

September 6,

Docket No. 50-302

Mr. Percy M. Beard, Jr.
Senior Vice President,
Nuclear Operations
Florida Power Corporation
ATTN: Manager, Nuclear
Licensing (NA2I)
Crystal River Energy Complex
15760 W Power Line Street
Crystal River, Florida 34428-6708

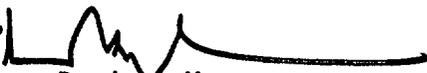
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Dear Mr. Beard:

SUBJECT: ENVIRONMENTAL ASSESSMENT OF REQUEST FOR EXEMPTION FROM CERTAIN REQUIREMENTS OF 10 CFR 50, APPENDIX R FIRE PROTECTION PROGRAM CRYSTAL RIVER UNIT 3 (TAC NO. M86794)

Enclosed is a copy of an "Environmental Assessment and Finding of No Significant Impact" for your information. This assessment relates to your letter dated June 7, 1993, as supplemented March 28, 1994, for exemption from certain requirements of 10 CFR 50, Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979," Section III. O, "Oil collection system for reactor coolant pump." The exemption would allow installation of a new reactor coolant pump motor with an oil collection system which is capable of collecting oil leakage from all potential pressurized and unpressurized leakage sites except for four potential oil leakage sites. The four potential leakage sites are: the anti-reverse device (ARD) vents, upper oil supply lines from the lift pump to the ARD, lower motor leak detection system piping, and lower guide bearing thermocouple wells.

This notice is being forwarded to the Office of the Federal Register for publication.

Sincerely, 
L. Raghavan, Project Manager
Project Directorate II-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosure:
Environmental Assessment

cc w/enclosure:
See next page

Office	LA:PDII-2 <i>ED</i>	PM:PDII-2	AD: PDII-2	OGC *	<i>OK</i> SPLB #16 SEA
Name	E.Dunnington	L.Raghavan <i>LR</i>	V.McCree <i>VMM</i>		CMcCracken
Date	09/6/94	09/1/94	08/6/94	08/25/94	08/1/94

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Mr. Percy M. Beard
Florida Power Corporation

Crystal River Unit No.3
Generating Plant

cc:

Mr. Gerald A. Williams
Corporate Counsel
Florida Power Corporation
MAC-A5A
P. O. Box 14042
St. Petersburg, Florida 33733

Mr. Joe Myers, Director
Div. of Emergency Preparedness
Department of Community Affairs
2740 Centerview Drive
Tallahassee, Florida 32399-2100

Mr. Bruce J. Hickie, Director
Nuclear Plant Operations (NA2C)
Florida Power Corporation
Crystal River Energy Complex
15760 W. Power Line Street
Crystal River, Florida 34428-6708

Chairman
Board of County Commissioners
Citrus County
110 North Apopka Avenue
Inverness, Florida 32650

Mr. Robert B. Borsum
B&W Nuclear Technologies
1700 Rockville Pike, Suite 525
Rockville, Maryland 20852

Mr. Rolf C. Widell, Director
Nuclear Operations Site Support (NA2I)
Florida Power Corporation
Crystal River Energy Complex
15760 W Power Line Street
Crystal River, Florida 34428-6708

Regional Administrator, Region II
U. S. Nuclear Regulatory Commission
101 Marietta Street N.W., Suite 2900
Atlanta, Georgia 30323

Senior Resident Inspector
Crystal River Unit 3
U.S. Nuclear Regulatory
Commission
6745 N. Tallahassee Road
Crystal River, Florida 34428

Mr. Bill Passetti
Office of Radiation Control
Department of Health and
Rehabilitative Services
1317 Winewood Blvd.
Tallahassee, Florida 32399-0700

Mr. Gary Boldt
Vice President - Nuclear
Production (SA2C)
Florida Power Corporation
Crystal River Energy Complex
15760 W Power Line Street
Crystal River, Florida 34428-6708

Attorney General
Department of Legal Affairs
The Capitol
Tallahassee, Florida 32304

UNITED STATES NUCLEAR REGULATORY COMMISSIONFLORIDA POWER CORPORATIONDOCKET NO. 50-302ENVIRONMENTAL ASSESSMENT AND FINDING OFNO SIGNIFICANT IMPACT

The U. S. Nuclear Regulatory Commission (the Commission) is considering issuance of an exemption from certain requirements of its regulations to Facility Operating License No. DPR-72, issued to Florida Power Corporation, (the licensee), for operation of the Crystal River Unit 3 Nuclear Generating Plant, located in Citrus County, Florida.

ENVIRONMENTAL ASSESSMENTIdentification of Proposed Action:

The proposed action is in accordance with the licensee's application dated June 7, 1993, as supplemented March 28, 1994, for exemption from certain requirements of Title 10 Code of Federal Regulations Part 50 (10 CFR 50), Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979," Section III. O, "Oil collection system for reactor coolant pump." The exemption would allow installation of a new reactor coolant pump motor with an oil collection system which is capable of collecting oil leakage from all potential pressurized and unpressurized leakage sites except for four potential oil leakage sites. The four potential leakage sites are: the anti-reverse device (ARD) vents, upper oil supply lines from the lift pump to the ARD, lower motor leak detection system piping, and lower guide bearing thermocouple wells.

The Need for the Proposed Action:

10 CFR 50, Appendix A, "General Design Criteria for Nuclear Power Plants," Criterion 3, "Fire protection," specifies that "Structures, systems, and components important to safety shall be designed and located to minimize, consistent with other safety requirements, the probability and effect of fires and explosions." 10 CFR 50, Appendix R, sets forth fire protection features required to satisfy the general design Criterion 3 of the Commission's regulations. Pursuant to 10 CFR 50, Appendix R, Section III. O, the RCP shall be equipped with an oil collection system which "...shall be capable of collecting lube oil from all potential pressurized and unpressurized leakage sites in the reactor coolant pump lube oil systems."

As part of its design improvements program to enhance motor reliability and simplify maintenance activities, the licensee proposed to replace the existing RCP motors with a new motor and implement a re-designed RCP lube oil system. As a result of physical interferences and other design difficulties, four specific sites in the RCP motor lube oil system could not accommodate an oil collection system for collecting potential oil leakage. An exemption from 10 CFR 50, Appendix R, Section III. O, is required to permit the four specific sites in the RCP lube oil systems without an oil collection system, and thus, exclude them from leakage protection.

Environmental Impacts of the Proposed Action:

The Commission has completed its evaluation of the licensee's application.

Section III. O of Appendix R to 10 CFR Part 50 states that: "The oil collection system shall be so designed, engineered, and installed that failure will not lead to fire during normal or design basis accident conditions and

that there is reasonable assurance that the system will withstand the Safe Shutdown Earthquake [SSE]. Such collection systems shall be capable of collecting lube oil from all potential pressurized and unpressurized leakage sites in the reactor coolant pump lube oil systems. Leakage shall be collected and drained to a vented closed container that can hold the entire lube oil system inventory."

The RCP motor lube oil system, with its pumps and associated piping, supplies oil to several parts of the RCP. The existing RCP lube oil system includes a high pressure and an induced flow system. The high pressure system consists of two independent pumps, and associated piping, and supplies oil, among other components, to the ARD. The induced flow system is driven by the rotation of the RCP motor and provides lube oil to the thrust bearings, guide bearings, and to the ARD.

The new oil lubricating system would contain approximately 200 gallons of oil and would include several design features such as spray shields, series of drip and drain pans and piping, and a lube oil collection system tank. The new system eliminated one of the two lift pumps and its components which should result in a decrease in the number of potential leakage sites. The oil collection system would be capable of collecting lube oil from all possible pressurized and unpressurized leak sites except for the four specific locations. Of the four potential leakage sites, ARD vents and lower RCP motor leak detection system piping do not contain oil under routine operating conditions. The upper oil supply lines from the lift pump to the ARD are pressurized only during a brief period of motor startups and shutdowns. The lower guide bearing thermocouple wells are passive in nature. Additionally, in the new design, vents would be equipped with demisters and

filters to prevent lube oil mist from escaping to the atmosphere. If leakage were to occur during normal plant operations, the oil would channel to the drain pan. Any lube oil leak which may not have been fully captured could potentially run down the RCP motor onto hot Reactor Coolant System surfaces. However, the flammability characteristics of the oil, flashpoint of 452°F, and an auto ignition temperature of 500°F - 700°F, that would be used in the lube oil system, reduce the likelihood that the oil will readily ignite upon coming in contact with hot RCS piping surfaces. Additionally, if the oil leak became ignited, the fire would be localized in the area of the leakage and detected by the thermal fire detectors.

Fire protection features for the RCP motors include three temperature heat detectors with 190°F setpoints located over each RCP. Any localized fire in the area due to oil leakage would be detected by the thermal fire detectors and would provide an alarm function in both the reactor building and annunciate in the main control room. Additional indications of a potential RCP fire would also be provided by control room alarms on low level oil, low oil pressure or high vibrations. If an RCP fire alarm is received in the main control room, it is expected that the control room operators would evaluate any alarm associated with the RCP and its lube oil system and initiate fire brigade entry into the reactor building to investigate and fight the fire. The reactor building is equipped with an internal firefighting standpipe hose station system and fire extinguishers are appropriately distributed throughout the structure. RCP firefighting would be accomplished by using either portable fire extinguishers or water from a hose stream or a combination of both. Access to the four RCPs for firefighting can be accomplished by making entry into the "D" rings.

The existing Crystal River Unit 3 RCP motor lube oil system is a non-seismic system. The new RCP lube oil system and lube oil collection systems would be seismically qualified to withstand an SSE. Therefore, if an SSE were to occur, the system is not expected to fail.

Based on the design features of the new RCP motors and the fact that their lube oil system and associated lube oil collection systems are seismically designed to withstand an SSE, there is reasonable assurance that the RCP lube oil system will not present a major fire hazard.

The staff concludes, based on its evaluation, that potential oil leakage from the specific four sites in the RCP lube oil system will not present a major fire hazard and that the current level of fire protection is sufficient to mitigate the consequences of a fire in the area of these potential leakage sites. In addition, the staff concludes that it is not expected that these potential leakage sites will fail during an SSE. On that basis, the staff finds that the licensee's proposed design of the RCP motor lube oil collection system provides an equivalent level of fire safety to that required by the provisions of Appendix R, Section III.0, and, therefore, is acceptable.

Accordingly, the Commission concludes that this proposed action would result in no significant radiological environmental impact. With regard to potential non-radiological impacts, the proposed change does not affect non-radiological plant effluents and has no other environmental impact. Therefore, the Commission concludes that there are no significant non-radiological environmental impacts associated with the proposed action.

Alternative to the Proposed Action:

As an alternative to the proposed action, the staff considered denial of the proposed action. Denial of the application 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 did not involve the use of any resources not previously considered in the Final Environmental Statement, dated May 1973, related to operation of Crystal River Unit 3.

Agencies and Persons Consulted:

The NRC staff consulted with the State of Florida regarding the environmental impact of the proposed action.

FINDING OF NO SIGNIFICANT IMPACT

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

For further details with respect to this action, see the request for exemption dated June 7, 1993, and March 28, 1994, which are available for public inspection at the Commission's Public Document Room, 2120 L Street, NW., Washington, DC and at the local public document room located at Coastal Region Library, 8619 W. Crystal Street, Crystal River, Florida 32629.

Dated at Rockville, Maryland, this 6th day of September 1994.

FOR THE NUCLEAR REGULATORY COMMISSION

Victor M. McCree
Victor M. McCree, Acting Director
Project Directorate II-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation