

# Florida Power

CORPORATION  
Crystal River Unit 3  
Docket No. 50-302

June 13, 1991  
3F0691-04

U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, D.C. 20555

Subject: Technical Specification Change Request No. 186

Dear Sir:

Florida Power Corporation (FPC) hereby submits Technical Specification Change Request No. 186 requesting amendment to Appendix A of Operating License No. DPR-72. As part of this request, the proposed replacement pages for Appendix A and associated bases are provided.

This submittal requests the replacement of Technical Specification 3.6.2.2 for the Spray Additive System with a new Technical Specification 3.6.2.2 for the Containment Emergency Sump pH Control System. The capability to add the sodium hydroxide to the Reactor Building Spray System during the initial phase of a Loss-of-Coolant Accident will be replaced with trisodium phosphate dodecahydrate (TSP-C) stored in containers located on the 95' elevation of the Reactor Building.

FPC requests that this amendment be approved before startup of Crystal River Unit 3 following Refuel 8. Refuel 8 is presently scheduled to be completed in June 1992.

Sincerely,

P. M. Beard, Jr.  
Senior Vice President  
Nuclear Operations

Attachments

PMB/JWT

xc: Regional Administrator  
Senior Resident Inspector  
NRR Project Manager

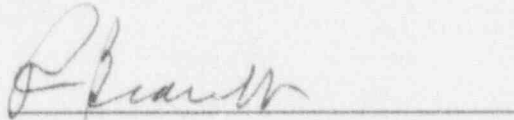
*Handwritten initials/signature: Aool*

U. S. Nuclear Regulatory Commission  
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Page 2

STATE OF FLORIDA

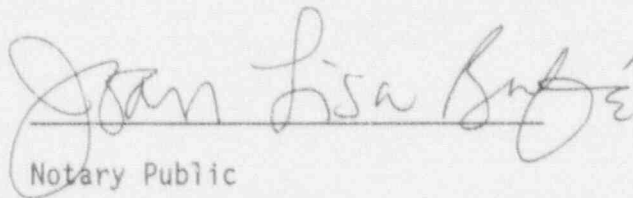
COUNTY OF CITRUS

P. M. Beard, Jr. states that he is the Senior Vice President, Nuclear Operations for Florida Power Corporation; that he is authorized on the part of said company to sign and file with the Nuclear Regulatory Commission the information attached hereto; and that all such statements made and matters set forth therein are true and correct to the best of his knowledge, information, and belief.



P. M. Beard, Jr.  
Senior Vice President  
Nuclear Operations

Subscribed and sworn to before me, a Notary Public in and for the State and County above named, this 13th day of June 1991.



Notary Public

Notary Public, State of Florida at Large,

My Commission Expires: 6-21-91

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

IN THE MATTER OF  
FLORIDA POWER CORPORATION

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DOCKET NO. 50-302

CERTIFICATE OF SERVICE

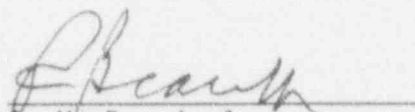
P. M. Beard, Jr. deposes and says that the following has been served on the Designated State Representative and Chief Executive of Citrus County, Florida, by deposit in the United States mail, addressed as follows:

Chairman,  
Board of County Commissioners  
of Citrus County  
Citrus County Courthouse  
Inverness, FL 32650

Administrator,  
Radiological Health Services  
Department of Health and  
Rehabilitative Services  
1323 Winewood Blvd.  
Tallahassee, FL 32301

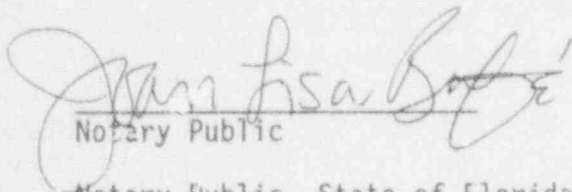
A copy of Technical Specification Change Request no. 186 requesting Amendment to Appendix A of Operating License No. DPR-72.

FLORIDA POWER CORPORATION



P. M. Beard, Jr.  
Senior Vice President  
Nuclear Operations

SHOWN TO AND SUBSCRIBED BEFORE ME THIS 13th DAY OF JUNE 1991



Notary Public

Notary Public, State of Florida at Large  
My Commission Expires: 6-21-91

FLORIDA POWER CORPORATION  
CRYSTAL RIVER UNIT 3  
DOCKET NO. 50-302/LICENSE NO. DPR-72  
REQUEST NO. 186, REVISION 0  
CONTAINMENT EMERGENCY SUMP pH CONTROL SYSTEM

**LICENSE DOCUMENT INVOLVED:** Technical Specifications

**PORTIONS:** Specification 3.6.2.2, Page 3/4 6-12 and 13  
Specification Bases 3/4.6.2.2, Page B 3/4 6-3

**DESCRIPTION OF REQUEST:**

This submittal changes the method of pH control for the water in the Reactor Building Emergency Sump after a postulated Loss-of-Coolant-Accident (LOCA). This change deletes the specification for a Sodium Hydroxide (NaOH) spray additive and adds a specification for the use of trisodium phosphate dodecahydrate (TSP-C) as the chemical for pH control.

**REASON FOR REQUEST:**

Research has shown that a plain borated water mixture used in a containment spray system is effective in removing elemental iodine during the initial phase of a LOCA. However, to preclude the re-evolution of the iodine during the recirculation phase and to control long-term stress corrosion, buffering of the water in the emergency sump will still be necessary. The change in the method of chemical addition and the type of chemical will reduce operational problems and personnel exposure hazards with NaOH.

**EVALUATION OF REQUEST:**

The present method of pH control for the emergency sump is to add NaOH to the Reactor Building Spray during the initial phase of the LOCA. The NaOH is mixed with water from the Borated Water Storage Tank (BWST) prior to being sprayed into the containment atmosphere. The NaOH, BWST water, and reactor coolant exiting from the ruptured pipe mix together and run into the emergency sump. The pH of this fluid combination is to be 7.2 to 11.0 prior to the post-LOCA recirculation phase of the Emergency Core Cooling Systems (ECCS). Sump pHs within these limits were believed to be effective in the prevention of iodine re-evolution and long-term stress corrosion.

Recent research cited by the NRC in developing Revision 2 to the Standard Review Plan (SRP) Section 6.5.2, "Containment Spray As A Fission Product Cleanup System" confirms that the release of fission products will not occur immediately upon the occurrence of a LOCA. The iodine removal rate of a plain boric acid spray is high enough to make a spray additive unnecessary during the initial injection phase when the spray solution is being drawn from the BWST. Since long-term use of a plain boric acid spray could increase the potential for elemental iodine re-evolution and long-term stress corrosion, the equilibrium sump solution pH must be adjusted to 7.0 or greater by the time of the onset of the recirculation mode. TSP-C has been shown to be an effective method to control pH passively and assure the sump pH is 7.0 or greater before recirculation procedures are implemented.