

December 16, 1991

Docket No. 50-302

DISTRIBUTION  
See attached sheet

Mr. Percy M. Beard, Jr.  
Senior Vice President,  
Nuclear Operations  
Florida Power Corporation  
ATTN: Manager, Nuclear Operations  
Licensing  
P. O. Box 219-NA-2I  
Crystal River, Florida 32629

Dear Mr. Beard:

SUBJECT: CRYSTAL RIVER UNIT 3 - ISSUANCE OF AMENDMENT RE: QUADRANT POWER TILT  
(TAC NO. M82247)

The Commission has issued the enclosed Amendment No. 138 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 (TS) in response to your application dated December 5, 1991.

This amendment adds a statement in TS 3.2.4 that the provisions of TS 3.0.4 are not applicable.

In response to Florida Power Corporation's (FPC) oral request on December 4, 1991, the NRC verbally granted a Temporary Waiver of Compliance with respect to the above-requested change. FPC followed their oral request by letter dated December 5, 1991. By letter dated December 6, 1991, the NRC documented the verbal authorization and granted the change until such time as the NRC acts on the proposed amendment. By letter dated December 5, 1991, FPC requested that the amendment be reviewed on an emergency basis.

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. 138 to DPR-72
- 2. Safety Evaluation

cc w/enclosures:  
See next page

\*See Previous Concurrence

LA:PD22 \*  
D. Miller  
12/11/91

PM:PD22  
H. Silver  
12/16/91

D:PD22  
H. Berkow  
12/16/91

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G. Lainas  
12/16/91

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OGC\*

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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. 138  
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 December 5, 1991, 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.138 , 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

  
FOR Gus C. Lainas, Assistant Director  
for Region II Reactors  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: December 16, 1991

ATTACHMENT TO LICENSE AMENDMENT NO. 138

FACILITY OPERATING LICENSE NO. DPR-72

DOCKET NO. 50-302

Replace the following page of the Appendix "A" Technical Specifications with the attached page. The revised page is identified by amendment number and contains vertical lines indicating the area of change. The corresponding overleaf page is also provided to maintain document completeness.

Remove  
3/4 2-10

Insert  
3/4 2-10

## POWER DISTRIBUTION LIMITS

### LIMITING CONDITION FOR OPERATION (Continued)

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- b. With the QUADRANT POWER TILT determined to exceed the Transient Limit but less than the Maximum Limit specified in the CORE OPERATING LIMITS REPORT, due to misalignment of either a safety, regulating or axial power shaping rod:
1. Reduce THERMAL POWER at least 2% for each 1% of indicated QUADRANT POWER TILT in excess of the Steady State Limit within 30 minutes.
  2. Verify that the QUADRANT POWER TILT is within its Transient Limit within 2 hours after exceeding the Transient Limit or reduce THERMAL POWER to less than 60% of THERMAL POWER allowable for the reactor coolant pump combination within the next 2 hours and reduce the Nuclear Overpower Trip Setpoint to  $< 65.5\%$  of THERMAL POWER allowable for the reactor coolant pump combination within the next 4 hours.
  3. Identify and correct the cause of the out of limit condition prior to increasing THERMAL POWER; subsequent POWER OPERATION above 60% of THERMAL POWER allowable for the reactor coolant pump combination may proceed provided that the QUADRANT POWER TILT is verified within its Steady State Limit at least once per hour for 12 hours or until verified acceptable at 95% or greater RATED THERMAL POWER.
- c. With the QUADRANT POWER TILT determined to exceed the Transient Limit but less than the Maximum Limit specified in the CORE OPERATING LIMITS REPORT, due to causes other than the misalignment of either a safety, regulating or axial power shaping rod:
1. Reduce THERMAL POWER to less than 60% of THERMAL POWER allowable for the reactor coolant pump combination within 2 hours and reduce the Nuclear Overpower Trip Setpoint to  $< 65.5\%$  of THERMAL POWER allowable for the reactor coolant pump combination within the next 4 hours.
  2. Identify and correct the cause of the out of limit condition prior to increasing THERMAL POWER; subsequent POWER OPERATION above 60% of THERMAL POWER allowable for the reactor coolant pump combination may proceed provided that the QUADRANT POWER TILT is verified within its Steady State Limit at least once per hour for 12 hours or until verified at 95% or greater RATED THERMAL POWER.

## POWER DISTRIBUTION LIMITS

### LIMITING CONDITION FOR OPERATION (Continued)

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#### ACTION: (Continued)

- d. With the QUADRANT POWER TILT determined to exceed the Maximum Limit specified in the CORE OPERATING LIMITS REPORT, reduce THERMAL POWER TO  $\leq$  15% of RATED THERMAL POWER within 2 hours.
- e. The provisions of Specification 3.0.4 are not applicable. |

### SURVEILLANCE REQUIREMENTS

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4.2.4 The QUADRANT POWER TILT shall be determined to be  $\leq$  the steady state limits specified in the CORE OPERATING LIMITS REPORT at least once every 7 days during operation above 15% of RATED THERMAL POWER except when the QUADRANT POWER TILT monitor is inoperable, then the QUADRANT POWER TILT shall be calculated at least once per 12 hours.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
SUPPORTING AMENDMENT NO. 138 TO FACILITY OPERATING LICENSE NO. DPR-72  
FLORIDA POWER CORPORATION, ET AL.  
CRYSTAL RIVER UNIT NO. 3 NUCLEAR GENERATING PLANT  
DOCKET NO. 50-302

1.0 INTRODUCTION

By letter dated December 5, 1991, Florida Power Corporation (FPC or the licensee) requested an emergency Technical Specification (TS) change to TS 3.2.4 to note that the provisions of TS 3.0.4 are not applicable.

During start-up from the mid-cycle 8 outage with the reactor in Mode 1 "Power Operations" and reactor power at approximately 10% rated thermal power (RTP), operations personnel detected a quadrant power tilt (QPT) in excess of the QPT limits contained in the CR-3 Core Operating Limits Report (COLR). The applicability on the QPT TS is "Mode 1 with reactor power greater than 15%." The specification does not contain an exception to TS 3.0.4, which prevents entry into this condition. Thus, the plant was restricted from ascending to power above 15% RTP with this tilt condition present. FPC has taken appropriate compensatory actions to verify that there is no uncoupled or otherwise misoperating control rod. A temporary waiver of compliance was requested for 2 days and granted on November 26, 1991 for TS 3.0.4 as it applies to the Limiting Condition of Operation (LCO) of Section 3.2.4. CR-3 escalated power and operated for approximately 5 days at power levels up to 100%. The tilt was reduced at the higher power levels to within the steady-state limit requirements of Specification 3.2.4. The unit was shut down on December 3, 1991 while investigating high temperatures in the upper reactor cavity area. Based on the limited amount of full-power operations and indications obtained during the shutdown, the licensee believed the QPT during start-up from this outage would again exceed the limits (4.25%) currently contained in the COLR. Therefore, an emergency TS change to provide for the exclusion of Specification 3.0.4 as it applies to LCO 3.2.4 was requested.

In addition, FPC requested another temporary waiver of compliance, which was granted verbally by the NRC on December 4, 1991 and confirmed by letter from the NRC to FPC on December 6, 1991.

2.0 EVALUATION

With QPT less than the maximum limit contained in the COLR, TS 3.2.4.a and c allow unlimited continued plant operation in Mode 1 with power level restricted to less than 60% RTP, and the nuclear overpower trip setpoint reduced to less than or equal to 65.5% of the allowable thermal power for the reactor coolant pump combination in operation. The applicability of this TS



is Mode 1 with reactor power greater than 15%. However, TS 3.2.4 does not contain an exception to TS 3.0.4, and thus entry into this condition is prevented. Presently, with respect to QPT, an acceptable level of safety is provided by unlimited operation below 15% RPT, as well as above 15% RPT in accordance with TS 3.2.4. Passing through 15% RPT (entering into the conditions of TS 3.2.4) does not create any conditions which provide a reduced level of safety and therefore should be permitted.

Generic Letter 87-09 addresses the unnecessary restrictions that TS 3.0.4 places on mode and condition changes and the inconsistent exceptions to TS 3.0.4. The Generic Letter states:

The practical solution is to change [TS 3.0.4] to define the conditions under which its requirements apply. With respect to unnecessary mode changes, Specification 3.0.4 unduly restricts facility operation when conformance with Action requirements provides an acceptable level of safety for continued operation. For an LCO that has Action Requirements permitting continued operation for an unlimited period of time, entry into an operation mode or other specified condition of operation should be permitted in accordance with the Action Requirements. The solution also resolves the problem of inconsistent application of Specification 3.0.4: a) which delays startup under conditions in which conformance to the Action Requirements establishes an acceptable level of safety for unlimited continued operation of the facility. . . .

The licensee states, and the NRC staff agrees, that QPT less than the maximum limit contained in the COLR poses no safety concerns at this power level. FPC has verified that there are no uncoupled or otherwise misoperating control rods and has investigated and rejected other possible causes of QPT. FPC has concluded that the most likely cause of the QPT is a combination of the normal operational tilt plus a small contribution from previous operation with a dropped rod, perhaps magnified by small incore biases. The licensee has also attempted to eliminate false tilt caused by such biases.

While Generic Letter 87-09 recommends that TS 3.0.4 be revised to apply to all TS which satisfy the criteria of the suggested change, the licensee proposes at this time to modify only TS 3.2.4. This change is consistent with the Generic Letter because the Action Requirements for TS 3.2.4 establish an acceptable level of safety for unlimited continued operation of the facility and therefore, entry into the conditions of TS 3.2.4 should not be prevented.

### 3.0 FINDINGS

Based on its evaluation, the NRC staff concludes that:

1. Tilts of this magnitude pose no safety concerns at this power level, and entry into and continued operation of the plant in the conditions of TS 3.2.4 provide an acceptable level of safety, and
2. The proposed change is consistent with the intent of Generic Letter 87-09, as it applies to TS 3.2.4.

Therefore, the NRC staff finds the requested TS change acceptable.

#### 4.0 EMERGENCY CIRCUMSTANCES

10 CFR 50.91(a)(5) of the Commission's regulations provides the necessary requirements for issuing an amendment when the Commission finds that an emergency situation exists in that failure to act in a timely way would result in preventing an increase in power output up to the plant's licensed power level. The Commission expects its licensees to: apply for license amendments in a timely fashion; not abuse the emergency provisions by failing to make a timely application for the amendment and thus itself creating the emergency; and provide an explanation as to why the emergency situation occurred and why it could not have been avoided.

The licensee stated in its application:

The existing Technical Specification requirements which make Specification 3.0.4 applicable to Specification 3.2.4 could prevent the startup of Crystal River Unit 3 from its present forced outage. As discussed above, both the NRC, in Generic Letter 87-09, and FPC, in Technical Specification Change Request 171, recognized and addressed the unduly restrictive nature of Specification 3.0.4 in a timely manner several years ago. The generic change is being reviewed as part of the overall Technical Specification Improvement Program and will not be issued until late 1992 or 1993.

The particular situation of Specification 3.0.4 as it relates to Specification 3.2.4 had not been recognized as requiring more prompt action until the recent start-up. A combination of factors including operation with a dropped rod for several days prior to the outage, multiplexer modifications in a previous outage, and incore detector difficulties due to partial change-out have [provided] a unique set of events not considered when scheduling FPC and NRC actions associated with Generic Letter 87-09. Thus, the conditions of 10CFR50.91(a)(5) apply.

Based on the above, the Commission has determined that the licensee has not abused the emergency provisions of 10 CFR 50.91(a)(5), and that failure of the Commission to act on the licensee's request would result in prevention of an increase in power level. Therefore, the request should be processed under the emergency provisions of 10 CFR 50.91(a)(5).

#### 5.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Commission's regulations in 10 CFR 50.92 state that the Commission may make a final determination that a license amendment involves no significant hazards considerations if operation of the facility in accordance with the amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

The Commission has determined that the amendment involves no significant hazards consideration per 10 CFR 50.92, based on the licensee's analysis provided in their December 5, 1991 letter and presented below:

1. The proposed change will not significantly increase the probability or consequences of an accident previously evaluated because the [change merely eliminates administrative restrictions on entering applicable conditions.] [T]he limits and conditions specified in the Technical Specifications will continue to be met.
2. The proposed change will not create the possibility of a new or different kind of accident from any accident previously evaluated because the change will not reduce the controls and limits imposed by the Action Requirements of the Specification. The exclusion of Specification 3.0.4 for the Quadrant Power Tilt specification is consistent with the guidance of Generic Letter 87-09 in that the Action Requirements of the Specification establish an acceptable level of safety for unlimited continued operation of the facility.
3. The proposed change will not involve a significant reduction in the margin of safety because the Action Requirements of Specification 3.2.4 will continue to be met. An acceptable level of safety for unlimited continued operation of the facility is assured by conformance with the Action Requirements of the specification.

The NRC staff has reviewed the licensee's analysis and, based on this review, concludes that the analysis demonstrates that the applicable criteria are met. Accordingly, the Commission has made a final determination that the amendment involves no significant hazards consideration.

#### 6.0 STATE CONSULTATION

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

#### 7.0 ENVIRONMENTAL CONSIDERATION

This amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has 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 made a final no significant hazards consideration finding with respect to this amendment. 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.

#### 8.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will

be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: H. Silver

Date: December 16, 1991

DATED: December 16, 1991

AMENDMENT NO. 138 TO FACILITY OPERATING LICENSE NO. DPR-72-CRYSTAL RIVER UNIT 3

Docket File

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