



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

Enclosure 2

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

TEMPORARY EXEMPTION FROM THE REQUIREMENTS OF GDC-2

FOR TORNADO MISSILE PROTECTION OF THE EMERGENCY

DIESEL GENERATORS

CRYSTAL RIVER UNIT NO. 3 NUCLEAR GENERATING PLANT

DOCKET NO. 50-302

INTRODUCTION

By letter dated December 12, 1989, as supplemented on December 22, 1989, Florida Power Corporation (FPC, or the licensee) requested a temporary exemption from the requirements of General Design Criterion (GDC) 2 with regard to tornado missile protection of the two emergency diesel generators (EDGs) at Crystal River Unit 3. The EDGs provide the source of power to redundant safety-related equipment for safe shutdown of the reactor in the event of an accident accompanied by a loss of offsite power. The licensee plans to implement highly desirable upgrades to the EDGs during the next refueling outage (Refuel 7). The exemption is necessary because the existing missile shields (steel enclosures) which cover the exterior openings at the south end of the emergency diesel generator building must be removed while the plant is still in power operation in order to permit completion of these modifications without extending the duration of Refuel 7 excessively. EDG "A" upgrades will definitely be completed and every effort will be made to complete the EDG "B" upgrades prior to restart from Refuel 7. The EDG modifications include the installation of new large lube oil coolers and air filters which are required as part of the emergency diesel generator load-uprating program for improved onsite emergency AC power reliability, which has been previously reviewed and approved by the staff. The requested temporary exemption is to be effective from January 15, 1990 until the start of Refuel 7, currently scheduled for March 14, 1990. The steel enclosures will be replaced prior to startup from the Refuel 7 outage.

EVALUATION

The planned EDG upgrades are highly desirable and will significantly enhance the overall safety of the plant. The licensee has estimated that without the requested exemption, the complete upgrade of both EDGs would extend the outage from the planned 77 days to about 121 days. Even if only the preparatory work is completed on EDG "B", which would facilitate completion of the upgrade during the next outage opportunity, the Refuel 7 outage would extend from the planned 77 days to 101 days without the requested exemption.

Even with the removal of the steel enclosures, an existing concrete wall behind the opening will provide protection against tornado missiles. Further, no direct path to a diesel generator for missile travel exists even with the enclosures removed. Missile protection provided by the EDG building on the roof and other three sides remains unchanged. The steel enclosures will be removed from only one diesel generator at a time. In addition, replacement of the steel enclosures will be initiated in the event of issuance of a tornado watch for the plant site. As a further compensating measure, the licensee has stated that objects in the immediate area of the EDG building which could become potentially damaging missiles in a tornado will be removed to reduce the missile hazard.

Based on the above considerations and compensatory measures, the staff finds that the likelihood of unacceptable damage to the EDGs due to tornado missiles during the proposed exemption period is acceptable low.

#### CONCLUSION

Based upon its evaluation of the licensee's application, staff concludes that the small likelihood of any tornado missile damage to the EDGs for the time span in question, coupled with the significant safety benefits attendant to the EDG upgrades, justifies the granting of the requested temporary exemption so as to eliminate the need to significantly extend the Refuel 7 outage. The staff further concludes that there is reasonable assurance that operation of Crystal River Unit 3 under the proposed exemption will present no undue risk to the public health and safety.

Dated: January 12, 1990

#### Principal Contributors:

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