



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

DUKE ENERGY FLORIDA, INC.
SEMINOLE ELECTRIC COOPERATIVE, INC.

DOCKET NO. 50-302

CRYSTAL RIVER UNIT 3 NUCLEAR GENERATING PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 248
License No. DPR-72

1. The Nuclear Regulatory Commission (the Commission) having found that:
 - A. The application filed by Florida Power Corporation and SEMINOLE ELECTRIC COOPERATIVE, INC. (the licensees) as supplemented by letter dated December 9, 1976, 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 1; ***
 - B. Construction of the Crystal River Unit 3 Nuclear Generating Plant (facility) has been substantially completed in conformity with Provisional Construction Permit No. CPPR-51 and the application, as amended, the provisions of the Act and the rules and regulations of the Commission;
 - C. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;

***On April 29, 2013, the name "Florida Power Corporation" was changed to "Duke Energy Florida, Inc."

DO NOT REMOVE

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- D. There is reasonable assurance: (i) that the activities authorized by this operating license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the rules and regulations of the Commission;
 - E. The licensees are financially qualified and Duke Energy Florida, Inc. is technically qualified to engage in the activities authorized by this operating license in accordance with the rules and regulations of the Commission;
 - F. The licensees have satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;
 - G. The issuance of this operating license will not be inimical to the common defense and security or to the health and safety of the public;
 - H. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs and considering available alternatives, the issuance of Facility Operating License No. DPR-72 subject to the conditions for protection of the environment set forth herein is in accordance with 10 CFR Part 51. (formerly Appendix D to 10 CFR Part 50), of the Commission's regulations and all applicable requirements have been satisfied;
 - I. The receipt, possession, and use of source, byproduct and special nuclear material as authorized by this license will be in accordance with the Commission's regulations in 10 CFR Part 30, 40 and 70, including 10 CFR Sections 30.33, 40.32 and 70.23 and 70.31.
2. Facility Operating License No. DPR-72, issued to the licensees, is hereby amended in its entirety to read as follows:
- A. This amended license applies to the Crystal River Unit 3 Nuclear Generating Plant, a pressurized water nuclear reactor and associated equipment (the facility), owned by the licensees and operated by Duke Energy Florida, Inc. The facility is located on the Gulf of Mexico, about seven and one-half miles northwest of the town of Crystal River, Citrus County, Florida, and is described in the "Final Safety Analysis Report" as supplemented and amended (Amendment 11 through 50) and the Environmental Report as supplemented and amended (Amendments 1 through 3).

Revised page submitted 2-24-77

Facility Operating License No. DPR-72
Amendment No. 243

B Subject to the conditions and requirements incorporated herein, the Commission hereby licenses:

- (1) Duke Energy Florida, Inc., pursuant to Section 104b of the Act and 10 CFR Part 50, "Licensing of Production and Utilization Facilities," to possess and use the facility;
 - (2) The licensees to possess the facility at the designated location in Citrus County, Florida, in accordance with the procedures and limitations set forth in this license;
 - (3) Duke Energy Florida, Inc., pursuant to the Act and 10 CFR Part 70, to possess at any time special nuclear material configured as reactor fuel, in accordance with the limitations for storage as described in the Final Safety Analysis Report, as supplemented and amended;
 - (4) Duke Energy Florida, Inc., pursuant to the Act and 10 CFR Parts 30, 40 and 70 to possess at any time any byproduct, source and special nuclear material as sealed neutron sources used previously for reactor startup, as fission detectors, and sealed sources for reactor instrumentation and to possess and use at any time any byproduct, source, and special nuclear material as sealed sources for radiation monitoring equipment calibration in amounts as required;
 - (5) Duke Energy Florida, Inc., pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radio-active apparatus or components;
 - (6) Duke Energy Florida, Inc., pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- 2.B.(7) Duke Energy Florida, Inc., pursuant to the Act and 10 CFR Parts 30 and 70, to receive and possess, but not separate, that by-product and special nuclear materials associated with four (4) fuel assemblies (B&W Identification Numbers 1A-01, 04, 05 and 36 which were previously irradiated in the Oconee Nuclear Station, Unit No. 1) acquired by Florida Power Corporation from Duke Power Company for use as reactor fuel in the facility.

Added
Per
Amdt. 15,
7-24-78

C. This license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Section 50.54 and 50.59 of part 50, Section 70.32 of Part 70; and is subject to all applicable provisions

***On April 29, 2013, the name "Florida Power Corporation" was changed to "Duke Energy Florida, Inc."

of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

2.C.(1) Deleted per Amendment No. 247

2.C.(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 249, are hereby replaced with the Permanently Defueled Technical Specifications (PDTs). Duke Energy Florida, Inc. shall maintain the facility in accordance with the Permanently Defueled Technical Specifications.

2.C.(3) Deleted per Amendment No. 247

2.C.(4) DELETED per Amendment No. 20 dated 7-3-79.

2.C.(5) Deleted per Amendment No. 247

2.C.(6) Deleted per Amendment No. 21, 7-3-79

2.C.(7) Deleted per Amendment No. 247

2.C.(8) Deleted per Amendment No. 247

2.C.(9) Deleted per Amendment No. 247

2.C.(10) Deleted per Amendment No. 247

2.C.(11) Deleted per Amendment No. 247

2.C.(12) Deleted per Amendment No. 237

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2.C.(14) Mitigation Strategy License Condition

The licensee shall develop and maintain strategies for addressing large fires and explosions and that include the following key areas:

- (1.) Fire fighting responses strategy with the following elements:
 - a. Pre-defined coordinated fire response strategy and guidance
 - b. Assessment of mutual aid fire fighting assets
 - c. Designated staging areas for equipment and materials
 - d. Command and control
 - e. Training of response personnel

- (2.) Operations to mitigate fuel damage considering the following:
 - a. Protection and use of personnel assets
 - b. Communications
 - c. Minimizing fire spread
 - d. Procedures for implementing integrated fire response strategy
 - e. Identification of readily-available pre-staged equipment
 - f. Training on integrated fire response strategy
 - g. Spent fuel pool mitigation measures

- (3.) Actions to minimize release to include consideration of:
 - a. Water spray scrubbing
 - b. Dose to onsite responders

2.C.(15) Deleted per Amendment No. 247

2.D Physical and Cyber Security

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 2781.7 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Physical Security Plan, Revision 5," and "Safeguards Contingency Plan, Revision 4," submitted by letter dated May 16, 2006, and "Guard Training and Qualification Plan, Revision 0," submitted by letter dated September 30, 2004, as supplemented by letters dated October 20, 2004, and September 29, 2005.

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The licensee's CSP was approved by License Amendment No. 238, as supplemented by changes approved by License Amendment Nos. 242 and 245.

DO NOT REMOVE

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E. Deleted per Amendment No. 247

Facility Operating License No. DPR-72
Amendment No. 247

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Deleted per Amendment No. 247

Facility Operating License No. DPR-72
Amendment No. 247

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Deleted per Amendment No. 247

- F. In accordance with the requirement imposed by the October 4, 1976, order of the United States Court Appeals for the District of Columbia Circuit in Natural Resources Defense Council v. Nuclear Regulatory Commission, No. 74-1385 and 74-1586, that the Nuclear Regulatory Commission "shall make any licenses granted between July 21, 1976 and such time when the mandate is issued subject to the outcome of the proceedings herein," the license issued herein shall be subject to the outcome of such proceedings.
- G. This amended license is effective as of the date of issuance. Facility Operating License No. DPR-72, as amended, shall expire at midnight, December 3, 2016.

Amdt. #
97,
MAR 31 1987

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed by

Roger S. Boyd, Director
Division of Project Management
Office of Nuclear Reactor Regulation

Attachments:
Appendices A & B - Technical
Specifications

Date of Issuance: JAN 28 1977

REVISED APPENDIX A TECHNICAL SPECIFICATIONS

TO

FACILITY OPERATING LICENSE NO. DPR-72

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1.0 USE AND APPLICATION

1.1 Definitions

-----NOTE-----
The defined terms of this section appear in capitalized type and are applicable throughout these Technical Specifications and Bases.

| <u>Term</u> | <u>Definition</u> |
|-------------|---|
| ACTIONS | ACTIONS shall be that part of a Specification that prescribes Required Actions to be taken under designated Conditions within specified Completion Times. |

1.0 USE AND APPLICATION

1.2 Logical Connectors

PURPOSE The purpose of this section is to explain the meaning of logical connectors.

Logical connectors are used in Technical Specifications (TS) to discriminate between, and yet connect, discrete Conditions, Required Actions, Completion Times, Surveillances, and Frequencies. The only logical connectors that appear in TS are AND and OR. The physical arrangement of these connectors constitutes logical conventions with specific meanings.

BACKGROUND Several levels of logic may be used to state Required Actions. These levels are identified by the placement (or nesting) of the logical connectors and by the number assigned to each Required Action. The first level of logic is identified by the first digit of the number assigned to a Required Action and the placement of the logical connector in the first level of nesting (i.e., left justified with the number of the Required Action). The successive levels of logic are identified by additional digits of the Required Action number and by successive indentions of the logical connectors.

When logical connectors are used to state a Condition, Completion Time, Surveillance, or Frequency, only the first level of logic is used, and the logical connector is left justified with the statement of the Condition, Completion Time, Surveillance, or Frequency.

(continued)

1.2 Logical Connectors (continued)

EXAMPLES The following examples illustrate the use of logical connectors.

EXAMPLE 1.2-1

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|-----------------|--|-----------------|
| A. LCO not met. | A.1 Verify. . . <u>AND</u> A.2 Restore . . . | |

In this example the logical connector AND is used to indicate that both Required Actions A.1 and A.2 must be completed when in Condition A.

(continued)

1.2 Logical Connectors

EXAMPLES
(continued)

EXAMPLE 1.2-2

ACTIONS

| <u>CONDITION</u> | <u>REQUIRED ACTION</u> | <u>COMPLETION TIME</u> |
|------------------|---|------------------------|
| A. LCO not met. | A.1 Trip . . . <u>OR</u> A.2.1 Verify . . . <u>AND</u> A.2.2.1 Reduce . . . <u>OR</u> A.2.2.2 Perform . . . <u>OR</u> A.3 Align . . . | |

This example represents a more complicated use of logical connectors. Required Actions A.1, A.2, and A.3 are alternative choices, only one of which must be performed as indicated by the use of the logical connector OR and the left justified placement. Any one of these three Actions may be chosen. If A.2 is chosen, then both A.2.1 and A.2.2 must be performed as indicated by the logical connector AND. Required Action A.2.2 is met by performing either A.2.2.1 or A.2.2.2. The indented position of the logical connector OR indicates that A.2.2.1 and A.2.2.2 are alternative choices, only one of which must be performed.

1.0 USE AND APPLICATION

1.3 Completion Times

PURPOSE The purpose of this section is to establish the Completion Time convention and to provide guidance for its use.

BACKGROUND Limiting Conditions for Operation (LCOs) specify minimum requirements for ensuring safe handling and storage of nuclear fuel. The ACTIONS associated with an LCO state Conditions that typically describe the ways in which the requirements of the LCO can fail to be met. Specified with each stated Condition are Required Action(s) and Completion Time(s).

DESCRIPTION The Completion Time is the amount of time allowed for completing a Required Action. It is referenced to the time of discovery of a situation (e.g., inoperable equipment or variable not within limits) that requires entering an ACTIONS Condition unless otherwise specified, providing the facility is in a specified condition stated in the Applicability of the Specification. Required Actions must be completed prior to the expiration of the specified Completion Time. An ACTIONS Condition remains in effect and the Required Actions apply until the Condition no longer exists or the facility is not within the Specification Applicability.

IMMEDIATE COMPLETION TIME When "Immediately" is used as a Completion Time, the Required Action should be pursued without delay and in a controlled manner.

1.0 USE AND APPLICATION

1.4 Frequency

PURPOSE The purpose of this section is to define the proper use and application of Frequency requirements.

DESCRIPTION Each Surveillance Requirement (SR) has a specified Frequency in which the Surveillance must be met in order to meet the associated LCO. An understanding of the correct application of the specified Frequency is necessary for compliance with the SR.

The "specified Frequency" is referred to throughout this section and each of the Specifications of Section 3.0, "Surveillance Requirement (SR) Applicability." The "Specified Frequency" consists of the requirements of the Frequency column of each SR.

(continued)

1.4 Frequency

EXAMPLES The following example illustrates the type of frequency statement that appears in the Permanently Defueled Technical Specifications (PDTs).

EXAMPLE 1.4-1

SURVEILLANCE REQUIREMENTS

| <u>SURVEILLANCE</u> | <u>FREQUENCY</u> |
|---------------------|------------------|
| Perform (activity). | 12 hours |

Example 1.4-1 contains the type of SR encountered in the PDTs. The Frequency specifies an interval (12 hours) during which the associated Surveillance must be performed at least one time. Completion of the Surveillance initiates the subsequent interval. Although the Frequency is stated as 12 hours, an extension of the time interval to 1.25 times the stated Frequency is allowed by SR 3.0.2 for flexibility.

3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

LCO 3.0.1 LCOs shall be met during specified conditions in the Applicability, except as provided in LCO 3.0.2.

LCO 3.0.2 Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met.

 If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required, unless otherwise stated.

3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

SR 3.0.1 SRs shall be met during the specified conditions in the Applicability for individual Specifications, unless otherwise stated in the SR. Failure to meet a Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO. Failure to perform a Surveillance within the specified Frequency shall be failure to meet the LCO except as provided in SR 3.0.3.

SR 3.0.2 The specified Frequency for each SR is met if the Surveillance is performed within 1.25 times the interval specified in the Frequency, as measured from the previous performance or as measured from the time a specified condition of the Frequency is met.

SR 3.0.3 If it is discovered that a Surveillance was not performed within its specified Frequency, then compliance with the requirement to declare the LCO not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified Frequency, whichever is greater. This delay period is permitted to allow performance of the Surveillance. A risk evaluation shall be performed for any Surveillance delayed greater than 24 hours and the risk impact shall be managed.

If the Surveillance is not performed within the delay period, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered.

When the Surveillance is performed within the delay period and the Surveillance is not met, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered.

SR 3.0.4 Entry into a specified condition in the Applicability of an LCO shall only be made when the LCO's Surveillances have been met within their specified Frequency, except as provided by SR 3.0.3.

3.7 PLANT SYSTEMS

3.7.13 Fuel Storage Pool Water Level

LCO 3.7.13 The fuel storage pool water level shall be \geq 156 ft Plant Datum.

APPLICABILITY: During movement of irradiated fuel assemblies in fuel storage pool.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|-----------------|
| A. Fuel storage pool water level not within limit. | A.1 Suspend movement of irradiated fuel assemblies in fuel storage pool. | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|-----------|
| SR 3.7.13.1 Verify the fuel storage pool water level is \geq 156 ft Plant Datum. | 7 days |

Spent Fuel Pool Boron Concentration
3.7.14

3.7 PLANT SYSTEMS

3.7.14 Spent Fuel Pool Boron Concentration

LCO. 3.7.14 The spent fuel pool boron concentration shall be ≥ 1925 ppm.

APPLICABILITY: When fuel assemblies are stored in the spent fuel pool and a spent fuel pool verification has not been performed since the last movement of fuel assemblies in the spent fuel pool.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|-----------------|
| A. Spent fuel pool boron concentration not within limit. | A.1 Suspend movement of fuel assemblies in the spent fuel pool. | Immediately |
| | <u>AND</u> | |
| | A.2.1 Initiate action to restore spent fuel pool boron concentration to within limit. | Immediately |
| | <u>OR</u> | |
| | A.2.2 Verify by administrative means a Storage Pool A and Storage Pool B spent fuel pool verification has been performed since the last movement of fuel assemblies in the spent fuel pool. | Immediately |

Spent Fuel Pool Boron Concentration
3.7.14

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|-----------|
| SR 3.7.14.1 Verify the spent fuel pool boron concentration is \geq 1925 ppm. | 7 days |

3.7 PLANT SYSTEMS

3.7.15 Spent Fuel Assembly Storage

LCO 3.7.15 The combination of initial enrichment and burnup of each spent fuel assembly stored in Storage Pool A and Storage Pool B, shall be within the acceptable region of Figure 3.7.15-1 or Figure 3.7.15-2.

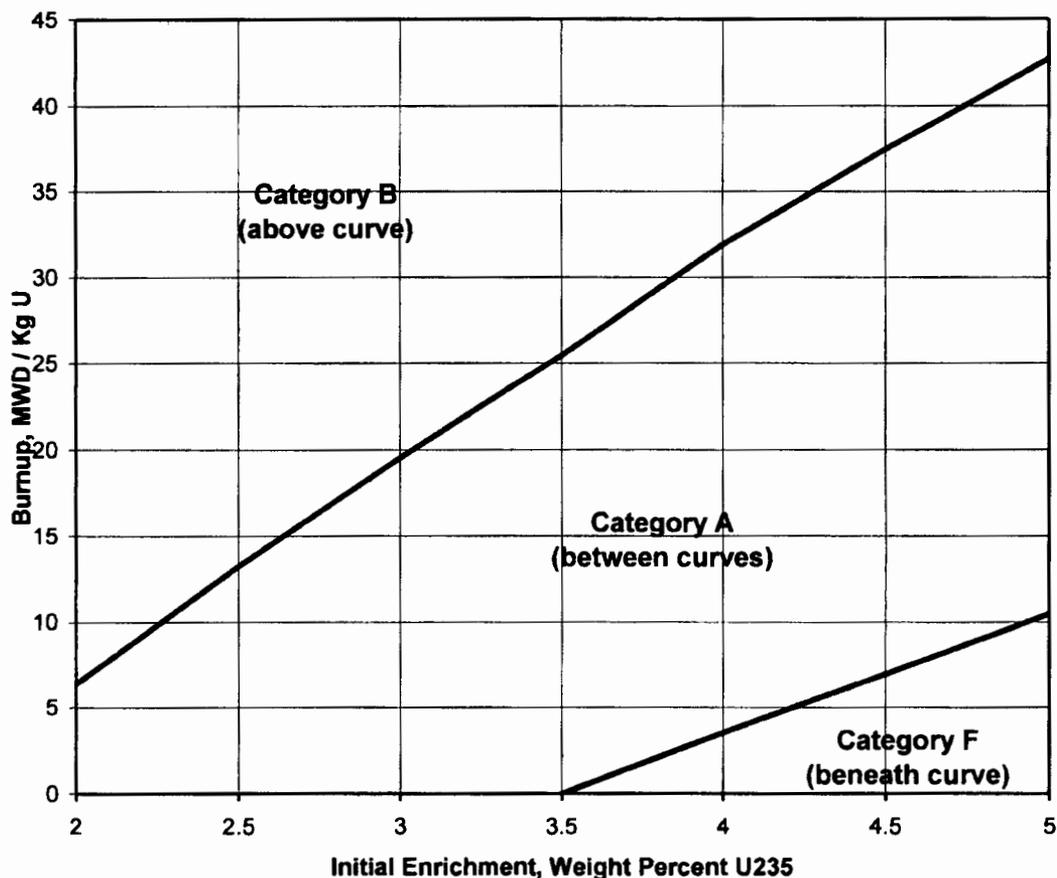
APPLICABILITY: Whenever any fuel assembly is stored in Storage Pool A or Storage Pool B of the spent fuel pool.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|-----------------|
| A. Requirements of the LCO not met. | A.1 Initiate action to move the noncomplying fuel assembly to an acceptable configuration. | Immediately |

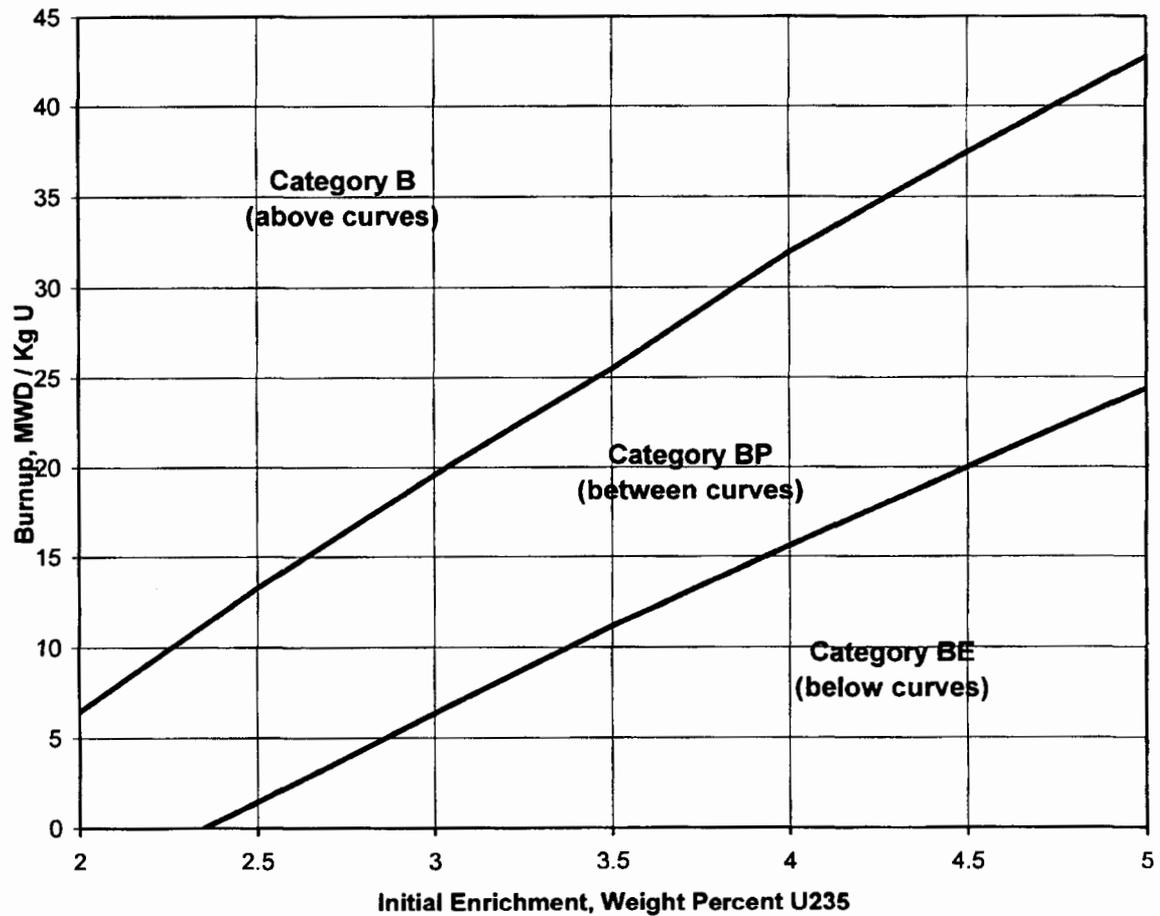
SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|---|
| SR 3.7.15.1 Verify by administrative means the initial enrichment and burnup of the fuel assembly is in accordance with Figure 3.7.15-1 or Figure 3.7.15-2. | Prior to storing the fuel assembly in Storage Pool A or Storage Pool B. |



1. Category B: Fuel from this category can be stored with no restrictions except as noted below.
2. Category A: Fuel from this category can be stored with fuel from Categories A or B.
3. Category F: Fuel from this category must be stored in a one-out-of-two checkerboard configuration with fuel from Category B or empty water cells. Category F fuel stored in a checkerboard pattern with either Category B fuel or empty water cells must be separated from Category A fuel by a transition row of Category B fuel.

Figure 3.7.15-1
Burnup versus Enrichment Curve for
Spent Fuel Storage Pool A



1. Category B: Fuel from this category can be stored with no restrictions except as noted below.
2. Category BP: Fuel from this category (between lower and upper curves) can be stored in the peripheral cells of the pool.
3. Category BE: Unacceptable for storage unless surrounded by eight empty water cells.
4. Fuel of any enrichment and burnup including fresh, unburned fuel may be stored in Pool B if surrounded by eight empty water cells. Category BE fuel assemblies must be separated by two adjacent empty cells in Pool B.

Figure 3.7.15-2
Burnup versus Enrichment Curve for
Spent Fuel Storage Pool B

4.0 DESIGN FEATURES

4.1 Site

The 4,738 acre site is characterized by a 4,400 foot minimum exclusion radius centered on the Reactor Building; isolation from nearby population centers; sound foundation for structures; an abundant supply of cooling water; an ample supply of power; and favorable conditions of hydrology, geology, seismology, and meteorology.

4.2 Not Used

(continued)

4.0 DESIGN FEATURES

4.3 Fuel Storage

4.3.1 Criticality

- 4.3.1.1 The spent fuel storage racks are designed and shall be maintained with:
- a. Fuel assemblies having a maximum U-235 enrichment of 5.0 weight percent;
 - b. $k_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.6 of the FSAR;
 - c. A nominal 9.11 inch center to center distance between fuel assemblies placed in the B pool;
 - d. A nominal 10.5 inch center to center distance between fuel assemblies placed in the A pool.
- 4.3.1.2 The new fuel storage racks are designed and shall be maintained with:
- a. Fuel assemblies having a maximum U-235 enrichment of 5.0 weight percent;
 - b. $k_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.6 of the FSAR;
 - c. $k_{eff} \leq 0.98$ if moderated by aqueous foam, which includes an allowance for uncertainties as described in Section 9.6 of the FSAR; and
 - d. A nominal 21.125 inch center to center distance between fuel assemblies placed in the storage racks.

(continued)

4.0 DESIGN FEATURES

4.3.2 Drainage

The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 138 feet 4 inches.

4.3.3 Capacity

The spent fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 1474 fuel assemblies and six failed fuel containers.

5.0 ADMINISTRATIVE CONTROLS

5.1 Responsibility

5.1.1 The General Manager Decommissioning shall be responsible for overall facility functions and shall delegate in writing the succession to this responsibility during his absence.

The General Manager Decommissioning or his designee shall approve, prior to implementation, each proposed test, experiment or modifications to systems or equipment that affect stored nuclear fuel.

5.1.2 The Shift Supervisor shall be responsible for the shift command function.

5.0 ADMINISTRATIVE CONTROLS

5.2 Organization

5.2.1 Onsite and Offsite Organizations

Onsite and offsite organizations shall be established for facility staff and corporate management, respectively. The onsite and offsite organizations shall include the positions responsible for activities affecting the safe handling and storage of nuclear fuel.

- a. Lines of authority, responsibility, and communications shall be established and defined from the highest management levels through intermediate levels to and including all operating organization positions. These relationships shall be documented and updated, as appropriate, in the form of organization charts, functional descriptions of department responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These shall be documented in the FSAR;
- b. The General Manager Decommissioning shall have overall responsibility for the safe handling and storage of nuclear fuel and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure the safe handling and storage of nuclear fuel. The General Manager Decommissioning shall be responsible to control those onsite activities necessary for the safe handling and storage of nuclear fuel; and
- c. The individuals who train the Certified Fuel Handlers, carry out health physics, or perform quality assurance functions may report to the appropriate onsite manager; however, they shall have sufficient organizational freedom to ensure their ability to perform their assigned functions.

5.2.2 Unit Staff

The unit staff organization shall include the following:

- a. Each duty shift shall be composed of at least one Shift Supervisor and one Non-certified Operator.
- b. Shift crew composition may be less than the minimum requirement of 5.2.2.a for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements.

(continued)

5.2 Organization

5.2.2 Unit Staff (continued)

- c. At least one person qualified to stand watch in the control room (Non-certified Operator or Certified Fuel Handler) shall be present in the control room when nuclear fuel is stored in the spent fuel pools.
 - d. An individual qualified in Radiation Protection procedures shall be on site during fuel handling operations and during movement of heavy loads over the fuel storage racks. The position may be vacant for not more than 2 hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position.
 - e. Oversight of fuel handling operations shall be provided by a Certified Fuel Handler.
 - f. The Shift Supervisor shall be a Certified Fuel Handler.
-

5.0 ADMINISTRATIVE CONTROLS

5.3 Unit Staff Qualifications

- 5.3.1 Each member of the unit staff shall meet or exceed the minimum qualifications of ANSI N18.1, 1971 for comparable positions, except for the Radiation Protection Manager, who shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975.
- 5.3.2 A training and retraining program for the Certified Fuel Handler positions shall be maintained under the direction of the General Manager Decommissioning.
-

Not Used
5.4

5.0 ADMINISTRATIVE CONTROLS

5.4 Not Used

Not Used
5.5

5.0 ADMINISTRATIVE CONTROLS

5.5 Not Used

5.0 ADMINISTRATIVE CONTROLS

5.6 Procedures, Programs, and Manuals

5.6.1 Procedures

5.6.1.1 Scope

Written procedures shall be established, implemented, and maintained covering the following activities:

- a. The procedures applicable to the safe storage of nuclear fuel recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978;
- b. Quality assurance for effluent and environmental monitoring;
- c. Fire Protection Program implementation; and
- d. All programs specified in Specification 5.6.2.

5.6.2 Programs and Manuals

The following programs shall be established, implemented, and maintained. Programs and Manuals may be titled as Reports.

5.6.2.1 Not Used

5.6.2.2 Not Used

5.6.2.3 Offsite Dose Calculation Manual (ODCM):

This Manual contains offsite dose calculation methodologies, the radioactive effluent controls program, and radiological environmental monitoring activities. The ODCM shall contain:

1. The methodologies and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents;
2. The methodologies and parameters used in the calculation of gaseous and liquid effluent monitoring alarm and trip setpoints;
3. The controls for maintaining the doses to members of the public from radioactive effluents as low as reasonably achievable in accordance with 10 CFR 50.36a. These include:

(continued)

5.6 Procedures, Programs and Manuals

5.6.2.3 ODCM (continued)

- a. Limitations on the functional capability of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination;
- b. Limitations on the concentrations of radioactive material released in liquid effluents to unrestricted areas, conforming to ten times the concentration values of 10 CFR 20.1001 - 20.2401, Appendix B, Table II, Column 2;
- c. Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.1302;
- d. Limitations on the annual and quarterly doses or dose commitment to a member of the public from radioactive materials in liquid effluents released from each unit to unrestricted areas, conforming to 10 CFR 50, Appendix I;
- e. Determination of cumulative and projected dose contributions from radioactive effluents for the current calendar quarter and current calendar year at least every 31 days;
- f. Limitations on the functional capability and use of the liquid and gaseous effluent treatment systems to ensure that appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a period of 31 days would exceed 2% of the guidelines for the annual dose or dose commitment, conforming to 10 CFR 50, Appendix I;
- g. Limitations on the dose rate resulting from radioactive material released in gaseous effluents from the site to areas at or beyond the site boundary shall be limited to the following:
 1. For noble gases: Less than or equal to a dose rate of 500 mrem/yr to the total body and less than or equal to a dose rate of 3000 mrem/yr to the skin, and

(continued)

5.6 Procedures, Programs and Manuals

5.6.2.3 ODCM (continued)

2. For tritium and for all radionuclides in particulate form with half-lives greater than 8 days: Less than or equal to a dose rate of 1500 mrems/yr to any organ;
- h. Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the site boundary, conforming to 10 CFR 50, Appendix I;
- i. Limitations on the annual and quarterly doses to a member of the public from tritium and all radionuclides in particulate form with half lives > 8 days in gaseous effluents released from each unit to areas beyond the site boundary, conforming to 10 CFR 50, Appendix I; and
- j. Limitations on the annual dose or dose commitment to any member of the public beyond the site boundary due to releases of radioactivity and to radiation from uranium fuel cycle sources, conforming to 40 CFR 190.

Licensee Initiated Changes to the ODCM:

1. Shall be documented and records of reviews performed shall be retained. This documentation shall contain:
 - a. Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s), and
 - b. A determination that the change will maintain the level of radioactive effluent control required by 10 CFR 20.1302, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50 and not adversely impact the accuracy or reliability of effluent dose, or setpoint calculations.
2. Shall become effective after review and acceptance by the on-site review function and the approval of the General Manager Decommissioning; and

5.6 Procedures, Programs and Manuals

5.6.2.3 ODCM (continued)

3. Shall be submitted to the Commission in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Radioactive Effluent Release Report for the period of the report in which any change was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date, (e.g., month/year) the change was implemented.

5.6.2.4 Not Used |

5.6.2.5 Not Used |

5.6.2.6 Not Used |

5.6.2.7 Not Used |

5.6.2.8 Not Used |

5.6.2.9 Not Used |

5.6.2.10 Not Used |

5.6.2.11 Not Used |

(continued)

5.6 Procedures, Programs and Manuals

5.6.2.12 Not Used

5.6.2.13 Not Used

5.6.2.14 Not Used

5.6.2.15 Not Used

5.6.2.16 Not Used

5.6.2.17 Technical Specifications (TS) Bases Control Program

Changes to the Bases of the TS shall be made under appropriate administrative controls and reviewed according to the review process specified in the Quality Assurance Plan.

Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:

- a. A change in the TS incorporated in the license; or
- b. A change to the updated FSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.

The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.

Proposed changes that meet the criteria of Specification 5.6.2.17.a or Specification 5.6.2.17.b above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71.

5.6.2.18 Not Used

5.6.2.19 Not Used

5.6.2.20 Not Used

5.6.2.21 Not Used

5.0 ADMINISTRATIVE CONTROLS

5.7 Reporting Requirements

5.7.1 Routine Reports

5.7.1.1 Reports required on an annual basis include:

- a. Not Used
- b. Annual Radiological Environmental Operating Report

The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted by May 15 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the radiological environmental monitoring for the reporting period. The material provided shall be consistent with the objectives outlined in the Offsite Dose Calculation Manual (ODCM).

The Annual Radiological Environmental Operating Report shall include the results of analyses of all radiological environmental samples and of all environmental radiation measurements taken during the period pursuant to the locations specified in the table and figures in the ODCM, as well as summarized and tabulated results of these analyses and measurements in the format of the table in the Radiological Assessment Branch Technical Position, Revision 1, November 1979. In the event that some individual results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted in a supplementary report as soon as possible.

- c. Radioactive Effluent Release Report

The Radioactive Effluent Release Report covering the operation of the unit shall be submitted prior to May 1 of each year, and in accordance with 10 CFR 50.36a. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be consistent with the objectives outlined in the ODCM and Process Control Program, and in conformance with 10 CFR 50.36a and 10 CFR 50, Appendix I, Section IV B.1.

(continued)

5.7 Reporting Requirements

5.7.1.2 Not Used

5.7.2 Not Used

5.0 ADMINISTRATIVE CONTROLS

5.8 High Radiation Area

5.8.1 Pursuant to 10 CFR 20, paragraph 20.1601(c), alternative methods are used to control access to high radiation areas. Each high radiation area, as defined in 10 CFR 20, in which the intensity of radiation (measured at 30 cm) is > 100 mrem/hr but < 1000 mrem/hr, shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP).

Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

- a. A radiation monitoring device that continuously indicates the radiation dose rate in the area.
- b. A radiation monitoring device that continuously integrates the radiation dose in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate levels in the area have been established and personnel are aware of them.
- c. An individual qualified in radiation protection procedures with a radiation dose rate monitoring device, who is responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance.

5.8.2 In addition to the requirements of Specification 5.8.1, areas with radiation levels ≥ 1000 mrem/hr at 30 cm from the radiation source or from any surface penetrated by the radiation but less than 500 rads/hr at 1 meter from the radiation source or from any surface penetrated by the radiation shall be provided with locked or continuously guarded doors to prevent unauthorized entry and the keys shall be maintained under the administrative control of the Shift Supervisor or health physics supervision. Doors shall remain locked except during periods of access by personnel.

Direct or remote (such as closed circuit TV cameras) continuous surveillance may be made by personnel qualified in radiation protection procedures to provide positive exposure control over the activities being performed within the area.

(continued)

5.8 High Radiation Area (continued)

- 5.8.3 For individual high radiation areas with radiation levels of ≥ 1000 mrem/hr at 30 cm from the radiation source or from any surface penetrated by the radiation but less than 500 rads/hr at 1 meter from the radiation source or from any surface penetrated by the radiation, accessible to personnel, that are located within large areas such as reactor containment, where no enclosure exists for purposes of locking, or that are not continuously guarded, and where no enclosure can be reasonably constructed around the individual area, that individual area shall be barricaded and conspicuously posted, and a flashing light shall be activated as a warning device.
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APPENDIX B - PART II

TO FACILITY OPERATING LICENSE NO. DPR-72
CRYSTAL RIVER UNIT 3

DUKE ENERGY FLORIDA, INC.

DOCKET NO. 50-302

ENVIRONMENTAL PROTECTION PLAN
(NON-RADIOLOGICAL)
TECHNICAL SPECIFICATIONS

Facility Operating License No. DPR-72
Amendment No. 243

1.0 Objectives of the Environmental Protection Plan

The Environmental Protection Plan (EPP) is to provide for protection of environmental values during operation and additional construction of the Crystal River Unit 3. The principal objectives of the EPP are as follows:

1. Verify that Crystal River Unit 3 is operated in an environmentally acceptable manner, as established by the Final Environmental Statement (FES) and other NRC environmental impact assessments.
2. Coordinate NRC requirements and maintain consistency with other Federal, State and local requirements for environmental protection.
3. Keep NRC informed of the environmental effects of Crystal River Unit 3 operation and additional construction, and of actions taken to control those effects.

Environmental concerns identified in the FES which relate to water quality matters are regulated by way of licensee's National Pollutant Discharge Elimination System (NPDES) Permit implemented by the State of Florida, Department of Environmental Protection (FDEP) through the Industrial Wastewater Facility Permit (hereafter referred to as the NPDES Permit).

2.0 Environmental Protection Issues

In the FES-Operating License, dated May 1973, NRC staff considered the environmental impacts associated with the operation of Crystal River Unit 3. Certain environmental issues were identified which required study or license conditions to resolve environmental concerns and to assure adequate protection of the environment. The Appendix B Environmental Technical Specifications (ETS) issued with the license included discharge restrictions and monitoring programs to resolve the issues. Prior to issuance of this EPP, the requirements remaining in the ETS were:

1. The need to control the release of heat (temperature) and chlorine within those discharge concentrations evaluated.
2. The need for aquatic monitoring programs to confirm that thermal mixing occurs as predicted, and that effects on aquatic biota and water quality due to plant operation are no greater than predicted.
3. The need for special studies to document levels of intake entrainment and impingement.

Aquatic issues were addressed by the effluent limitations, monitoring requirements and the Section 316(b) demonstration requirement contained in the effective NPDES Permit formerly issued by the Environmental Protection Agency-Region IV. Note: The FDEP now issues the Industrial Wastewater Facility Permit under the NPDES.

3.0 Consistency Requirements

3.1 Crystal River Unit 3 Design and Operation

The licensee may make changes in station design or operation or perform tests or experiments affecting the environment provided such changes, tests or experiments do not involve an unreviewed environmental question. Changes in plant design or operation or performance of tests or experiments which do not affect the environment are not subject to this requirement.

Before engaging in unauthorized construction or operational activities which may affect the environment, the licensee shall perform an environmental evaluation of such activity.* When the evaluation indicates that such activity involves an unreviewed environmental question, the licensee shall provide a written evaluation of such activities and obtain prior approval from the NRC.

A proposed change, test or experiment shall be deemed to involve an unreviewed environmental question if it concerns (1) a matter which may result in a significant increase in any adverse environmental impact previously evaluated in the FES, supplements to the FES, environmental impact appraisals, or in any decisions of the Atomic Safety and Licensing Board; or (2) a significant change in effluents (in accordance with 10 CFR 51.22) or power level; or (3) a matter not previously reviewed and evaluated in the documents specified in (1) of this Subsection, which may have a significant adverse environmental impact.

The licensee shall maintain records of changes in facility design or operation and of tests and experiments carried out pursuant to this Subsection. These records shall include a written evaluation which provides bases for the determination that the change, test, or experiment does not involve an unreviewed environmental question.

Records of modifications to plant structures, systems and components determined to potentially affect the continued protection of the environment shall be retained for the life of the plant. All other records, data and logs relating to this EPP

* Activities are excluded from this requirement if all measurable nonradiological effects are confined to the on-site areas previously disturbed during site preparation and construction.

(continued)

3.0 Consistency Requirements

3.1 Crystal River Unit 3 Design and Operation (continued)

shall be retained for five years or, where applicable, in accordance with the requirements of other agencies.

Activities governed by Section 3.3 of this EPP are not subject to the requirements of this section.

3.2 Reporting Related to the NPDES Permit

1. Violations of the NPDES Permit shall be reported to the NRC by submittal of copies of the reports required by the NPDES Permit.
2. The licensee shall provide the NRC with a copy of any 316(a) or (b) studies and/or related documentation at the same time it is submitted to the permitting agency.
3. Changes and additions to the NPDES Permit shall be reported to the NRC within 30 days following the date the change is approved. If a permit, in part or in its entirety, is appealed and stayed, the NRC shall be notified within 30 days following the date the stay is granted.
4. The NRC shall be notified of changes to the effective NPDES Permit proposed by the licensee by providing NRC with a copy of the proposed change at the same time it is submitted to the permitting agency. The licensee shall provide the NRC a copy of the application for renewal of the NPDES Permit at the same time the application is submitted to the permitting agency.

3.3 Changes Required for Compliance with Other Environmental Regulations

Changes in Crystal River Unit 3 design or operation and performance of tests or experiments which are required to achieve compliance with other Federal, State, or local environmental regulations are not subject to the requirements of Section 3.1.

4.0 Environmental Conditions

4.1 Significant Environmental Events

Any occurrence of a significant event that indicates or could result in significant environmental impact causally related to station operation shall be recorded and promptly reported to the NRC within 24 hours* followed by a written report within 30 days. No routine monitoring programs are required to implement this condition.

The written report shall (a) describe, analyze, and evaluate the event, including extent and magnitude of the impact and plant operating characteristics, (b) describe the probable cause of the event, (c) indicate the action taken to correct the reported event, (d) indicate the corrective action taken to preclude repetition of the event and to prevent similar occurrences involving similar components or systems, and (e) indicate the agencies notified and their preliminary responses.

Events reportable under this subsection which also require reports to other Federal, State or local agencies shall be reported in accordance with those reporting requirements in lieu of the requirements of this subsection. The NRC shall be provided a copy of such report at the same time it is submitted to the other agency.

The following are examples of significant environmental events: excessive bird impaction events; onsite plant or animal disease outbreaks; mortality or unusual occurrence of any species protected by the Endangered Species Act of 1973; unusual fish kills; and increase in nuisance organisms or conditions.

4.2 Endangered or Threatened Sea Turtles

Endangered or threatened sea turtles shall be protected in accordance with the Incidental Take Statement issued by the National Marine Fisheries Service (NMFS).

* If a significant environmental event occurs over weekends or holidays the report shall be supplied within 24 hours of the first working day following the weekend or holiday.

(continued)

4.0 Environmental Conditions

4.2.1 Incidental Take Statement

The NMFS has reviewed the impact of the Crystal River Energy Complex (CREC) operation on listed species of sea turtles and determined that CREC operations are not likely to result in jeopardy to the Kemp's ridley, green, loggerhead, leatherback, and hawksbill sea turtles. Numerical limits are established by NMFS on live takes, lethal takes causally related to plant operation, and lethal takes not related to plant operations.

4.2.2 NMFS Reasonable and Prudent Measures

In order to provide protection of sea turtles, the following reasonable and prudent measures are appropriate to minimize impacts to sea turtles:

- a. Monitor sea turtle activities around the CREC bar racks and rescue sea turtles stranded on the bar racks, and
- b. Keep records of sea turtle strandings.

4.2.3 NMFS Non-discretionary Terms and Conditions

The following non-discretionary terms and conditions implement the above reasonable and prudent measures:

- a. Continue implementation of the approved Sea Turtle Rescue and Handling Guidelines. Subsequent revisions shall be submitted for review to NMFS and the Florida Fish and Wildlife Conservation Commission.
 - b. Report to the NMFS any injured or killed sea turtle in the intake canal or bar racks within 30 days of the incident.
 - c. Record all sea turtle takes by species, size and date. Verbal notifications and written reports must be provided to the NMFS as required by the Biological Opinion.
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