Florida Power
CORPORATION

December 22, 1989
3F1289-13

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

Subject: Crystal River Unit 3
Docket No. 50-302
Operating License No. DPR-72
EDG Upgrade Program

Dear Sir:

As discussed in a phone conversation on Monday, December 18, and in response to a letter from the staff dated September 25, 1989, Florida Power Corporation (FPC) is providing additional information regarding the scope of diesel generator post-maintenance testing, and the need for a General Design Criterion (GDC) exemption to remove missile shields to complete pre-outage work. Attachment 1 provides details regarding the post-maintenance test program. Attachment 2 provides details regarding the current schedule information.

The success of Refuel 7 will be dependent on careful integration of replacement of the station 1E batteries, addition of a second dedicated offsite power source, and emergency diesel generator related tasks, with more than 200 other significant safety and non-safety related outage tasks. Originally, planning for Refuel 7 included the modification of both emergency diesel generators (EDG-A and EDG-B). Post-modification testing was to be based upon applicable Technical Specification surveillance requirements and the manufacturer's recommendations based on their detailed knowledge of the modification scope and their interpretation of IEEE 387-1984. Subsequently, significant issues related to the station batteries and offsite power supply were identified. These issues were previously committed to be corrected during Refuel 7 and the 1991 mid-cycle outage, respectively. Also, your staff has recommended substantial increases to the scope of post-modification testing of the diesel generators. In addition, FPC

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has decided, from the standpoint of overall safety and reliability of the plant, to move forward to Refuel 7 the efforts and commitments to complete the new dedicated offsite power supply.

As a result of these changes in the Refuel 7 scope, FPC has advised you of our plans to extend the committed schedule for completion of modifications of EDG-B to Refuel 8. Significant Refuel 7 schedule extension to complete the second diesel is unwarranted since no safety or compliance issues are involved. Pre-outage work on both EDG-A and EDG-B will be completed, however, to support the earliest possible completion of EDG-B, including the possibility of completing this work in Refuel 7. Early in the refueling outage, FPC will measure the power needed to operate the major loads on EDG-B. Should this process reveal information which calls into question the adequacy of the existing ratings, a plan will be devised to resolve the issue prior to restart from the outage.

To preserve a "two diesel" outage as an option, the exemption requested in our letter of December 12, 1989, must be issued and pre-outage work must begin on EDG-B on January 15, 1990. Single diesel schedules have also been reviewed and the work scope still requires an exemption by February 15, 1990 to support pre-outage work. Most, if not all the work, would still have to be done in series. If the pre-outage activities are moved into the outage window, EDG-A would constrain most "B" train work until the full scope is completed, including necessary testing. Duration of the EDG-A work is estimated to be 55 to 60 days. Thus, the "B" train work would extend the current 77 day outage to well over 90 days.

The cooperation which will be required to meet this ambitious schedule is appreciated. The needed staff actions will be facilitated by FPC in any way possible.

Sincerely,

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

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Attachments

ATTACHMENT 1

EDG TESTING POSITION

Background

In a letter dated August 11, 1989, Florida Power Corporation (FPC) provided answers to NRC questions regarding the Emergency Diesel Generator Upgrade Program for Crystal River 3 (CR-3). This included responses to questions regarding the post-modification requalification testing program. As discussed with the staff, this program was based on the manufacturers knowledge of the EDG modification scope and consideration of IEEE 387-1984.

In a September 25, 1989 letter, the staff responded to the planned test program. The staff took the position that the scope of the modifications planned invalidated the qualification of the diesels, and thus, preoperational testing consistent with Regulatory Guides 1.9, Revision 2 and 1.108 should be performed. Neither of these guidance documents are part of the CR-3 licensing basis. No applicable guidance which determines the difference between modification to a qualified diesel and modification which would invalidate its qualification has been identified. Nevertheless, FPC required the manufacturer to review IEEE 387 (regardless of its applicability from a licensing viewpoint) to determine an appropriate testing requirement. The results of this review was provided to the staff in our letter dated August 11, 1989.

The staff's proposed test program has been reconsidered and this attachment documents FPC's response. In formulating this response, the NRC request and the merits of performing additional testing have been carefully considered. Specifically with regard to Test 8, Reliability Tests, an attempt has been made to satisfy the NRC position on the performance of 30 starts per machine. Completion of the testing program as recommended by the Staff on both diesel generators would have a significant impact on the outage schedule.

Disposition of NRC Positions

The following tests already were or will become a part of the FPC test program as requested:

Test 1	Start and Load-Run Test;
Test 2	Fast-Start Test;
Test 3	Combined Safety Injection Actuation Signal (SIAS) and Loss of Offsite Power (LOOP) Test;
Test 4	Single Load Rejection Test;
Test 5	Full-Load Rejection Test; and
Test 7	Hot Restart Test.

Test 6, Endurance and Margin Test, will be completed as described except that voltage and frequency cannot be monitored exactly as described. The design of the CR-3 electrical system does not allow loading of the diesel to pre-specified loads in a LOOP configuration (i.e., not connected to the offsite grid). Therefore, while voltage and frequency will be monitored, they will be significantly influenced by the offsite grid. The voltage and frequency monitoring done during the load rejection tests will serve to assure these parameters are being properly controlled.

Test 8, Reliability Tests, will be completed with the following clarifications.

1. Following modification, FPC will demonstrate through a minimum of 30 valid start/load tests without failure on the "A" emergency diesel generator unit that an acceptable level of reliability has been achieved. To the extent they are the starting and loading performed as part of the manufacturer recommended or surveillance testing will be counted toward the 30 start test.

2. FPC considers the testing program recommended by the diesel manufacturer to demonstrate adequately OPERABILITY. Consequently, the diesels will be considered OPERABLE for plant operation in Modes 4 through 6 following successful completion of the manufacturer's testing program. While the reliability testing is being performed, the diesel may be under manual control and may not start immediately following a loss of offsite power. However, in Modes 4, 5, and 6, time is available following a loss of off-site power to start manually a diesel generator and to restore power to decay heat removal systems.

3. On EDG-B, FPC will perform the manufacturer's recommended test program and applicable surveillance procedures. Reliability testing will be performed to the extent that can be accommodated without adversely impacting outage duration.

ATTACHMENT 2

DIESEL GENERATOR MODIFICATION AND REFUELING SCHEDULE

The attached chart illustrates the current schedule for key milestones associated with accomplishing both EDG's in Refuel 7. As noted in the cover letter, FPC will pursue both diesels only if they can be accomplished within the other constraints dictating the outage schedule. The sequence is summarized as follows:

(1) EDG-B pre-outage scope begins no later than January 15, 1990 and proceeds until approximately February 15. The pre-outage scope includes rigging in and at least temporarily locating the ventilation and lube oil cooler components in the HVAC portion of the diesel compartment. This is contingent on the GDC-2 exemption being granted.

(2) EDG-A pre-outage scope begins approximately February 15 and continues into the outage scheduled to begin March 14, 1990. This too, is contingent upon the GDC-2 exemption.

(3) EDG-A is removed from service on March 13 by entering the Action Statement before the unit is taken off line.

(4) EDG-B is removed from service upon completion of defueling. A temporary power source, supporting essential equipment, will be provided if "A" train (diesel and equipment) are not yet returned to service.

(5) EDG-A will be considered OPERABLE for operation in Modes 4, 5, and 6 upon completion of the manufacturer's recommended test program and applicable surveillance requirements. This allows refueling to begin on a schedule to support Reactor Coolant System return-to-service milestones.

(6) EDG-A reliability testing will be completed prior to entering Mode 3.

(7) EDG-B modification, manufacturer's recommended testing, and required surveillance testing will be completed prior to entering Mode 4.

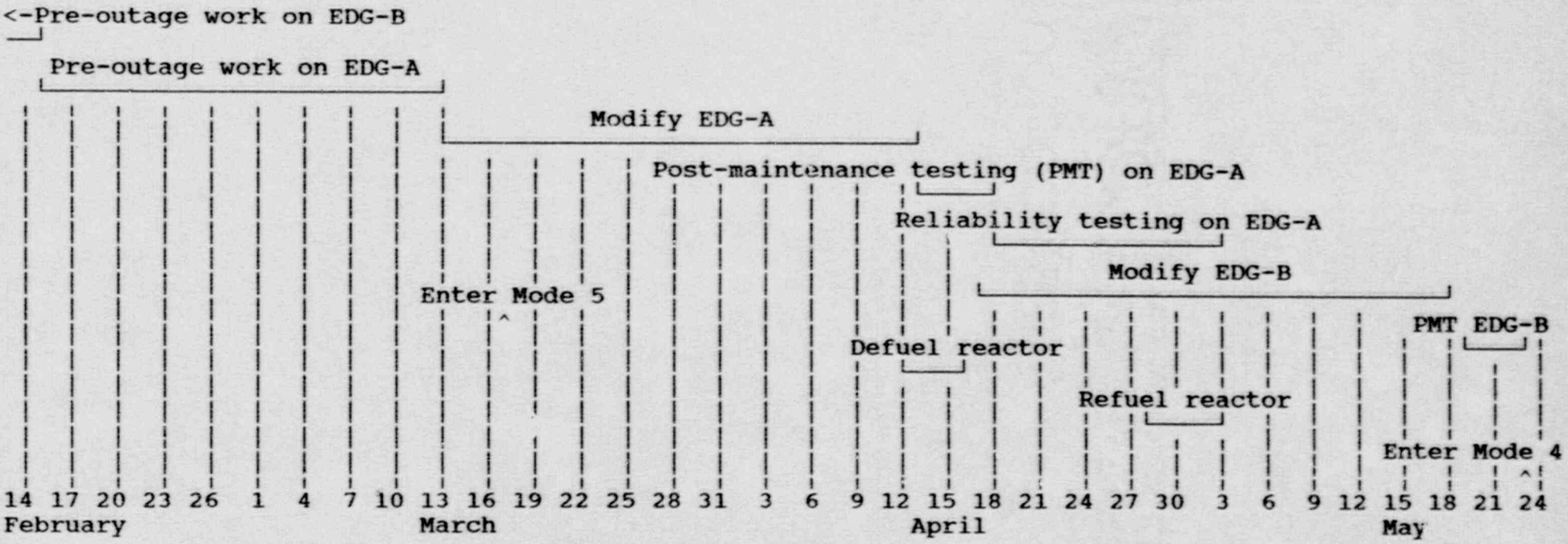
(8) EDG-B reliability testing will be performed, to the extent possible, during Mode ascension.

If the staff were not to grant a GDC-2 exemption, the EDG-A scope would begin as noted in (3) above. The duration of this activity is approximately 55 to 60 days. The "pre-outage" and "outage" scopes cannot proceed in parallel principally due to physical interference and the prohibition of fire and debris inducing activities (cutting, grinding, welding, etc.) during engine teardown and cleanup. Completion of this would constrain beginning the "B" train outage scope work. As noted in the cover letter, this would extend the schedule from the current estimate of 77 days to well over 90.

Attachment 2

ATTACHMENT 2 (CONTINUED)

DIESEL GENERATOR MODIFICATION AND REFUELING SCHEDULE



Pre Outage Duration	20 - 30 days each
Engine Duration	25 - 30 days each
Manufacturers Test	5 days each
Reliability Testing	15 days