

**Florida
Power**

CORPORATION
Crystal River Unit 3
Docket No. 50-302

February 13, 1992
3F0292-09

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

Subject: Technical Specification Change Request No.196

Dear Sir:

Florida Power Corporation (FPC) hereby submits Technical Specification Change Request No. 196 requesting amendment to Appendix A of Operating License No. DPR-72. As part of this request, the proposed replacement page for Appendix A is provided.

This submittal proposes to revise the Fuel Assembly description in Technical Specification 5.3.1.

Sincerely,

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

PMB/GMF

Attachment

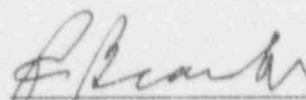
xc: Regional Administrator, Region II
Senior Resident Inspector
NRR Project Manager

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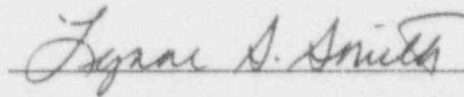
STATE OF FLORIDA
COUNTY OF CITRUS

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 February, 1992.



Notary Public

Notary Public, State of Florida at Large,

My Commission Expires: _____
Notary Public, State of Florida at Large
My Commission Expires Dec. 18, 1995
Bonded thru Agent's Notary Brokerage

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

IN THE MATTER

FLORIDA POWER CORPORATION

DOCKET NO. 50-302

CERTIFICATE OF SERVICE

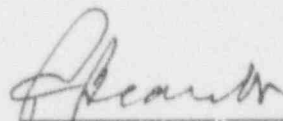
P. M. Beard, Jr. deposes and says that the following has been served on the Designated State Representative and Chief Executive of Citrus County, Florida, by deposit in the United States mail, addressed as follows:

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

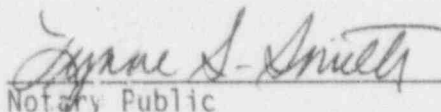
A copy of Technical Specification Change Request No. 196, requesting Amendment to Appendix A of Operating License No. DPR-72.

FLORIDA POWER CORPORATION



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

SWORN TO AND SUBSCRIBED BEFORE ME THIS 13th DAY OF February 1992.


Notary Public

Notary Public, State of Florida at Large
My Commission Expires:

Notary Public, State of Florida at Large
My Commission Expires Dec. 18, 1995
Bonded thru Agent's Notary Brokerage

SHOLLY EVALUATION OF REQUEST:

Florida Power Corporation has reviewed the requirements of 10 CFR 50.92 as they relate to the proposed change to 5.3.1 to allow replacement of defective fuel rods in BWFC designed Mark B fuel assembly does not involve a significant hazards consideration. FPC finds that the amendment will not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated because the probability of any accident which is presently evaluated is independent of the fuel design or assembly configuration. Therefore, no accident initiators or assumptions are affected. The core performance and accident response will be bounded by the cycle-specific reload analysis, this will assure that there is no adverse effect on the radiological consequences of previously evaluated accidents.
2. Create the possibility of a new or different kind of accident from any accident previously evaluated because the modified fuel assemblies will meet fuel assembly design specifications. Although this proposed change would allow modifications to fuel assemblies, the effects of such modifications would not lead to the initiation of a new or different kind of accident.
3. Involve a significant reduction in the margin of safety. No reduction in the margin of safety will result because the replacement of defective fuel rods will be analyzed in the cycle-specific analysis. The number and configuration of filler rod substitutions will be limited to those configurations for which applicable NRC approved codes and methods are valid. This will verify that acceptable safety margins are maintained. Conformance to existing design criteria and safety analysis limits will be confirmed before operation of the core for the next refuel cycle.

Therefore, FPC has concluded that the activities associated with this amendment request do not meet any of the significant hazards consideration standards of 10 CFR 50.92 (c).

FLORIDA POWER CORPORATION
CRYSTAL RIVER UNIT 3
DOCKET NO. 50-302/LICENSE NO. DPR-72
REQUEST NO. 196, REVISION 0

LICENSE DOCUMENT INVOLVED: Technical Specifications

PORTIONS: 5.3.1

DESCRIPTION OF REQUEST:

This change request proposes a revision of Technical Specification 5.3.1 to allow replacement of defective fuel rods with stainless steel filler rods in the B&W Fuel Company (BWFC) designed Mark B fuel assembly. The acceptability of non-fuel bearing rods will be determined by cycle specific analyses, using applicable NRC approved codes and methodologies which are valid for the configurations used.

REASON FOR REQUEST:

The proposed request provides flexibility to deviate from the number of fuel rods per assembly when desirable to permit timely removal of fuel rods that are found to be leaking during a refueling outage or are determined to be probable sources of future leakage. This change will allow the repair of fuel assemblies containing defective fuel rods. The scope of the repairs will be limited to ensure that repaired fuel assemblies remain bounded by the currently NRC approved methodologies as justified by analyses or tests. This improvement in the fuel performance program will provide for reductions in future occupational radiation exposure and plant radiological releases.

EVALUATION OF REQUEST:

Fuel assemblies are designed for structural adequacy and reliable performance during core operation, handling, and shipping. The basic fuel assembly is composed of two hundred and eight fuel rods, sixteen control rod guide tubes, one instrumentation tube assembly, seven segmented spacer sleeves, eight spacer grids, and two end fittings. The guide tubes, spacer grids, and end fittings form a structural cage to arrange the rods and tubes in a 15 x 15 array. Fuel rods are supported at each spacer grid by contact points integral with the walls of the cell boundary. The guide tubes are permanently attached to the upper and lower end fittings. Use of similar material in the guide tubes and fuel rods results in minimum differential thermal expansion.

The function of Technical Specification 5.3.1 is to ensure that the fuel configuration has been analyzed using NRC approved methodologies and that safety limits and design criteria are maintained.

The replacement of damaged fuel rods with non-fuel stainless steel filler rods has been previously implemented at other Babcock and Wilcox (B&W) designed facilities such as Three Mile Island Nuclear Generating Station, Unit #1, and Arkansas Nuclear One, Unit #1. BAW-2149, Evaluation of Replacement Rods in BwFC Fuel Assemblies", was submitted to the NRC in December 1991 to provide

information to justify the use of stainless steel replacement rods in assemblies. The report describes the determination of the effects of solid stainless steel replacement rods on the nuclear, thermal-hydraulic, and mechanical analysis of

the fuel. This determination was performed with methodology that has previously been approved by the NRC. The results show that when performing repairs on fuel assemblies, the replacement of as many as ten fuel rods within a single fuel assembly is acceptable.

Replacement of fuel rods with stainless steel filler rods does not affect the structural ability of a fuel assembly to withstand normal handling. For a combined loss-of-coolant accident (LOCA) and Safe Shutdown Earthquake (SSE), a fuel assembly is designed to allow for a safe shutdown of the reactor. Based on structural evaluations completed by BWFC, it has been determined that stainless steel filler rods do not adversely affect the performance of a fuel assembly during a combined LOCA and SSE.

The material used for the stainless steel filler rods (SS304) is a standard reactor grade material, suitable for the reactor or spent fuel pool environment. The thermal expansion of the stainless steel filler rod in the radial direction will be about three times more than a Zircaloy-4 clad fuel rod. That expansion will compress the spring stops on the spacer grids about 2 mils more than the fuel rods. That compression is within the elastic range of the spring stops, and will not cause any set of the spring stops.

During the cycle specific evaluation, the effects of stainless steel filler rods will be analyzed. The analysis will address the effect of the repair on performance parameters such as reactivity, power peaking, margin to departure from nucleate boiling for the surrounding fuel rods, and mechanical design to show that existing safety limits and design criteria will still be met. The extent of the repairs allowed will be restricted to configurations for which NRC approved methodologies are valid.

In conclusion, there is no adverse effect on safety since this Technical Specification revision is only for the description of the number of fuel rods in a Mark B fuel design. The number and configuration of filler rod substitutions will be limited to those configurations for which applicable NRC approved codes and methods are valid.