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

FLORIDA POWER & LIGHT COMPANY

DOCKET NO. 50-335

ST. LUCIE PLANT UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 29
License No. DPR-67

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The applications for amendment by Florida Power and Light Company (the licensee) dated August 1, 1977, August 29 and September 29, 1978, comply 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 applications, 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, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR- 67 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 29, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: January 24, 1979

ATTACHMENT TO LICENSE AMENDMENT NO. 29

FACILITY OPERATING LICENSE NO. DPR-67

DOCKET NO. 50-335

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

Pages

i & ii

1-2

1-3 (deleted)

2-1 & 2-2

2-6 & 2-7

2-15

2-17

3-2 thru 3-4

4-1

4-2 (deleted)

5-1 thru 5-8

5-10 thru 5-14

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TABLE OF CONTENTS (Cont'd)

1.7 Intake Temperature

The temperature of the cooling water as measured at the plant intake structure.

1.8 Discharge Temperature

The temperature of the cooling water as measured near the terminus of the discharge canal.

1.9 Dissolved Oxygen

Oxygen dissolved in the condenser cooling water, and expressed in milligrams per liter.

1.10 Limiting Conditions

Those conditions to be imposed on plant effluents and operating practices which may have an adverse impact on the environment.

1.11 Continuous Recording

Recording of a measured parameter on a chart by a single pen or a multi-point recorder with less than a one-minute interval between successive printing of the same parameter.

1.12 Channel Calibration

A Channel Calibration shall be the adjustment of the channel output such that it corresponds with specified range and accuracy to known values of the parameter which the channel monitors. The Channel Calibration shall encompass the entire channel including the sensor and alarm and/or trip functions, and shall include the Channel Functional Test.

1.13 Channel Functional Test

A Channel Functional Test shall be the injection of a simulated signal into the channel as close to the primary sensor as practicable to verify operability including alarm and/or trip functions.

1.14 Batch Releases

Discontinuous release of gaseous or liquid effluent which takes place over a finite period of time, usually hours or days.

1.15 Continuous Release

Release of gaseous or liquid effluent which is essentially uninterrupted for extended periods during normal operation of the facility.

2.0 LIMITING CONDITIONS

General

2.0.1 The circulating water system shall be operated to result in an acceptable environmental impact. Flexibility of operation is permitted, consistent with consideration of health and safety, to ensure that the public is provided a dependable source of power even under unusual operating conditions which may set forth in this specification, as provided below in 2.0.2 and 2.0.3.

2.0.2 During a national power emergency, a regional emergency, reactor emergency, or any time when the health or safety of the public may be endangered by the inability of Florida Power & Light to supply electricity from any other sources available to it, the operating limits provided in this specification shall be inapplicable. However, during such emergencies, the operating limits shall not be exceeded except as is necessitated by the emergency.

2.0.3 Whenever, in accordance with paragraphs 2.0.1 and 2.0.2 above, Florida Power & Light exceeds the operating limits otherwise imposed, notification shall be made to the Director of the Region II Regional Office of the Office of Inspection and Enforcement, in accordance with 5.6.2.a.

2.1 THERMAL

2.1.1 Maximum Discharge Temperature

Objective

The purpose of this specification is to limit thermal stress to the aquatic ecosystem by limiting the temperature rise in the Atlantic Ocean, in the area of the subaqueous discharge, during operation.

Specification

The thermal discharge of St. Lucie Unit No. 1 into the Atlantic Ocean shall be limited to a maximum release temperature of 111°F or 44°C and shall not cause a temperature rise in excess of 1.5°F or 0.8°C above ambient surface temperature outside a 400 acre zone of mixing during the months of June through September, nor a 4°F or 2.2°C rise during the remaining months. In addition, the surface temperature conditions within the zone of mixing shall not exceed a rise of 5.5°F or 3.1°C over ambient temperature nor a maximum temperature of 93°F or 34°C as an instantaneous maximum at any point.

Thermal defouling of the intake pipeline is allowed subject to a maximum release temperature of 120°F or 49°C and a maximum surface temperature rise of 2°F or 1.1°C.

Under the following conditions, which may be expected to cause the discharge temperature to be higher than design, the maximum discharge temperature shall be limited to 115°F or 46°C: 1) Condenser and/or circulating water pump maintenance; 2) Throttling circulating water pumps to minimize use of chlorine; 3) Fouling of circulating water system.

Temporary transients due to accidental loss of circulating water system components may cause temperature rises in excess of limitations stated above. Variances due to these transients shall be limited to no more than 7 hours per month.

Monitoring Requirement

A continuous temperature measurement system shall be installed in the discharge canal at approximately mid-depth. Temperatures shall be transmitted to the control room.

A continuous temperature monitoring station located within 500 feet from the primary monitoring device shall be used as a backup system if the primary system fails. In this event this station shall be checked every 8 hours until the primary system is restored. See Section 3.1.A.5 for complete details of the monitoring program.

2.1.2 Maximum Condenser Temperature Rise

Under normal full power operation, the temperature rise across the condenser shall not exceed 26°F or 14.3°C. Under the following conditions, the condenser temperature rise shall not exceed 35°F or 20°C for greater than a 72-hour period: 1) Condenser and/or circulating water pump maintenance; 2) Throttling circulating water pumps to minimize use of chlorine; 3) Fouling of circulating water system.

Monitoring Requirements

The ΔT across the condenser shall be determined once per hour while the unit is in operation. The system's accuracy and precision is as described in Section 3.1.A.5 of Appendix B of the technical specifications.

Bases

The limitations provide reasonable assurance that the overall aquatic ecosystem in the area of the thermal plume will experience an acceptable environmental impact. The placement of the temperature monitoring instrument in the discharge canal will give the temperature of the discharge water before mixing with the receiving water.

2.2 CHEMICAL

Objective

The purpose of these specifications is 1) to minimize impacts to the quality of the Atlantic Ocean, 2) to protect the local biota from lethal and sublethal effects of exposure to chemical discharges due to operation of the plant, 3) to assure that continued multiple use of the receiving waters by human populations is protected, and 4) to control the quality of the receiving medium.

TABLE 2.4-1
RADIOACTIVE LIQUID SAMPLING AND ANALYSIS

Liquid Source	Sampling Frequency	Type of Activity Analysis	Detectable Concentrations - (uCi/ml)[1]
A. Monitor Tank Releases	Each Batch	Principal Gamma Emitters[6]	5×10^{-7}[2]
	One batch/month	Dissolved Gases[5]	10^{-5}
	Weekly Composite[3]	Ba-La-140, I-131	10^{-6}
	Monthly Composite[3]		
		H-3	10^{-5}
		Gross α	10^{-7}
	Quarterly Composite[3]	Sr-90, Sr-89	5×10^{-3}
B. Steam Generator Blowdown Releases	weekly[4,6,7]	Principal Gamma emitters	5×10^{-7}[2]
		Ba-La-140, I-131	10^{-6}
	One Sample/ Month	Dissolved Gases[5]	10^{-5}
	Monthly Composite[4]		
		H-3	10^{-5}
		Gross α	10^{-7}
	Quarterly Composite[4]	Sr-90, Sr-89	5×10^{-3}
C. Service Water[8] Discharge Pipe	weekly[4,6,7]	Principal Gamma emitters	5×10^{-7}[2]
		Ba-La-140, I-131	10^{-6}
	One Sample/ Month	Dissolved Gases[5]	10^{-5}
	Monthly Composite[4]	H-3	10^{-5}
		Gross α	10^{-7}
	Quarterly Composite[4]	Sr-90, Sr-89	5×10^{-3}

TABLE 2.4-1 (Cont'd)

[1] The detectability limits for activity analysis are based on the technical feasibility and on the potential significance in the environment of the quantities released. For some nuclides, lower detection limits may be readily achievable, and when nuclides are measured below the stated limits, they should also be reported.

[2] For certain mixtures of gamma emitters, it may not be possible to measure radionuclides in concentrations near their sensitivity limits when other nuclides are present in the sample in much greater concentrations. Under these circumstances, it will be more appropriate to calculate the concentrations of such radionuclides using measured ratios with those radionuclides which are routinely identified and measured.

[3] A composite sample is one in which the quantity of liquid sampled is proportional to the quantity of liquid waste discharged.

[4] To be representative of the average quantities and concentrations of radioactive materials in liquid effluents, samples should be collected in proportion to the rate of flow of the effluent stream. Prior to analyses, all samples taken for the composite should be thoroughly mixed in order for the composite sample to be representative of the average effluent release.

[5] For dissolved noble gases in water, assume a MPC of 4×10^{-5} µCi/ml of water.

[6] When operational or other type of limitations preclude specific gamma spectrum analysis of each tank, gross activity measurements shall be made to estimate the quantity and concentration of radioactive material released in the batch and a weekly sample composited from proportional aliquots from each batch released during the week shall be analyzed for the principal gamma emitting radionuclides.

[7] No sampling required when cold and drained.

[8] Required if the component cooling water (CCW) monitor is out of service or if the CCW monitor indicates activity in excess of 10^{-5} µCi/cc.

d. During the release of gaseous wastes from the gas decay tanks, the gaseous discharge monitor shall be operating and set to alarm and to initiate the automatic closure of the waste gas discharge valve prior to exceeding the limits specified in 2.4.3.a above. Whenever this monitor is inoperable for a period not to exceed seven days, two independent samples of each gas decay tank to be discharged shall be analyzed and two plant personnel shall independently check valving prior to the discharge. If this monitor is inoperable for a period exceeding seven days, no release from a gas decay tank shall be made and any release in progress shall be terminated. The operability of each automatic isolation valve shall be demonstrated quarterly.

e. The maximum activity to be contained in one waste gas storage tank shall not exceed 110,000 curies (considered as Xe-133).

f. An unplanned or uncontrolled offsite release of radioactive materials in gaseous effluents in excess of 5 curies of noble gas or 0.02 curie of radioiodine in gaseous form requires notification. This notification shall be in accordance with Specification 5.6.2.b(3).

2.4.4 Gaseous Waste Sampling and Monitoring

a. Plant records shall be maintained and reports of the sampling and analyses results shall be submitted in accordance with Section 5.6 of these Specifications. Estimates of the sampling and analytical error associated with each reported value should be included.

b. Gaseous releases to the environment, except from the turbine building ventilation exhaust and as noted in Specification 2.4.4.c, shall be continuously monitored for gross radioactivity. Whenever these monitors are inoperable, grab samples shall be taken and analyzed daily for gross radioactivity. If these monitors are inoperable for more than seven days, these releases shall be terminated.

c. During the release of gaseous wastes from the primary system waste gas holdup system, the iodine collection device, and the particulate collection device shall be operating, except as noted in 2.4.3.d., above.

d. All waste gas effluent monitors shall be calibrated at least quarterly by means of a known radioactive source which has been calibrated to a National Bureau of Standards source. Each monitor shall have a functional test at least monthly and instrument check at least daily.

e. Sampling and analysis of radioactive material in gaseous waste, including particulate forms and radioiodines shall be performed in accordance with Table 2.4-4. The points of release to the environment to be monitored in this Section 2.4.4 include all the monitored release points as provided for in Table 2.4-5.

TABLE 2.4-5

ST. LUCIE PLANT GASEOUS WASTE SYSTEM
LOCATION OF PROCESS AND EFFLUENT MONITORS AND SAMPLERS REQUIRED BY TECHNICAL SPECIFICATIONS

Process Stream or Release Point	Alarm	Auto Control to Isolation Valve	Continuous Monitor	Grab Sample Station	Measurement				
					Noble Gas	I	Particulate	H-3	Alpha
Waste Gas Storage Tanks	X	X	X	X	X	X	X	X	X
Condenser Air Ejector	X		X	X	X	X	X	X	X
Building Ventilation Systems									
Reactor Containment Building[a] (whenever there is flow to Plant Vent)	X		X	X	X	X	X	X	X
Auxiliary Building[a] (to Plant Vent)	X		X	X	X	X	X	X	X
Fuel Handling & Storage Building[a]	X		X	X	X	X	X	X	X
Radwaste Area[a] (to Plant Vent)	X		X	X	X	X	X	X	X
Steam Generator Blowdown Tank Vent[b]	X		X	X	X	X	X	X	X
Turbine Gland Seal Condenser[c]	X		X	X	X	X	X	X	X

[a] If any or all of the process streams or building ventilation systems are routed to a single release point, the need for a continuous monitor at the individual discharge point to the main exhaust duct is eliminated. One continuous monitor at the final release point is sufficient.

[b] In some PWRs the steam generator blowdown tank vent is routed to the main turbine condenser, and the need for a continuous monitor at this release point is eliminated.

[c] Monitored via Condenser Air Ejector System.

Specification

pH shall be monitored daily using grab samples or a recorder in the discharge canal. See Section 2.2.2 for limiting conditions.

Reporting Requirements

pH measurements shall be reported in the Annual Environmental Monitoring Report.

3.1.A.4 Dissolved Oxygen

Objective

The purpose of this surveillance is to monitor dissolved oxygen (DO).

Specification

DO shall be monitored weekly, using grab samples, in the intake and discharge canals.

Reporting Requirements

Concentrations shall be reported in the Annual Environmental Monitoring Report.

3.1.A.5 Temperature

Objective

To provide temperature data to limit thermal stress to the aquatic ecosystem.

Specification

A continuous temperature measurement system shall monitor circulating water temperature at the intake to Unit 1 and in the discharge canal. Both intake and discharge water temperature monitors shall have an accuracy of ±2°F or ±1°C. Signals shall be transmitted to the control room and displayed. The system shall have an alarm function to alert the control room operator of circulating water temperatures being at the maximum allowable limit.

A back-up system shall also be operable to monitor temperatures whenever the primary system fails. The back-up system does not have to transmit temperatures to the control room. Its overall accuracy shall also be ±2°F or ±1°C.

The maximum discharge temperature limitations shall be as described in Section 2.1.1.

In order to demonstrate compliance with the temperature rise limitations outside the zone of mixing, infrared aerial photography shall be employed, along with field measurements for ground truth. Four flights shall be scheduled during the first year of operation of Unit No. 1 after the unit is available for loading above 80% power level. Flights shall be spaced at approximately three month intervals, weather permitting, when the unit is operating at a power level of 80% or greater.

To demonstrate compliance with the temperature rise limitations within the zone of mixing, two self-contained recording thermographs shall be used. One thermograph shall be located at the surface of the water, at the point of maximum surface temperature of the Unit No. 1 discharge. This point has been determined by previous modeling studies. A second thermograph shall be located at the surface near the intake velocity cap of the Unit No. 1 to determine ambient temperature. These thermographs shall have an accuracy of ± 1.2°F or ± 0.7°C in a range from 50°F to 110°F or 10°C to 40°C.

Reporting Requirement

Results of this thermal monitoring program shall be summarized in the Annual Environmental Monitoring Report.

3.1.B BIOTIC

Objective

To determine the effects of plant operation on the planktonic, nektonic, and benthic populations of the Atlantic Ocean near the discharge during plant operation.

Specification

The biological conditions shall be assessed, 1) in terms of abundance and compositions of the marine biotic community, and 2) the relationship between certain chemical and physical properties of the waters and the character of the biological community.

The five sampling locations established during a pre-operational baseline biology program will be utilized for plankton, trawl, and benthic collections. The sampling schedule will be as follows:

a. Benthic Organisms - Benthic organisms will be collected quarterly and inventoried as to type and abundance of major taxonomic groups present.

b. Plankton - Plankton samples will be collected monthly. Both zooplankton and phytoplankton species will be identified as to kind and abundance. Chlorophyll "a" analysis will be performed as a measure of primary productivity.

c. Nektonic Organisms - Samples will be collected monthly by trawling, seining, or other suitable method. Types and numbers of organisms present will be determined, including species of migratory fish of commercial and sports fisheries value such as blue fish and mackerel.

d. Macrophytes - Macroscopic aquatic vegetation will be collected quarterly and identified as to species and abundance.

e. Water Quality - Analysis will be made on water samples taken at bottom, mid-depth, and surface levels at the same time as the biotic samples are collected. Parameters studied will be temperature, salinity, dissolved oxygen content, turbidity. Water samples for selected nutrient analyses will be collected at the time of plankton sampling.

f. Migratory Sea Turtles - The species, numbers, and nesting characteristics of sea turtles that migrate in from the sea and nest along the east coast of Florida will be determined on the FPL shoreline property and selected adjacent control areas in 1975 and 1977. A study shall be conducted to determine the effects of the discharge thermal plume on turtle nesting patterns and turtle hatchling migration. In addition, control studies on temperature stress, hatching, and rearing factors will be conducted using turtle eggs from displaced nests.

Based on the data obtained, predictions will be made on the impact of the plant's operation on baseline biological conditions and current uses of the waters.

Florida Power and Light will review the data after two years of plant operation. If effects attributable to the plant are found acceptable, the results shall be reviewed by NRC to determine if the biotic program, or any portion thereof, should be terminated.

4.0 SPECIAL SURVEILLANCE AND SPECIAL STUDY ACTIVITIES

4.1 Entrainment of Aquatic Organisms

Objective

The purpose of this study is to assess the effects on planktonic organisms of passage through the plant condensers. Specialists in the biological sub-disciplines of zooplankton and ichthyology will perform appropriate portions of this study. Figures obtained for the intake and discharge canals will be compared to data collected at a control station.

Specification

Samples shall be collected from the intake and discharge canals and a control station at monthly intervals when the unit is in operation to identify the organisms involved, and to attempt to quantify how many of each organism are potentially affected. Biomass measurements, numbers of eggs collected, and numbers and identification of larvae - to the level of major taxonomic groups, if possible - shall be performed. Present "state-of-the-art" information shall be used to attempt to quantify the mortality of the organisms due to entrainment. This program shall determine the seasonal abundance of fish eggs and larvae.

Reporting Requirements

Results of this study shall be summarized in the Annual Environmental Monitoring Report. If, at the end of two years, no significant problem is evident, an option to formally delete this portion of the Technical Specifications may be initiated.

4.2 Minimum Effective Chlorine Usage

Objective

The purpose of this study is to determine the minimum amount of chlorine necessary which will afford adequate protection to the condenser while avoiding unnecessary discharge of chlorine to the environment.

Specification

A program shall be initiated after Unit 1 has initially reached 75% power level. The initial chlorine injection rate shall be determined based on preoperational data, previous experience, and laboratory chlorine demand tests. After reaching a power plateau above 75% power, a controlled incremental reduction of the chlorine injection rate shall be implemented. Condenser fouling shall be monitored in coordination with chlorine reduction.

Reporting Requirements

The results of this study shall be summarized in the Annual Environmental Monitoring Report. When the minimum level of chlorine usage, as determined by the study, has been reached, a proposal shall be submitted to the NRC to terminate the study.

5.0 ADMINISTRATIVE CONTROLS

The purpose of this section is to describe the administrative and management controls necessary to provide continuing protection to the environment, and to implement the environmental technical specifications (ETS).

5.1 Responsibility

The Director, Licensing & Environmental Planning Department has the ultimate responsibility for the implementation of the ETS. He may delegate to other departments and/or organizations the work of establishing and executing portions of the ETS, but shall retain responsibility thereof.

The Licensing & Environmental Planning Department is responsible for executing the non-radiological biotic and special studies sections of the ETS. The Vice President of Power Resources is responsible for executing the non-radiological abiotic, radioactive effluents, and the Radiological Environmental Surveillance sections.

The Director of Quality Assurance shall be responsible for periodic audits, conducted according to the corporate Quality Assurance program, to insure compliance with the ETS.

5.2 Organization

The corporate organization involved in environmental matters is depicted in Figure 5.2-1.

5.3 Review and Audit

5.3.1 Review of implementation of the ETS shall be made by the Company Environmental Review Group (CERG) or by the Facility Review Group (FRG). Secondary reviews shall be made by the Company Nuclear Review Board (CNRB).

5.3.2 FRG and CNRB membership and responsibilities are described in Appendix A, Technical Specifications.

5.3.3 Company Environmental Review Group (CERG)

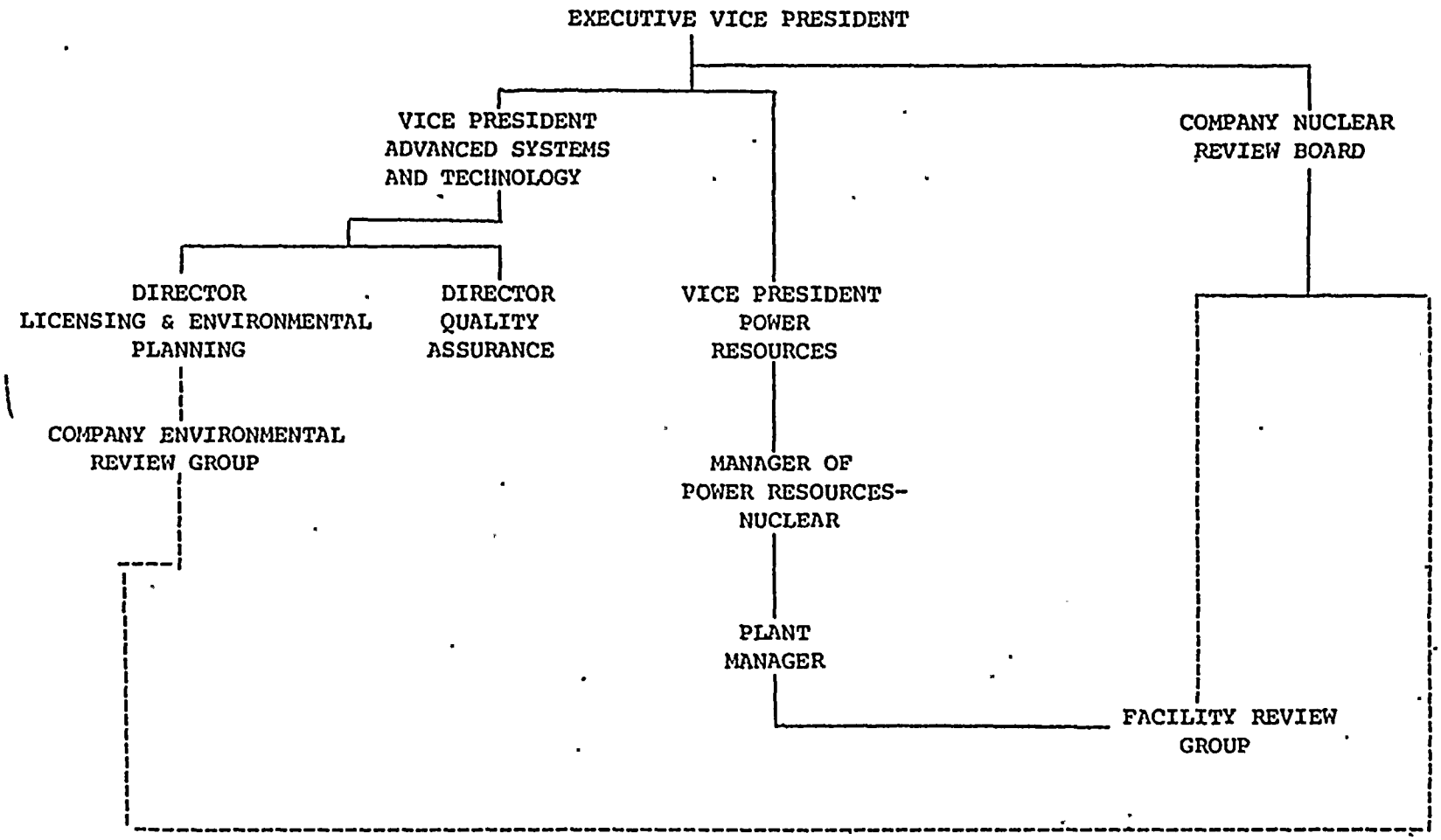
A. Function

The Company Environmental Review Group (CERG) shall function to advise the Director, Licensing & Environmental Planning Department on all matters related to environmental quality.

B. Membership

1. Manager, Environmental Engineering - Chairman

2. Manager, Environmental Affairs



FLORIDA POWER & LIGHT COMPANY
CORPORATE ORGANIZATION - ENVIRONMENTAL AFFAIRS
FIGURE 5.2-1

_____ AUTHORITY

_ _ _ _ _ _ _ COMMUNICATION

3. Environmental Engineer, Environmental Engineering

4. Power Resources Section Supervisor - Test & Performance

5. Environmental Department Life Scientist

6. Environmental Department Senior Project Coordinator

7. Plant Supervisor (Plant involved)

8. Manager - Land Utilization

9. Radiological Emergency Plan Administrator

C. Alternates

Alternate members shall be appointed in writing by the CERG Chairman. No more than two alternates shall participate in CERG activities at any one time.

D. Meeting Frequency

The CERG shall meet at least semiannually and as convened by the CERG Chairman or designated acting Chairman.

E. Quorum

A quorum of the CERG shall consist of the Chairman, or designated acting Chairman and three members including alternates.

F. Responsibilities

1. Review of all Environmental Department procedures required by Environmental Technical Specifications and changes thereto as determined by the Plant Manager to affect the environment.

2. Review results of the environmental monitoring programs prior to their submittal to the NRC.

3. Review of all proposed test and experiments as determined by the Plant Manager to affect the environment.

4. Review of all proposed changes to the Environmental Technical Specifications.

5. Review of all proposed changes or modifications to plant systems or equipment as determined by the Plant Manager to affect the environment.

6. Review of Environmental Technical Specifications reportable occurences within two months after the event.

7. Review of violations of the Environmental Technical Specifications within two months after notification by the NRC.

8. Performance of special reviews and investigations and reports thereon as required by the Chairman of the Company Nuclear Review Board.

G. Authority

The Company Environmental Review Group shall recommend to the Director, Licensing & Environmental Planning Department written approval or disapproval of the items considered under F.1 through F.5 above.

H. Records

The Company Environmental Review Group shall maintain written minutes of each meeting and copies shall be provided to the Director, Licensing & Environmental Planning Department, Vice President, Power Resources, and the Chairman of the Company Nuclear Review Board.

5.3.4 Periodic audits concerning the implementation of the ETS shall be made as provided in the Quality Assurance Manual.

5.4 Action to be Taken if a Limiting Condition is Exceeded

5.4.1 When a Limiting Condition is exceeded, action shall be taken as permitted by the applicable specification until the condition can be met.

5.4.2 Exceeding a Limiting Condition shall be investigated by the Company Environmental Review Group or by the Facility Review Group.

5.4.3 All reviews and actions taken, with reasons therefor, shall be recorded and maintained as part of the permanent records.

5.4.4 Each instance whereby a Limiting Condition is exceeded shall be reported to the Company Nuclear Review Board.

5.5.5 A report for each occurrence shall be prepared as specified in Section 5.6.2.

5.5 Procedures

5.5.1 Detailed written procedures, including applicable check lists and instructions, shall be prepared and followed for activities involved in carrying out the environmental technical specifications. Procedures shall include sampling, data recording and storage, instrument calibration, measurements and analyses, and actions to be taken when limits are exceeded. Testing frequency of any alarms shall be included.

5.5.2 Plant operating procedures shall include provisions to ensure that plant systems and components are operated in compliance with the environmental technical specifications.

5.6 Reporting Requirements

5.6.1 Routine Reports

5.6.1.a Annual Non-Radiological Environmental Monitoring Report

A report on the environmental surveillance programs for the previous 12 months of operation shall be submitted to the Director of the Regional Office of Inspection and Enforcement with a copy to the Director of the Office of Inspection and Enforcement as a separate document within 90 days after January 1 of each year. In the event that some of the results are not available within the 90 day period, the report shall be submitted noting and explaining the missing results. The missing data shall be submitted as soon as possible in a supplementary report. The period of the first report shall begin with the date of initial criticality. The report shall include summaries and interpretations of the results of the non-radiological environmental surveillance activities (Section 3.0) and the environmental monitoring programs required by Limiting Conditions for Operation. This should also include a comparison with preoperational studies, operational controls (as appropriate), and previous environmental surveillance reports, and an assessment of the observed impacts of the plant operation on the environment. If harmful effects or evidence of irreversible damage are detected by the monitoring, the licensee shall provide an analysis of the problem and a proposed course of action to alleviate the problem.

5.6.1.b Annual Radiological Environmental Monitoring Report

A report on the radiological environmental surveillance programs for the previous 12 months of operation shall be submitted to the Director of the NRC Regional Office (with a copy to the Director, Office of Nuclear Reactor Regulation) as a separate document within 90 days after January 1 of each year. The period of the first report shall begin with the date of initial criticality. The reports shall include summaries, interpretations, and statistical evaluation of the results of the radiological environmental surveillance activities for the report period, including a comparison with preoperational studies, operational controls (as appropriate), and previous environmental surveillance reports and an assessment of the observed impacts of the plant operation on the environment. The reports shall also include the results of land use censuses required by the specifications. If harmful effects or evidence of irreversible damage are detected by the monitoring, the licensee shall provide an analysis of the problem and a proposed course of action to alleviate the problem.

Results of all radiological environmental samples taken shall be summarized on an annual basis in a format similar to that indicated in Table 5.6.1-A. In the event that some results are not available within the 90-day period, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted as soon as possible in a supplementary report.

TABLE 5.6.1-A

FORMAT FOR ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

NAME OF FACILITY ST. LUCIE PLANT, UNIT 1 DOCKET NO. 50-335

LOCATION OF FACILITY ST. LUCIE COUNTY, FLORIDA REPORTING PERIOD _____

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection[a] (LLD)	All Indicator Locations Mean (f)[b] Range[b]	Location with Highest Annual Mean		Control Locations Mean (f)[b] Range[b]	Number of Nonroutine Reported Measurements[c]
				Name Distance and Direction	Mean (f)[b] Range[b]		
Air Particulates							
(pCi/m^3)	Gross β 416	0.003	0.08 (200/312) (0.05-2.0)	Middletown 5 miles 340°	0.10 (5/52) (0.08-2.0)	0.08 (8/104) (0.05-1.40)	1
	γ -Spec.32						
	^{137}Cs	0.003	0.05 (4/24) (0.03-0.13)	Smithville 2.5 miles 160°	0.08 (2/4) (0.03-013)	<LLD	4
	^{140}Ba	0.003	0.03 (2/24) (0.01-0.08)	Podunk 4.0 miles 270°	0.05 (2/4) (0.01-0.08)	0.02 (1/8)	1
	^{89}Sr 40	0.002	<LLD	-	-	<LLD	0
	^{90}Sr 40	0.0003	<LLD	-	-	<LLD	0
Fish							
pCi/kg (dry weight)	γ -Spec. 8						
	^{137}Cs	80	<LLD	-	<LLD	90 (1/4)	0
	^{134}Cs	80	<LLD	-	<LLD	<LLD	0
	^{60}Co	80	120 (3/4) (90-200)	River Mile 35 Podunk River	Sea column 4	<LLD	0

[a] Nominal Lower Limit of Detection (LLD) as defined in HASL-300 (Rev. 8/74) pp. D-08-01, 02, 03 at the 95% compliance level.

[b] Mean and range based upon detection measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses (f).

[c] Nonroutine reported measurements as defined in Section 5.6.2.b.

Amendment No. 29

Example Data Presentation

5.6.1.c Semiannual Radioactive Effluent Release Report

A report on the radioactive discharges (Regulatory Guide 1.21, Rev. 1, June 1974) released from the site during the previous 6 months of operation shall include the following:

Analyses of Effluent releases shall be summarized on a quarterly basis and reported in a format similar to Tables 5.6.1-B, C, D and E.

Supplemental information shall be included covering topics similar to those itemized in Data Sheet 5.6.1-1.

Abnormal releases should be handled as batch releases for accounting purposes.

Solid wastes shall be summarized on a quarterly basis and reported in a format similar to that of Table 5.6.1-F.

The following information should be reported for shipments of solid waste and irradiated fuel transported from the site during the report period:

1. The semiannual total quantity in cubic meters and the semiannual total radioactivity in curies for the categories or types of waste.

   a. Spent resins, filter sludges, evaporator bottoms;

   b. Dry compressible waste, contaminated equipment, etc.;

   c. Irradiated components, control rods, etc.;

   d. Other (furnish description).

2. An estimate of the total activity in the categories of waste in 1, above.

3. The disposition of solid waste shipments. (Identify the number of shipments, the mode of transport, and the destination.)

4. The disposition of irradiated fuel shipments. (Identify the number of shipments, the mode of transport, and the destination.)

5.6.2 Non-Routine Reports

5.6.2.a Non-Radioactive Effluent Reports

A report shall be submitted in the event that: a) a limiting condition is exceeded (as specified in Section 2.0 Limiting Conditions), or an unusual or important event occurs that causes a significant environmental impact, that affects potential environmental impact from plant operation, or that has high public or potential public interest concerning environmental impact from plant operation. Reports shall be submitted under one of the report schedules described below.

DATA SHEET 5.6.1-1

EFFLUENT AND WASTE DISPOSAL

Supplemental Information

Facility_____ License_____

1. Regulatory Limits

   a. Fission and activation gases:
   b. Iodines:
   c. Particulates, half-lives >8 days:
   d. Liquid effluents:

2. Maximum Permissible Concentrations

   Provide the MPCs used in determining allowable release or concentrations.

   a. Fission and activation gases:
   b. Iodines:
   c. Particulates, half-lives >8 days:
   d. Liquid effluents:

3. Average Energy

   Provide the average ($\bar{E}$) of the radionuclide mixture in releases of fission and activation gases, if applicable.

4. Measurements and Approximations of Total Radioactivity

   Provide the methods used to measure or approximate the total radioactivity in effluents and the methods used to determine radionuclide composition.

   a. Fission and activation gases:
   b. Iodines:
   c. Particulates:
   d. Liquid effluents:

5. Batch Releases

   Provide the following information relating to batch releases of radioactive materials in liquid and gaseous effluents.

TABLE 5.6.1-B

GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES

	Unit	Quarter	Quarter
A. Fission & activation gases			
1. Total release	Ci	. E	. E
2. Average release rate for period	µCi/sec	. E	. E
3. Percent of Technical specification limit	%	. E	. E
B. Iodines			
1. Total iodine-131	Ci	. E	. E
2. Average release rate for period	µCi/sec	. E	. E
3. Percent of Technical specification limit	%	. E	. E
C. Particulates			
1. Particulates with half-lives 8 days	Ci	. E	. E
2. Average release rate for period	µCi/sec	. E	. E
3. Percent of Technical specification limit	%	. E	. E
4. Gross alpha radioactivity	Ci	. E	. E
D. Tritium			
1. Total release	Ci	. E	. E
2. Average release rate for period	µCi/sec	. E	. E

TABLE 5.6.1-C

GASEOUS EFFLUENTS

		CONTINUOUS MODE		BATCH MODE	
Nuclides Released	Unit	Quarter	Quarter	Quarter	Quarter
1. Fission gases					
krypton-85	Ci	. E	. E	. E	. E
krypton-85m	Ci	. E	. E	. E	. E
krypton-87	Ci	. E	. E	. E	. E
krypton-88	Ci	. E	. E	. E	. E
xenon-133	Ci	. E	. E	. E	. E
xenon-135	Ci	. E	. E	. E	. E
xenon-135m	Ci	. E	. E	. E	. E
xenon-138	Ci	. E	. E	. E	. E
Others (specify)	Ci	. E	. E	. E	. E
	Ci	. E	. E	. E	. E
	Ci	. E	. E	. E	. E
unidentified	Ci	. E	. E	. E	. E
Total for period	Ci	. E	. E	. E	. E
2. Iodines					
iodine-131	Ci	. E	. E	. E	. E
iodine-133	Ci	. E	. E	. E	. E
iodine-135	Ci	. E	. E	. E	. E
Total for period	Ci	. E	. E	. E	. E
3. Particulates					
strontium-89	Ci	. E	. E	. E	. E
strontium-90	Ci	. E	. E	. E	. E
cesium-134	Ci	. E	. E	. E	. E
cesium-137	Ci	. E	. E	. E	. E
barium-lanthanum-140	Ci	. E	. E	. E	. E
Others (specify)	Ci	. E	. E	. E	. E
	Ci	. E	. E	. E	. E
	Ci	. E	. E	. E	. E
unidentified	Ci	. E	. E	. E	. E

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TABLE 5.6.1-D

LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES

	Unit	Quarter	Quarter
A. Fission and activation products			
1. Total release (not including tritium, gases, alpha)	Ci	. E	. E
2. Average diluted concentration during period	µCi/ml	. E	. E
3. Percent of applicable limit	%	. E	. E
B. Tritium			
1. Total release	Ci	. E	. E
2. Average diluted concentration during period	µCi/ml	. E	. E
C. Dissolved and entrained gases			
1. Total release	Ci	. E	. E
2. Average diluted concentration during period	µCi/ml	. E	. E
3. Percent of applicable limit	%	. E	. E
D. Gross alpha radioactivity			
1. Total release	Ci	. E	. E
E. Volume of waste released (prior to dilution)	liters	. E	. E
F. Volume of dilution water used during period	liters	. E	. E

TABLE 5.6.1-E

LIQUID EFFLUENTS

		CONTINUOUS MODE		BATCH MODE	
Nuclides Released	Unit	Quarter	Quarter	Quarter	Quarter
strontium-89	Ci	. E	. E	. E	. E
strontium-90	Ci	. E	. E	. E	. E
cesium-134	Ci	. E	. E	. E	. E
cesium-137	Ci	. E	. E	. E	. E
iodine-131	Ci	. E	. E	. E	. E
cobalt-58	Ci	. E	. E	. E	. E
cobalt-60	Ci	. E	. E	. E	. E
iron-59	Ci	. E	. E	. E	. E
zinc-59	Ci	. E	. E	. E	. E
manganese-54	Ci	. E	. E	. E	. E
chromium-51	Ci	. E	. E	. E	. E
zirconium-niobium-95	Ci	. E	. E	. E	. E
molybdenum-99	Ci	. E	. E	. E	. E
technetium-99m	Ci	. E	. E	. E	. E
barium-lanthanum-140	Ci	. E	. E	. E	. E
cerium-141	Ci	. E	. E	. E	. E
Other (specify)	Ci	. E	. E	. E	. E
	Ci	. E	. E	. E	. E
	Ci	. E	. E	. E	. E
	Ci	. E	. E	. E	. E
	Ci	. E	. E	. E	. E
unidentified	Ci	. E	. E	. E	. E
Total for period (above)	Ci	. E	. E	. E	. E
xenon-133	Ci	. E	. E	. E	. E
xenon-135	Ci	. E	. E	. E	. E

TABLE 5.6.1-F

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (Not irradiated fuel)

1. Type of waste	Unit	6-month Period
a. Spent resins, filter sludges, evaporator bottoms, etc.	m^3 Ci	E E
b. Dry compressible waste, contaminated equip etc.	m^3 Ci	E E
c. Irradiated components, control rods, etc.	m^3 Ci	E E
d. Other (describe)	m^3 Ci	E E

2. SOLID WASTE DISPOSITION

Number of Shipments	Mode of Transportation	Destination

B. IRRADIATED FUEL SHIPMENTS (Disposition)

Number of Shipments	Mode of Transportation	Destination