

October 2, 1998

Mr. John Paul Cowan, Vice President  
Nuclear Operations (NA2E)  
Florida Power Corporation  
Crystal River Energy Complex  
15760 W. Power Line Street  
Crystal River, Florida 34428-6708

SUBJECT: CRYSTAL RIVER UNIT 3 - ENVIRONMENTAL ASSESSMENT OF REQUEST  
FOR EXEMPTION FROM REQUIREMENTS OF 10 CFR 50, APPENDIX K  
(TAC NO. M99892)

Dear Mr. Cowan:

Enclosed for your information is a copy of an "Environmental Assessment and Finding of No Significant Impact." This assessment relates to your application dated June 4, 1998, which requested an exemption from certain requirements of 10 CFR Part 50, Appendix K, Section I.D.1, "Single Failure Criteria."

The assessment is being forwarded to the Office of the Federal Register for publication.

Sincerely,

Original signed by:

Leonard A. Wiens, Senior Project Manager  
Project Directorate II-3  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket No. 50-302

Enclosure: Environmental Assessment

cc w/encl: See next page

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

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A handwritten signature in black ink, appearing to read "L. A. Wiens".

Leonard A. Wiens, Senior Project Manager  
Project Directorate II-3  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket No. 50-302

Enclosure: Environmental Assessment

cc w/encl: See next page

Mr. John Paul Cowan  
Florida Power Corporation

**CRYSTAL RIVER UNIT NO. 3  
GENERATING PLANT**

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UNITED STATES NUCLEAR REGULATORY COMMISSIONFLORIDA POWER CORPORATIONDOCKET NO. 50-302CRYSTAL RIVER UNIT 3ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of an exemption from certain requirements of its regulations for Facility Operating License Nos. DPR-72 issued to Florida Power Corporation, et al. (FPC or the licensee), for operation of the Crystal River plant, Unit 3, located in Citrus County, Florida.

ENVIRONMENTAL ASSESSMENTIdentification of Proposed Action:

The proposed action would exempt the licensee from the requirements of 10 CFR Part 50, Appendix K, Section I.D.1, "Single Failure Criteria," which requires accident evaluation using the combination of Emergency Core Cooling System (ECCS) subsystems assumed to be operative "... after the most damaging single failure of ECCS equipment has taken place." The proposed action would exempt the licensee from the single failure requirement for very low probability scenarios under certain circumstances. The exemption is limited to the systems required for the prevention of boron precipitation during the long term cooling phase of a loss of coolant accident. 10 CFR 50.46(b)(5) requires that the ECCS be capable of providing long-term core cooling. Post-accident boron precipitation is a potential, but unlikely, challenge to maintaining long-term core cooling.

The proposed action is in accordance with the licensee's application for exemption dated June 4, 1998. The staff, on its own initiative, proposed to extend the exemption to a potential single failure vulnerability not requested by the licensee in its application.

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The Need for the Proposed Action:

The purpose of 10 CFR Part 50, Appendix K, Section I.D.1, is to ensure that reasonable assurance exists that long-term core cooling will be maintained following a loss of coolant accident. The exemption is needed because, with the postulation of certain single failures, approved active methods for boron precipitation control (decay heat Dump-to-Sump and Auxiliary Pressurizer Spray) may not be available until decay heat levels had decreased during one postulated scenario and manual repair actions were completed for the other postulated scenario. In the event of the low probability sequence of events which could lead to these conditions, the conservatisms present in the calculations that validate the active methods, and the timely actions FPC would take to restore an active mitigation method, assure adequate long-term core cooling is maintained. Therefore, the requirements of 10 CFR Part 50, Appendix K, Section I.D.1 are not necessary to provide reasonable assurance of long-term core cooling after a loss of coolant accident for the specific sequence of events covered by the licensee's exemption request.

Environmental Impacts of the Proposed Action:

The Commission has completed its evaluation of the proposed action and concludes that in the event of a loss of coolant accident that requires long-term cooling, prevention of boron precipitation would be assured by the conservatisms in the calculations and assumptions and ability to affect repairs if necessary to restore boron precipitation mitigation systems. These conservatisms are included in the assumptions for the value of boron solubility, calculations of decay heat generation rate, and the amount of boron precipitation necessary to prevent adequate core cooling. In addition, in the unlikely event that repairs are necessary, procedural guidance for these actions has been prepared and will be required to be maintained as a condition of the exemption.

The proposed exemption will not result in an increase in the probability or consequences

of accidents or result in a change in occupational or public dose since long-term core cooling would continue to be available if required. The amount of radioactive waste would not be changed by the proposed exemption. The proposed exemption would not affect the type or amount of radiological plant effluents nor cause any significant occupational exposures. Therefore, there are no significant radiological impacts associated with the proposed action.

The proposed exemption involves features located entirely within the restricted area as defined in 10 CFR Part 20. It does not affect non-radiological plant effluents and has no other radiological environmental impact. Therefore, the proposed exemption does not result in any significant nonradiological environmental impacts.

Accordingly, the Commission concludes that there are no significant non-radiological environmental impacts associated with the proposed action.

Alternatives to the Proposed Action:

Since the Commission has concluded that there is no significant environmental impact associated with the proposed action, any alternatives with equal or greater environmental impact need not be evaluated. As an alternative to the proposed exemption, the staff considered denial of the requested exemption. Denial of the request would result in no change in current environmental impacts. The environmental impacts of the proposed action and the alternative action are similar.

Alternative Use of Resources:

This action does not involve the use of any resources not previously considered in the "Final Environmental Statement Related to the Proposed Crystal River Unit 3," dated May 1973.

Agencies and Persons Consulted:

In accordance with its stated policy, on August 13, 1998, the staff consulted with William Passetti, Chief, Department of Health, Bureau of Radiation Control, in Florida, regarding the environmental impact of the proposed action. The State official had no comments.

FINDING OF NO SIGNIFICANT IMPACT

Based upon the environmental assessment, the Commission concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the Commission has determined not to prepare an environmental impact statement for the proposed action.

For further details with respect to the proposed action, see the licensee's letter dated June 4, 1998, which is available for public inspection at the Commission's Public Document Room, which is located at The Gelman Building, 2120 L Street, NW., Washington, D. C., and at the local public document room located at the Coastal Region Library, 8619 W. Crystal Street, Crystal River, Florida 34428

Dated at Rockville, Maryland, this 28 th day of September 1998.

FOR THE NUCLEAR REGULATORY COMMISSION



Leonard A. Wiens, Senior Project Manager  
Project Directorate II-3  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation