Florida Power
CORPORATION

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

Attention: Steven A. Varga

Subject: Crystal River Unit 3
Docket No. 50-302
Operating License No. DPR-72
Resolution of GI-24,
Auxiliary Feedwater (AFW) System Reliability

Dear Sir:

Florida Power Corporation (FPC) is pleased that we are proceeding toward final closure of this issue. Our response to the teams recommendations is attached. We have comments on the report itself which will be forwarded separately.

The willingness of FPC to provide an additional means of secondary heat removal has resolved the underlying concern for long term dependence on HPI PORV cooling. The design and installation schedule for the pump will be provided separately. One major change from our earlier discussions is that we have a somewhat higher confidence in meeting a Refuel VIII (1991) rather than IX (1993) schedule if intermediate milestones are met and other constraints (both financial and outage duration) do not change significantly.

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Again let me reiterate our continued commitment to resolve the issues and concerns associated with EFW reliability and express our satisfaction that we have essentially reached closure on this issue.

Sincerely,

Rolf C. Widell, Director
Nuclear Operations Site Support

KRW/dhd
Attachment

xc: Regional Administrator, Region II
Senior Resident Inspector

FPC RESPONSES TO EFW TEAM RECOMMENDATIONS

(1) Some maintenance procedures did not have the necessary drawings, isolation requirements or fire protection precautions. The licensee should review plant maintenance procedures and provide information that was missing (see Section D.2.2).

As noted in the report the team may well have received incomplete work packages. Current practice is being reviewed to improve work package content as well as its handling.

(2) Although about 75% of Priority 1 maintenance work was completed within approximately 1 month, the remaining 25% of that work required longer than 3 months to be completed. The licensee should set a goal for improving initiation and completion of Priority 1 work (Section D.2.2).

FPC is reevaluating our system for priortization of work activities. This should contribute to improved focus on appropriate activities. Quantitive goals are not anticipated to be part of this revised system.

(3) Although the licensee performs root cause analyses on high visibility major failures and transients, it does not have a formal root cause analysis program. The licensee should establish a formal root cause analysis program at least for the AFW and support system component failures (Section D.2.2).

Root cause analyses are initiated for a variety of reasons (repair/replacement program requirements, nonconformance resolution, management discretion, etc.). FPC believes such flexibility is warranted. We recognize the need to be sensitive to the significance of EFW including initiators from nonsafety systems (e.g., MFW challenges). Our Quality Assurance Department has instituted a formal training program on root cause analysis which should improve consistency and effectiveness. This training will be given a broad spectrum of the entire Nuclear Operations organization. We believe our root cause analysis program is effective and improving.

(4) The staff found some discrepancies and deficiencies within procedures, such as missing equipment, references, the correct spare parts, and use of ambiguous terminology. The licensee should improve its procedures by rectifying certain deficiencies (Section D.2.2).

We have improved our writer's guide applicable to the various plant procedures. This will be utilized during each procedure's normal biennial review. The specific concerns

noted as well as the generic feedback will be addressed during each procedure's review.

(5) There are no standard maintenance or inspection procedures for the AFW pump turbine or the associated trip and throttle valve ASV-50. The licensee should develop standard maintenance and inspection procedures and determine an appropriate inspection frequency (Section D.2.2).

These components performance, as it relates to pump/system performance, are assessed during the various pump surveillance activities. The need for specific inspection program is being evaluated.

(6) The licensee should perform a correlation between the predictive maintenance program and the failure rate of the trended equipment to show the degree of effectiveness of such a program, or to point out other causes of equipment failure (e.g., human error). If the latter is determined, increased attention should be paid to operator performance (Section D.2.2).

FPC believes ongoing INPO, NUMARC and NRC Staff initiatives are exhaustively addressing this rather complex issue. We are currently evaluating equipment trending and application of these results to the preventive maintenance program.

(7) Because of the relatively short time after loss of the secondary heat sink until high pressure inspection (HPI) cooling becomes essential, the licensee should take the following measures to improve the operator performance of the alternate decay heat removal Emergency Operations Procedure (EOP) sections (see Section D.3.2):

(a) The precise HPI cooling step in AP-380 should be indicated in AP-450.

This change has been made.

(b) A time window should be specified and discussed in the operator training program. This window should indicate the length of time after HPI cooling criteria are met and before primary system saturation.

FPC disagrees with this from a human factors viewpoint. Providing such a time frame would be potentially counter-productive.

(c) Operator training on EOPs should thoroughly explain the HPI cooling mechanism, flow characteristics and equipment capabilities, and initiation and termination criteria. EOP training should include simulator training.

We believe these are adequately covered in our current training program.

(d) The licensee should reduce the EOP emphasis on operator training and memory by reducing the procedural ambiguities. The licensee stated that Battelle Laboratories, Inc. has been contracted to review and improve the CR-3 EOPs. The licensee should vigorously pursue the EOP improvement program.

The referenced review was completed in December of last year.

(8) The licensee should improve the DC emergency lighting at the turbine-driven AFW pump location (Section D.5.2).

FPC has reviewed the required operations and believes the installed lighting coupled with portable lighting to be effective. The Staff review of Appendix R lighting did not identify any similar concerns.

(9) The training program for the new systems engineer position should include maintenance training or the engineer should be strongly encouraged to attend such training. The staff believes that this training will enhance the engineer's trouble-shooting and root-cause-analysis abilities (Section D.6.2).

FPC does encourage engineers to attend engineering and maintenance training programs. As the System Engineering section becomes fully staffed, more emphasis can be placed on this area, both for training locally and at off-site locations. As an example, recent experience of sending the system engineer to the vendor's facilities before Refuel VI to participate in a class for hands-on teardown of a diesel generator proved invaluable during the teardown/inspection of our Emergency Diesel Generators in 1987.

(10) The licensee should establish goals for decreasing the occurrence of loss of MFW events and unanticipated reactor scrams. These goals should be consistent with the B&W Owners Group Safety and Performance Improvements Program (SPIP) recommendations as accepted by the staff. The licensee should then strive to achieve these goals in a timely manner (D.7.3).

Our goals with regard to trip and transient frequency have been communicated to the highest levels of the NRC via BAWOG presentations and discussions. We believe our recent performance has reflected that commitment. The schedule for SPIP implementation is addressed in our May 31, 1988 letter (3F0588-16).

(11) The licensee should address all the recommendations made in the Final Report of the B&W Owners Group SPIP Auxiliary Feedwater System Review, issued in May 1987. The licensee should then provide a schedule for implementing the relevant recommendations (D.7.3).

All SPIP inputs were considered in the development of the Steering Committee approved recommendations. FPC does not anticipate reevaluation except as needed to support resolution of the approved recommendations. FPC and BAWOG have evaluated Staff feedback provided in the SER and Supplemental SER for SPIP.