the failure is repaired (on either EDG), the common-cause failure no longer exists."*

(b) ADD the following to the last paragraph: "; as modified by Generic Letter 93-05, "Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation," dated September 27, 1993, and Generic Letter 94-01, "Removal of Accelerated Testing and Special Reporting Requirements for Emergency Diesel Generators," dated May 31, 1994."

BASIS: The proposed additions are consistent with the existing Bases format, and will update the reasons for Specification 3/4.8 accounting for the changes requested in this submittal.

#### 4.0 EVALUATION AND TECHNICAL FINDING

The staff has reviewed the licensee's basis and justifications for the proposed changes and concludes that the proposed changes to the St. Lucie Unit 1 and Unit 2 Technical Specifications are consistent with the intent of the NUREG-1366 recommendations involving Emergency Diesel Generator Surveillance Requirements (PWR, BWR), the guidance of GL 93-05, the guidance of GL 94-01, and the existing format of the plant TS. Based on that, the staff finds the proposed changes acceptable.

#### 5.0 STATE CONSULTATION

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

#### 6.0 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 changes 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 (60 FR 24910). 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.

#### 7.0 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

Date: June 29, 1995

DATED: June 29, 1995

AMENDMENT NO. 138 TO FACILITY OPERATING LICENSE NO. DPR-67 - ST. LUCIE, UNIT 1  
AMENDMENT NO. 78 TO FACILITY OPERATING LICENSE NO. NPF-16 - ST. LUCIE, UNIT 2

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