August 26, 1977

Docket No. 50-302

Florida Power Corporation
ATTN: Mr. J. T. Rodgers
Assistant Vice President and
Nuclear Project Manager
P. O. Box 14042
St. Petersburg, Florida 33733

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Gentlemen:

The Commission has issued the enclosed Amendment No. 7 to Facility Operating License No. DPR-72 for the Crystal River Unit No. 3 Nuclear Generating Plant. The amendment consists of changes to the Technical Specifications in response to your application dated August 1, 1977.

This amendment waives a maximum discharge temperature limit during the three days in August 1977 that the required thermal plume study is conducted. The limit waived is that the maximum discharge temperature may not exceed 103°F for more than three consecutive hours. In addition, the requirement that all Crystal River Units be operated at greater than or equal to 80% capacity during this study has been changed to require a site loading no less than 70%.

Changes to your proposal were necessary to meet our requirements. These have been discussed with and agreed to by your staff.

This amendment does not involve significant new safety information of a type not considered by a previous Commission safety review of the facility. It does not involve a significant increase in the probability or consequences of an accident, does not involve a significant decrease in a safety margin, and therefore does not involve a significant hazards consideration. We have also concluded that there is reasonable assurance that the health and safety of the public will not be endangered by this action.

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OFFICE ➤						
SURNAME ➤						
DATE ➤						

Form AEC-318 (Rev. 9-53) AECM 0240

☆ U. S. GOVERNMENT PRINTING OFFICE: 1974-526-166

Copies of the Environmental Impact Appraisal and the Notice of Issuance/Negative Declaration are also enclosed.

Sincerely,

Original Signed by

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

Enclosures:
1. Amendment No. 7
2. Environmental Impact Appraisal
3. Notice/Negative Declaration

cc w/enclosures:
See next page

EEB:DOR 8/24/77 subject to note in front of package

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DATE ➔	8/24/77	8/23/77	8/25/77	8/26/77		

Florida Power Corporation

cc w/enclosures:

Mr. S. A. Brandimore
Vice President and General Counsel
P. O. Box 14042
St. Petersburg, Florida 33733

Mr. Wilbur Langely, Chairman
Board of County Commissioners
Citrus County
Iverness, Florida 36250

U. S. Environmental Protection Agency
Region IV Office
ATTN: EIS COORDINATOR
345 Courtland Street, N.E.
Atlanta, Georgia 30308

Chief, Energy Systems
Analyses Branch (AW-459)
Office of Radiation Programs
U. S. Environmental Protection Agency
Room 645, East Tower
401 M Street, S.W.
Washington, D.C. 20460

Crystal River Public Library
Crystal River, Florida 32629

cc w/enclosures and incoming
dtd.: 8/1/77
Bureau of Intergovernmental Relations
660 Apalchee Parkway
Tallahassee, Florida 32304

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

FLORIDA POWER CORPORATION
CITY OF ALACHUA
CITY OF BUSHNELL
CITY OF GAINESVILLE
CITY OF KISSIMMEE
CITY OF LEESBURG
CITY OF NEW SMYRNA BEACH AND UTILITIES COMMISSION, CITY OF NEW SMYRNA BEACH
CITY OF OCALA
ORLANDO UTILITIES COMMISSION AND CITY OF ORLANDO
SEBRING UTILITIES COMMISSION
SEMINOLE ELECTRIC COOPERATIVE, INC.
CITY OF TALLAHASSEE

DOCKET NO. 50-302

CRYSTAL RIVER UNIT 3 NUCLEAR GENERATING PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 7
License No. DPR-72

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

   A. The application for amendment by Florida Power Corporation, et al (the licensees) dated August 1 , 1977, 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, 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-72 is hereby amended to read as follows:

   2.C.(2) Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 7, are hereby incorporated in the license. Florida Power Corporation 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: August 26, 1977

ATTACHMENT TO LICENSE AMENDMENT NO. 7

FACILITY OPERATING LICENSE NO. DPR-72

DOCKET NO. 50-302

Replace the following page of the Appendix "B", Technical Specifications with the enclosed page. The revised page is identified by Amendment number and contains vertical lines indicating the areas of change. The corresponding overleaf page is also provided to maintain document completeness.

Page
4-1

4.0 SPECIAL SURVEILLANCE, RESEARCH, OR STUDY ACTIVITIES

4.1 THERMAL PLUME DETERMINATION DURING UNIT 3 OPERATION

Objective

To establish the location and size of the thermal plume during normal operation, under conditions of high and low tide and maximum and minimum intake temperature; to provide data to verify the mathematical and physical models so that good predictions of isotherm location under all conditions will be possible and to establish the operational monitoring system: to verify previous calculations which predict the size and location of the effluent thermal plume.

General Approach and Schedule

Intensive field surveys shall be conducted twice during the first year of operation. Specifically, the surveys will be done during the months of July or August when the maximum intake temperature is observed and during the months of December or January for contrast when the minimum intake temperature is observed. The thermal field measurements shall be made in sufficient locations to cover the full extent of the thermal plume.

Salinity measurement may be required in order to effectively decouple the plume from ambient isotherms. During the tests the behavior of the plume during both phases of the tidal cycle shall be tested. The measurements should allow for construction of the isothermal maps with 1.0°F above ambient contour intervals. These tests shall be carried out with all three units operating and site capacity at no less than 70%. During the surveys the following conditions shall be recorded as needed to assess the extent of the thermal plume and its correspondence to a computer run with parallel parameters: (a) plant conditions (condenser flows, intake temperature, discharge temperature, loading, etc.) of all three units, (b) hydrological conditions (tidal stage, salinity traverses, etc.), (c) meteorological conditions (wet and dry bulb temperature, humidity, windspeed, wind direction, solar radiation, etc.).

The requirement of Specification 2.1.2 that the temperature of the condenser cooling water at the POD not exceed 103°F for a period of more than 3 consecutive hours shall not be applicable during the three-day study period planned for August 1977. The requirement of Specification 2.1.2 that the discharge water temperature not exceed 106°F shall apply.

The field survey measurements shall be compared to the results of the predicted computer runs. Any modifications needed in either the physical model or the mathematical model will then be incorporated in the models. The models will then be available to use in the evaluation of any abnormal environmental occurrence or other modifications in plant system or equipment performance.

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

ENVIRONMENTAL IMPACT APPRAISAL BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 7 TO LICENSE NO. DPR-72

FLORIDA POWER CORPORATION, ET AL

CRYSTAL RIVER UNIT 3 NUCLEAR GENERATING PLANT

DOCKET NO. 50-302

Description of Proposed Action

By letter dated August 1, 1977, Florida Power Company, the licensee, proposed an amendment to the Environmental Technical Specifications (ETS) for Crystal River Unit No. 3. The purpose of the amendment is to allow exceeding a limit on the maximum discharge temperature while the required thermal plume determination study is being conducted. The licensee also proposed a change to the thermal plume study to require that station power capacity be at greater than 80% only if possible.

Environmental Impacts of Proposed Action

Specification 4.1 requires thermal plume monitoring to be conducted twice during the first year of operation of Unit 3. According to the specification, monitoring is to be at times of maximum intake temperature (July or August) and during times when the minimum intake temperature is observed. In addition to the requirement that the intake temperature be nearly maximum, all three units were to operate at a minimum of 80% of full capacity. The licensee plans to conduct a thermal plume study in August which would satisfy this requirement. However, the licensee indicates that in conducting the study at maximum intake temperatures, with all three units operating, the maximum discharge temperature limit (Specification 2.1.2) of 103°F may be exceeded.

Specification 2.1.2 now allows the maximum discharge temperature to exceed 103°F, but not 106°F, for 3 consecutive hours. According to the licensee, about 3 days would be needed in August to conduct the thermal plume study, during which the discharge could exceed

103°F, but not 106°F, for about five hours per day. We have reviewed the potential impact associated with the operation of the station for 3 days with the discharge temperature approaching 106°F for about 5 hours per day.

Our review indicates that the short time the discharge temperature may exceed 103°F would not substantially increase the period of 53% of the year that the Final Environmental Statement (FES) predicted that a 95°F discharge temperature would be exceeded. (The Crystal River FES concluded that some ecological impact would occur when any combination of ambient and incremental temperatures exceeded 95°F). The higher discharge temperature could increase the extent (acreage) of the thermal plume which exceeds 95°F. The objective of the thermal plume study, however, is to determine the location and size of the thermal plume at maximum temperatures in order to evaluate the impact of periodic operation with this larger plume.

We conclude that the environmental impact of operation at higher discharge temperatures will be insignificant because the time of the study is short, the potentially larger plume (about 95°F) will fluctuate with the tidal currents, and the fringe of the plume would not remain in constant contact with benthic organisms. The Crystal River station discharges into the nearshore of the Gulf of Mexico. The nearshore species in Florida are generally adapted to tolerate short-term thermal stress as the nearshore waters may naturally reach high temperatures because of their shallow depth and the high thermal load from the sun. This tolerance should allow the local communities to survive the possible one time stress the thermal survey may cause and will help to minimize any damage.

Based on the licensee's intentions to conduct the thermal plume study during a three-day period and our appraisal for such a period, we have modified the requested change to ETS 4.1 indicating that the discharge temperature limit of 103°F in ETS 2.1.2 can be exceeded only during the three-day test period in August. The 106°F limit of ETS 2.1.2 will not be changed.

The second change requested by the licensee concerns the minimum power loading of the three units at the Crystal River site during the study. The present survey as defined requires that each unit be loaded to at least 80% of capacity. The licensee indicates that Units 1 and 2 (the fossil-fueled units) are run at 40 - 50% of capacity at night because of reduced demand. With Unit 3 at 100% load, the maximum load at night is about 70% for the site. During the

survey, the licensee will increase load to meet increased system requirements but may not be able to keep all units at $\geq$ 80% load and may not be able to keep the total site load at $\geq$ 80%. The licensee therefore proposes to add the words "if possible" to Specification 4.1.

We have reviewed the impact of this change and find that for the purposes of the thermal plume study the ideal situation would be to have all units at full power. However, the impact of the thermal plume would be from the routine loading of the plant and not from an artificially imposed maximum loading. The impact of the change is considered acceptable in that the reduced capacity would have less adverse effects on the aquatic communities and the survey would be conducted with the station operating at typical power output. We have determined, however, that a lower limit should be placed on the site capacity during this study based on the expected night load on the site. Therefore, we have discussed with FPC and they have agreed to a change in the proposal regarding site capacity to require that site capacity be no less than 70%.

Conclusion and Basis for Negative Declaration

We have reviewed the proposed technical specification changes associated with this amendment. We have found the environmental impact of operation under these revised specifications will not be substantially greater than that evaluated in the Crystal River Final Environmental Statement for Unit 3, that the changes will not significantly affect the quality of the human environment, and that a negative declaration to this effect is appropriate.

Dated: August 26, 1977

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-302

FLORIDA POWER CORPORATION, ET AL

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE AND NEGATIVE DECLARATION

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 7 to Facility Operating License No. DPR-72, issued to the Florida Power Corporation, City of Alachua, City of Bushnell, City of Gainesville, City of Kissimmee, City of Leesburg, City of New Smyrna Beach and Utilities Commission, City of New Smyrna Beach, City of Ocala, Orlando Utilities Commission and City of Orlando, Sebring Utilities Commission, Seminole Electric Cooperative, Inc., and the City of Tallahassee (the licensees) which revised Technical Specifications for operation of the Crystal River Unit No. 3 Nuclear Generating Plant located in Citrus County, Florida. The amendment is effective as of the date of issuance.

This amendment waives a maximum discharge temperature limit during the three days in August 1977 that the required thermal plume study is conducted. The limit waived is that the maximum discharge temperature may not exceed 103°F for more than three consecutive hours. In addition, the requirement that all Crystal River Units be operated at greater than or equal to 80% capacity during this study has been changed to require a site loading no less than 70%.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment was not required since the amendment does not involve a significant hazards consideration.

The Commission has prepared an environmental impact appraisal for the revised Technical Specifications and has concluded that an environmental impact statement for this particular action is not warranted because there will be no significant environmental impact attributable to the action other than that which has already been predicted and described in the Commission's Final Environmental Statement for the facility.

For further details with respect to this action, see (1) the application for amendment dated August 1, 1977, (2) Amendment No. 7 to License No. DPR-72, and (3) the Commission's related Environmental Impact Appraisal. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C. and at the Crystal River Public Library, Crystal River, Florida. A copy of items (2) and

(3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 26th day of August 1977.

FOR THE NUCLEAR REGULATORY COMMISSION

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