

March 9, 2000

Mr. John Paul Cowan  
Vice President, Nuclear Operations  
Florida Power Corporation  
ATTN: Manager, Nuclear Licensing (SA2A)  
Crystal River Energy Complex  
15760 W. Power Line Street  
Crystal River, Florida 34428-6708

SUBJECT: CRYSTAL RIVER UNIT 3 - EXEMPTION FROM ANNUAL PHYSICAL  
INVENTORY REQUIREMENT OF 10 CFR 70.51 (TAC NO. MA6244)

Dear Mr. Cowan:

The Commission has issued the enclosed exemption from the requirement in Title 10, *Code of Federal Regulations* (10 CFR), Section 70.51, "Material balance, inventory, and records requirements" to conduct a physical inventory of special nuclear material (SNM) every 12 months for Crystal River Unit 3 (CR-3). This exemption is in response to your application dated July 14, 1999.

Based on the staff's evaluation of your submittal, we have determined that the exemption from the requirement in 10 CFR 70.51(d) for an annual physical inventory of the SNM located in the CR-3 spent fuel pool is acceptable as proposed by your request.

The Commission, pursuant to 10 CFR 70.14(a), has issued the enclosed exemption for Crystal River Unit 3. A copy of this exemption has been forwarded to the Office of the Federal Register for publication.

Sincerely,

***/RA/***

L. A. Wiens, Senior Project Manager, Section 2  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-302

Enclosure: Exemption

cc w/encl: See next page

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UNITED STATES OF AMERICANUCLEAR REGULATORY COMMISSION

In the Matter of )  
 )  
 FLORIDA POWER CORPORATION ET AL. ) Docket No. 50-302  
 )  
 (Crystal River Unit 3) )

EXEMPTION

## I.

Florida Power Corporation et al. (FPC or the licensee) is the holder of Facility Operating License No. DPR-72, which authorizes the operation of Crystal River Unit 3 (CR-3). The license states that the licensee is subject to all the rules, regulations, and orders of the U.S. Nuclear Regulatory Commission (the Commission or NRC) now or hereafter in effect.

The facility consists of a pressurized-water reactor at the licensee's site located in Citrus County, Florida.

## II.

Title 10 of the Code of Federal Regulations (10 CFR), Part 70, Section 70.51, "Material balance, inventory, and records requirements," in sub-section (c) states that "Each licensee who is authorized to possess at any one time special nuclear material in a quantity exceeding one effective kilogram of special nuclear material shall establish, maintain, and follow written material control and accounting procedures that are sufficient to enable the licensee to account for the special nuclear material in the licensee's possession under license." Sub-section (d) states that "Except as required by paragraph (e) of this section, each licensee who is authorized to possess at any one time and location special nuclear material in a quantity totaling more than 350 grams of contained uranium-235, uranium-233, or plutonium, or any combination thereof,

shall conduct a physical inventory of all special nuclear material in his possession under license at intervals not to exceed twelve months.”

By letter dated July 14, 1999, the licensee requested an exemption from the requirement of 10 CFR 70.51(d) that requires a 12-month physical inventory of the fuel in the spent fuel pool (SFP) due to the positioning of missile shields over the pool. The proposed exemption would allow the physical inventory of the special nuclear material (SNM) located in the CR-3 SFP to be performed each refueling outage, when the missile shields are removed for fuel movement, without having to perform physical inventories between outages if the missile shields have not been removed for other reasons. In order to perform the physical inventory, the licensee must remove four of the missile shields, which weigh approximately 6200 pounds each. Approximately two-man weeks of labor are required to perform the physical inventory if shield removal and re-installation are necessary. An exemption from this requirement would reduce the burden associated with the physical inventories as well as the personal safety risks associated with movement of the missile shields.

### III.

Pursuant to 10 CFR 70.14, “Specific exemptions,” the Commission may, upon application of any interested person or upon its own initiative, grant such exemptions from the requirements of the regulations in this part as it determines are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest.

The underlying purpose of the physical inventory required by 10 CFR 70.51(d) is to verify that the material control and accounting procedures are sufficient to enable the licensee to account for the SNM in the licensee’s possession under license. The CR-3 SFP has missile shields installed directly over the SFP to provide protection from tornado generated missiles.

These shields are required to be installed at all times except when performing activities associated with handling fuel or pool maintenance. The missile shields weigh approximately 6200 pounds each and each is secured in place by four bolts. Movement of the missile shields requires the use of shield-handling devices and auxiliary building cranes.

The missile shields provide a physical barrier over the entire SFP, preventing access to the fuel in the SFP without first removing the shields. In addition, when the missile shields are in place, the Fuel Handling Bridge is immobilized. Thus, the missile shields serve to restrict access to the fuel in the SFP and protect the SNM from inadvertent and unauthorized movements or damage. Therefore, while the missile shields are installed, the inventory of SNM in the SFP cannot change.

Removal and installation of the SFP missile shields are administratively controlled by Refueling Procedure FP-434, "Spent Fuel Pool Missile Shields." Prior to movement of any missile shield, the Nuclear Shift Manager must be notified. Thus, required adherence to the refueling procedures will control access to the SFP by controlling movement of the missile shields.

Instead of performing the physical inventory of SNM in the SFP every 12 months, FPC will perform a physical inventory of the SFP within 90 days of removing the missile shields over the fuel in the SFP, if a physical inventory has not been performed within the preceding 12 months. This will allow the physical inventory to be performed each refueling outage without having to remove the SFP missile shields solely to perform physical inventories between outages.

Based on the above, the staff finds that an exemption from the requirement to perform a physical inventory of the SNM in the SFP every 12 months is acceptable, in that the missile

shields, in conjunction with the administrative controls governing their movement, ensure proper accountability of the SNM in the SFP between periods when the shields are removed.

IV.

For the foregoing reasons, the NRC staff has determined that the proposed alternative measures for physical inventories of SNM in the CR-3 spent fuel pool continue to meet the requirements of 10 CFR 70.51 when the missile shields, which represent a physical barrier, are in place. A specific exemption is granted to the requirements in 10 CFR 70.51(d) for conducting a twelve-month physical inventory of SNM located in the CR-3 spent fuel pool.

Accordingly, the Commission has determined that the proposed change: (1) is authorized by law; (2) will not endanger life or property; (3) will not endanger the common defense and security; and (4) is otherwise in the public interest. Therefore, the Commission hereby grants Florida Power Corporation the following exemption:

The Florida Power Corporation, et al., is exempt from the requirements of 10 CFR 70.51(d) with respect to performing a physical inventory of the special nuclear material in the Crystal River Unit 3 spent fuel pool every 12 months. A physical inventory of the special nuclear material in the spent fuel pool will be conducted within 90 days of removal of the missile shields over the fuel in the spent fuel pool, if a physical inventory has not been performed within the preceding 12 months. This exemption only applies to the special nuclear material located in the Crystal River Unit 3 spent fuel pool.

Pursuant to 10 CFR 51.32, the Commission has determined that this exemption will not have a significant effect on the quality of the human environment ( 65 FR12592).

This exemption is effective upon issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA/*

John A. Zwolinski, Director  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland this                      day of

Mr. John Paul Cowan  
Florida Power Corporation

**CRYSTAL RIVER UNIT NO. 3**

cc:

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