December 14, 1987

Docket No. 50-302

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Mr. W. S. Wilgus
Vice President, Nuclear Operations
Florida Power Corporation
ATTN: Manager, Nuclear Licensing
P. O. Box 219
Crystal River, Florida 32629

Dear Mr. Wilgus:

SUBJECT: CRYSTAL RIVER UNIT 3 - ISSUANCE OF AMENDMENT (TAC NO. 65258)

The Commission has issued the enclosed Amendment No. 101 to Facility Operating License No. DPR-72 for the Crystal River Unit No. 3 Nuclear Generating Plant (CR-3). This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated April 15, 1987.

This amendment (1) changes the current Technical Specification (TS) Section 4.5.1.d by deleting the requirement to verify each core flooding tank isolation valve closed alarm by an actuation test and replacing it with a requirement to perform a channel calibration of each alarm, and (2) adds to TS Bases 3/4.5.1 a description of the actuation of the core flooding tank isolation valve closed alarm.

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

Sincerely,

Original signed by

Harley Silver, Project Manager
Project Directorate II-2
Division of Reactor Projects-I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 101 to DPR-72
2. Safety Evaluation

cc w/enclosures:
See next page

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LA:PD22	PE:PD22	PM:PD22	D:PD22	R-II	OGC
DMiller	JSchiffgens	HSilver:bd	HBerkow	STingen	
12/8/87	12/9/87	12/10/87	12/10/87	12/ /87	12/ /87

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

December 14, 1987

Docket No. 50-302

Mr. W. S. Wilgus
Vice President, Nuclear Operations
Florida Power Corporation
ATTN: Manager, Nuclear Licensing
P. O. Box 219
Crystal River, Florida 32629

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Harley Silver, Project Manager
Project Directorate II-2
Division of Reactor Projects-I/II
Office of Nuclear Reactor Regulation

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1. Amendment No. 101 to DPR-72
2. Safety Evaluation

cc w/enclosures:
See next page

Mr. W. S. Wilgus
Florida Power Corporation

Crystal River Unit No. 3 Nuclear
Generating Plant

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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. 101
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 April 15, 1987, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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2. Accordingly, 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:

   Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 101, 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 its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Herbert N. Berkow

Herbert N. Berkow, Director
Project Directorate II-2
Division of Reactor Projects-I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: December 14, 1987

ATTACHMENT TO LICENSE AMENDMENT NO. 101

FACILITY OPERATING LICENSE NO. DPR-72

DOCKET NO. 50-302

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

Remove	Insert
3/4 5-2	3/4 5-2
B3/4 5-1	B3/4 5-1

SURVEILLANCE REQUIREMENTS (Continued)

b. At least once per 31 days and within 6 hours of each solution volume increase of $\geq$ 80 gallons by verifying the boron concentration of the tank solution.

c. At least once per 31 days by verifying that power to the isolation valve operator is removed by locking the breaker in the open position.

d. At least once per 18 months by performing a CHANNEL CALIBRATION of each core flooding tank isolation valve closed alarm.

3/4.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

CORE FLOODING TANKS

LIMITING CONDITION FOR OPERATION

3.5.1 Each reactor coolant system core flooding tank shall be OPERABLE with:

a. The isolation valve open,

b. A contained borated water volume between 7555 and 8005 gallons of borated water,

c. Between 2270 and 3500 ppm of boron, and

d. A nitrogen cover-pressure of between 575 and 625 psig.

APPLICABILITY: MODES 1, 2 and 3*.

ACTION:

a. With one core flooding tank inoperable, except as a result of a closed isolation valve, restore the inoperable tank to OPERABLE status within one hour or be in HOT SHUTDOWN within the next 12 hours.

b. With any core flooding tank inoperable due to the isolation valve being closed, either immediately open the isolation valve or be in HOT STANDBY within one hour and be in HOT SHUTDOWN within the next 12 hours.

SURVEILLANCE REQUIREMENTS

4.5.1 Each core flooding tank shall be demonstrated OPERABLE:

a. At least once per 12 hours by:

1. Verifying the contained borated water volume and nitrogen cover-pressure in the tanks, and

2. Verifying that each tank isolation valve is open.

*With Reactor Coolant pressure >750 psig.

3/4.5.1 CORE FLOODING TANKS

The OPERABILITY of each core flooding tank ensures that a sufficient volume of borated water will be immediately forced into the reactor vessel in the event the RCS pressure falls below the pressure of the tanks. This initial surge of water into the vessel provides the initial cooling mechanism during large RCS pipe ruptures.

The limits on volume, boron concentration and pressure ensure that the assumptions used for core flooding tank injection in the safety analysis are met.

The limits for operation with a core flooding tank inoperable for any reason except an isolation valve closed minimizes the time exposure of the plant to a LOCA event occurring concurrent with the failure of an additional tank which may result in unacceptable peak cladding temperatures. If a closed isolation valve cannot be immediately opened, the full capability of one tank is not available and prompt action is required to place the reactor in a mode where this capability is not required.

The Core Flooding Tank Isolation Valve Closed Alarm provides a warning to operators whenever any Core Flooding Tank Isolation Valve is not fully open and the Reactor Coolant System pressure exceeds 750 psig.

3/4.5.2 and 3/4.5.3 ECCS SUBSYSTEMS

The OPERABILITY of two independent ECCS subsystems with RCS average temperature > 280°F ensures that sufficient emergency core cooling capability will be available in the event of a LOCA assuming the loss of one subsystem through any single failure consideration. Either subsystem operating in conjunction with the core flooding tanks is capable of supplying sufficient core cooling to maintain the peak cladding temperatures within acceptable limits for all postulated break sizes ranging from the double ended break of the largest RCS cold leg pipe downward. In addition, each ECCS subsystem provides long term core cooling capability in the recirculation mode during the accident recovery period.

With the RCS temperature below 280°F, one OPERABLE ECCS subsystem is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the limited core cooling requirements.

The Surveillance Requirements provided to ensure OPERABILITY of each component ensures, that, at a minimum, the assumptions used in the safety analyses are met and that subsystem OPERABILITY is maintained. The decay heat removal system leak rate surveillance requirements assure that the leakage rates assumed for the system during the recirculation phase of the low pressure injection will not be exceeded.

The purpose of these surveillance requirements is to provide assurance that proper ECCS flows will be maintained in the event of a LOCA. Maintenance of proper flow resistance and pressure drop in the piping system to each injection point is necessary to: (1) prevent total pump flow from exceeding runout conditions when the system is in its minimum resistance configuration, (2) provide the proper flow split between injection points in accordance with the assumptions used in the ECCS-LOCA analyses, and (3) provide an acceptable level of total ECCS flow to all injection points equal to or above that assumed in the ECCS-LOCA analyses.

3/4.5.4 BORATED WATER STORAGE TANK

The OPERABILITY of the borated water storage tank (BWST) as part of the ECCS ensures that a sufficient supply of borated water is available for injection by the ECCS in the event of a LOCA. The limits on BWST minimum volume and boron concentration ensure that 1) sufficient water is available within containment to permit recirculation cooling flow to the core, and 2) the reactor will remain subcritical in the cold condition following mixing of the BWST and the RCS water volumes with all control rods inserted except for the most reactive control assembly. These assumptions are consistent with the LOCA analyses.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 101 TO FACILITY OPERATING LICENSE NO. DPR-72

FLORIDA POWER CORPORATION, ET AL.

CRYSTAL RIVER UNIT NO. 3 NUCLEAR GENERATING PLANT

DOCKET NO. 50-302

INTRODUCTION

By letter dated April 15, 1987, Florida Power Corporation (FPC or the licensee) requested an amendment to the Technical Specifications (TSs) appended to Facility Operating License No. DPR-72 for the Crystal River Unit No. 3 Nuclear Generating Plant (CR-3). The proposed amendment would (1) change the current Technical Specification (TS) Section 4.5.1.d by deleting the requirement to verify each core flooding tank isolation valve closed alarm by an actuation test and replacing it with a requirement to perform a channel calibration of each alarm, and (2) add to TS bases 3/4.5.1 a description of the actuation of the core flooding tank isolation valve closed alarm.

EVALUATION

To demonstrate that the core flooding tanks are operable, TS surveillance requirement 4.5.1.d presently requires verification, at least once per 18 months, that each core flooding tank isolation valve closed alarm actuates whenever each core flooding tank isolation valve is not fully open and the Reactor Coolant System (RCS) pressure exceeds 750 psig.

If an alarm should fail to actuate, the action statement requires that the inoperable tank be restored to operable status within 1 hour or that the reactor be in HOT SHUTDOWN (Mode 4) within the next 12 hours. In the event the alarm should fail to actuate and shutdown continues per the action statement, or the 18 month surveillance interval elapses during a shutdown, the surveillance is difficult to satisfy, since TS Section 4.0.4 prohibits raising the RCS pressure to the necessary test pressure in HOT STANDBY (Mode 3). Although a test in Mode 4 at 750 psig is possible, such a test is not recommended because it takes the reactor close to the RCS pressure/temperature limits. Normally, the licensee performs this surveillance test during cooldown.

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A channel calibration is an adjustment, as necessary, of the channel output such that it responds with necessary range and accuracy to known values of the parameter which the channel monitors, and may be performed by any series of sequential steps such that the entire channel is calibrated. The channel calibration proposed for this surveillance requirement is an equivalent test of the core flood tank isolation alarm; the calibration will be done by applying pressure to the pressure sensing diaphram over the range from 0 to 2200 psig while moving the isolation valves with the RCS pressure safely below pressure/temperature limits. The licensee will continue to perform the actuation test by moving the isolation valves with the RCS pressure above 750 psig, during cooldown, but not as part of the surveillance requirement. Because the channel calibration will be done in a cold shutdown mode, the action statement and the limitations of TS Section 4.0.4 do not apply. Since the channel calibration does not increase the likelihood of a low temperature overpressurization event, safety will be enhanced. Based on the above, we find the proposed change acceptable.

EXIGENT CIRCUMSTANCES

These TS changes are being issued without a normal 30-day notice period to preclude delay in startup of the plant from a refueling outage. The licensee submitted the amendment request in April 1987, but due to administrative problems solely attributed to the staff, the proposed no significant hazards determination was not published in a timely manner. Therefore, the staff concluded that the licensee did take timely action in this issue. In accordance with the Commission's regulations contained in 10 CFR 50.91(a)(6) regarding exigent circumstances, the Commission published a notice in the Federal Register on November 25, 1987 concerning this action, with a request for public comments and allowing an opportunity for a hearing by December 10, 1987.

STATE/PUBLIC CONSULTATION

No objections to the issuance of the amendment were made by the representative of the State of Florida. In addition, there were no public comments or requests for a hearing in response to the notice published in the Federal Register.

FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The standards used to arrive at a proposed determination that a request for an amendment involves no significant hazards consideration are included in the Commission's regulations, 10 CFR 50.92, which state that the operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

The following evaluation in relation to the three standards demonstrates that the proposed amendment does not involve a significant hazards consideration. This amendment will not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated because an equivalent test of the core flood tank isolation alarm will assure alarm operability as discussed above. The equivalent test will be performed in an acceptable manner consistent with tests performed for other engineered safeguards actuation and reactor protection instrument channels.

2. Create the possibility of a new or different kind of accident from any accident previously evaluated because the change does not modify the plant or require a significantly different plant equipment configuration.

3. Involve a significant reduction in the margin of safety because the change will not revise the channel setpoint. The margin of safety relative to RCS pressure/temperature limits will be increased as discussed above.

Based on the foregoing, the Commission has concluded that the standards of 10 CFR 50.92 are satisfied. Therefore, the Commission has made a final determination that the proposed amendment does not involve a significant hazards consideration.

ENVIRONMENTAL CONSIDERATION

This amendment involves a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes to a surveillance requirement. We have determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: December 14, 1987

Principal Contributors:

John Schiffgens
S. G. Tingen