

**Florida
Power**
CORPORATION

Crystal River Unit 3
Docket No. 50-302

November 9, 1990
3F1190-04

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

Subject: Electrical Penetrations Leak Rate Testing

Reference: A. NRC Letter - Transmittal of Inspection Report 89-18
B. FPC to NRC Letter dated September 20, 1989
C. NRC Letter - Request for Additional Information

Dear Sir:

This letter is supplied to bring closure to the proposed violation associated with electrical penetration testing at Crystal River Unit 3 (CR-3). Florida Power Corporation (FPC) and NRC/Region II have discussed this issue on a number of occasions and at various management levels over the past 14 months. For clarity and completeness, FPC is providing a Background section summarizing both the NRC and FPC positions on the legal and technical merits of the issue; Proposed Actions, supplying a commitment to begin periodic testing of electrical penetrations; and a brief Conclusion. FPC is contesting the violation for two reasons: (1) FPC considers the NRC staff's position on what constitutes the licensing basis incorrect, and, (2) there is little valid technical need to do such testing, thus we do not believe we violated our licensing basis. Nevertheless, we are proposing a periodic test program to remove any doubt associated with the capability of the electrical penetrations to perform their containment boundary function. This response is being submitted by November 9, 1990 as agreed upon with Region II staff.

BACKGROUND

The basic issue is whether or not the Conax electrical penetration assemblies utilized at CR-3 require periodic testing. General industry practice, in accordance with 10 CFR 50, Appendix J, is to leak test such penetrations when they rely on resilient seals to support containment integrity. Resiliency, however, is not a defined term in Appendix J or elsewhere in the regulations. FPC has followed a simple straightforward definition, consistent with sound engineering practice. If the assembly (in the case of electrical penetrations) relies on the continued,

9011150201 901109
PDR ADCK 05000302
PDC
Q

retained flexibility of the seals to assure proper leak-tightness, then it is a penetration which relies on resilient seals. Conax utilizes hardened polysulfone which is cut and drilled to fit the complex space and is then subjected to very significant compressive loads to closely match the associated seating surfaces, but the polysulfone is not relied on to change shape as the relative pressure on the overall assembly changes due to accident conditions. The design of the penetration assembly is intended to produce a leak tight, rigid containment component. Thus by its terms, Appendix J does not require leak testing of these penetrations.

A review of NPRDS data did not identify any examples of failed Conax assemblies due to leaks through the polysulfone plugs. All test failures identified in the NPRDS were due to problems with test equipment and implementation.

The CR-3 specific licensing basis reflects the above position and establishes that leak testing of the penetrations is not required. The initial submittal of the FSAR (January 25, 1971) section 5.6.4.2 reads as noted below:

"Components which penetrate and seal the containment boundary with seals, gaskets or sealant compounds which are resilient; or piping penetrations fitted with an expansion bellows as the only barrier to leakage from containment shall be leak tested at periodic intervals during the lifetime of the unit to ensure their continuing integrity.

The only [emphasis added] components in this unit which are within the scope of this classification are:

- a. The resilient seals of the personnel access air locks.
- b. The resilient seals of the equipment access door.
- c. The gaskets in the blind flanges of the two fuel transfer tubes.
- d. The gaskets on the integrated leak rate system penetrations (8 flanges).
- e. The gaskets on the steam generator drain (2 flanges).
- f. The gaskets on the in-core instrument penetration (2 flanges).

All other pipe penetrations of containment have at least one non-resilient barrier, attached with full penetration structural welds,

between the containment atmosphere and the environment. All electrical penetrations have at least one teflon insulator, structurally bonded between wire and steel, and steel-to-steel welds designed, fabricated, and inspected in accordance with ASME Boiler and Pressure Vessel Code Section III, Class B as the barrier between the containment atmosphere and the environment."

The NRC staff's review of this submittal resulted in an inquiry about our compliance with Appendix J and FPC revised the section by deleting the two uses of the word "all" (noted by the backshading). This revision (Amendment 49 dated September 16, 1976) was made prior to issuance of the Operating License (OL) and has remained unchanged. The NRC staff tacitly accepted this FPC position until 1988. The NRC has since noted that the last paragraph (apparently an explanation of why electrical penetrations were not included) does not clearly resolve the current issue in that it can be read to imply that the CR-3 penetrations employ welded barriers. Most of the potential leak paths in each electrical penetration are indeed welded. Thus, the paragraph can also be reasonably read to correctly describe our assemblies (except that CR-3's electrical penetrations use polysulfone rather than teflon to enhance radiation resistance). Nevertheless, FPC has already committed to clarify this section of the FSAR.

The NRC SER clearly accepted our FSAR program description as meeting Appendix J. The NRC staff now claims that the SER states this only because the reviewer apparently was led to believe our assemblies were designed differently. We would note, however, that the words in the SER are very similar to other SER's of that vintage and the only conclusion that can be drawn is that the NRC staff accepted CR-3's program as described by the FSAR. If this was in error, the staff must, under the regulations, seek to correct that error by means other than a notice of violation.

In considering FPC's verbal request that this be treated as a backfit under 10 CFR 50.109, the NRC staff stated that CR-3's FSAR was simply in error. The NRC staff stated that the SER "corrected" that error by stating that electrical penetrations which relied on resilient seals would be tested. FPC must note that rejecting a licensee position in the FSAR should not have been and is not normally done in this manner. Typically, a Request for Additional Information is forwarded to the licensee or the OL/SER is left with an open item. Leaving a SER conflicting with the document it accepts is not normal agency practice.

PROPOSED ACTION

Despite our position that the staff is changing the licensing basis of the plant without following the procedures of 10 CFR 50.109, FPC will begin testing the assemblies every third Refueling Outage. Since they were tested in Refuel 7, they will be tested next in Refuel 10.

NUMARC and the B&WOG have already forwarded a similar position to NRC management as part of the ongoing negotiation on the Containment Chapter in the Technical

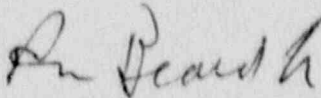
U.S. Nuclear Regulatory Commission
November 9, 1990
3F1190-04
Page 4

was added to the Technical Specification BASES by the NRC without industry concurrence and is an open item which will be resolved as part of the TSIP. We are hopeful that NRC management will review the backfitting implications of this issue before final action is taken on the revisions to Appendix J (currently scheduled for CRGR and ACRS review in the next few months) and the TSIP.

CONCLUSION

FPC has taken a strong and consistent stand on this issue because we believe that leak testing of the Conax penetrations is technically unjustified and the NRC position on our licensing basis is incorrect. We appreciate the open communication that has transpired and the extensive consideration the NRC staff has given this matter. However, we hereby request the staff to formally reconsider the technical and legal basis of the notice of violation in light of the positions discussed above. If FPC cannot rely upon the FSAR as constituting the principle element of our licensing basis, and the NRC position on this violation is applied elsewhere, it could represent a substantial economic burden. If the NRC staff believes a more extensive test program than that which we have committed to above is warranted, the NRC staff should identify it as a backfit and provide the requisite cost-benefit analysis.

Sincerely,



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

PMB:LVC

xc: Regional Administrator, Region II
Senior Resident Inspector