

**Florida
Power**

CORPORATION
Crystal River Unit 3
Docket No. 50-302

May 6, 1992
3F0592-03

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

Subject: Technical Specification Change Request No. 196, Supplement 1

Reference: 1. FPC to NRC, 3F0292-09, dated February 13, 1992
2. B&WOG Topical Report, BAW-2149, dated December 1991

Dear Sir:

Florida Power Corporation submitted Technical Specification Change Request No. 196 (Reference 1) on February 13, 1992. The change, when approved, would allow the utilization of fuel assemblies which included stainless steel (SS) pin replacements for fuel rods as long as the reconstituted assemblies were analyzed utilizing NRC approved methodologies. That change request is consistent with the Improved Standard Technical Specifications and was based on the anticipated successful and timely review of a B&WOG Topical Report/BAW-2149, Evaluation of Replacement Rods in BWFC Fuel Assemblies, (submitted by the B&W Owners Group in December, 1991). The NRC is expediting the review of the Topical Report, but is not likely to complete the review in time to support the upcoming refueling at Crystal River 3. FPC and NRC have identified an alternate resolution to allow the review to go forward without the benefit of completing the approval of the Topical Report. This letter constitutes a supplement to the referenced change request and proposes that it be utilized as an alternate technical basis for its approval.

The reload configuration will be analyzed in accordance with NRC approved methodologies as required by the Core Operating Limits Report. As part of that analysis a 10% DNBR penalty will be imposed on the fuel pins adjacent to the SS replacement pins. The NRC initially suggested and FPC and B&W discussed the possibility of imposing a 10% DNBR penalty on reconstituted fuel assemblies. That is not possible. The assemblies will not have that much margin in their core locations during certain portions of the cycle. This is true for the existing 'reference design' and cannot be accomplished in the redesign that will be accomplished to support actual cycle burnup and fuel inspection results.

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The following was provided to supplement information furnished in the change request during our discussions of this issue:

- 1) The reload will utilize up to five assemblies which have one or two SS pins. We understand the NRC will generate a footnote to add to the wording proposed in the change request limiting the approved scope to these assemblies. While we do not believe this is necessary (the existing words limit the utilization to approved configurations) we are not opposed to it.
- 2) All the fuel that was to be reinserted in our last refueling was UT inspected to identify leakers. Five assemblies were identified as leakers. FPC did not seek to repair and reuse them during the outage. FPC considered it more practical and appropriate to discharge them (and their symmetric assemblies) and conduct the repairs while the unit was on-line. However, these repaired fuel assemblies, with significant capacity remaining, were relied upon in fuel management and fuel purchase decisions made well over a year ago. These assemblies (a total of 12) had burnup as low as 12,000 MWd/MtU. We typically burn fuel to about 38,000 MWd/MtU. We have designed the reload utilizing 64 new assemblies and these 12 reinserts. The design (which we refer to as the reference design) assumed a nominal burnup for Cycle 8, which we may not achieve, and that further leakers will be identified during the next refueling UT inspection. We will modify the reference design as needed to reflect the burnup shortfall as well as the removal of any leakers. Thus, at this point we do not have the final design. However, there is a very limited (approximately 14 days) window for fuel removal, UT and reinsertion. During that time we will evaluate the differences between the reference design and the one that we can achieve.
- 3) In the reference design, 8 of these 12 assemblies surround the center location. The remaining 4 are close to the core periphery. It would require a complete core redesign to locate them elsewhere. Further, it might not be possible to do so from a long-term fuel management perspective. Simply put, we need to complete the utilization of the fuel in these assemblies. Thus, we do not have the flexibility of imposing high margins (and thus low burnup) on these assemblies.
- 4) All of the SS pin locations were intentionally surrounded by fuel bearing pins.
- 5) The limiting factor for establishing a 10% DNBR assembly penalty is the BOC, DNB analysis for three-pump operation. The reference design indicates that about a 6% DNBR margin will exist for the limiting assembly. For the 4-pump analysis we could indeed tolerate a larger assembly DNBR penalty. Also, after 100 EFPD (or less) we could tolerate the 10% assembly DNBR penalty for all pump combinations.

- 6) The technical basis for our analysis is as described in the Topical Report. The mechanical/structural aspects have not been affected by this alternate review plan. The CHF data has been shown to tolerate the single SS pin surrounded by the heated pin case which is equivalent to the guide-tube condition that already exists in the fuel without any reconstitution. It (the CHF data as described in the Topical) also supports a wide variety of other configurations.

FPC believes that the imposition of any DNBR penalty is not technically necessary, but understands it to be a reasonable alternative to completing the Topical approval process or more complex plant-specific analysis. FPC appreciates the constructive interaction that has occurred on this issue. However, it should be noted that approval of the Topical continues to be necessary to support other B&W plant needs and TSIP which FPC currently plans to implement within 12 months.

Sincerely,



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

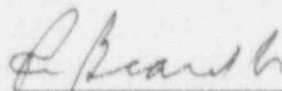
PMB/KRW

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

U. S. Nuclear Regulatory Commission
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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 6th day of May, 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

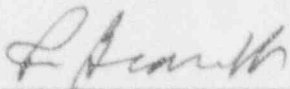
P.M. Beard, Jr. deposes and says that the following has been served on the Designated State Representative and Chief Executive of Citrus County, Florida, by deposit in the United States mail, addressed as follows:

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, Supplement 1 requesting Amendment to Appendix A of Operating Licensing No. DPR-72.

FLORIDA POWER CORPORATION



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

SWORN TO AND SUBSCRIBED BEFORE ME THIS 6th DAY OF MAY, 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