



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 153 TO FACILITY OPERATING LICENSE NO. DPR-72
FLORIDA POWER CORPORATION, ET AL.
CRYSTAL RIVER UNIT NO. 3 NUCLEAR GENERATING PLANT
DOCKET NO. 50-302

1.0 INTRODUCTION

By letter dated November 3, 1995, Florida Power Corporation (FPC) submitted a request to amend the technical specifications for Crystal River Nuclear Plant, Unit 3. The proposed amendment requested a one-time technical specification change to defer the inspection of flywheels in reactor coolant pump (RCP) motors from refueling outage 10 scheduled for the spring of 1996 to refueling outage 11 scheduled for the spring of 1998.

Technical Specification 5.6.2.8.c requires that RCP motor flywheels be inspected in accordance with Regulatory Guide (RG) 1.14, Revision 1. RG 1.14 recommends ultrasonic volumetric examination and surface examination for the RCP flywheel. For the ultrasonic examination, Regulatory Position C.4.b.1 in RG 1.14 specifies "an in-place ultrasonic volumetric examination of the areas of high stress concentration at the bore and keyway at approximately 3-year intervals, during the refueling or maintenance shutdown coinciding with the inservice inspection schedule as required by Section XI of the ASME Code."

For the surface examination, Regulatory Position C.4.b.2 specifies "a surface examination and complete ultrasonic volumetric examination at approximately 10-year intervals, during the plant shutdown coinciding with the inservice inspection schedule as required by Section XI of the ASME Code."

2.0 EVALUATION

There are four RCPs (1A, 1B, 1C, and 1D) at Crystal River Unit 3. FPC has performed six volumetric inspections of the RCP flywheels using the ultrasonic examination method in 1976, 1978, 1981, 1987, 1992, and 1994. All four RCP flywheels were examined during each scheduled inspection. Each inspection covered not only the high stress areas of the bore and keyway of flywheels but 100 percent volume of the flywheels except in the 1981 inspection. During the 1981 inspection, only 75 percent of the flywheel volume of the "C" motor flywheel was inspected. All six inspections showed no recordable indications.

FPC failed to perform the surface examination recommended in RG 1.14 during the first 10-year inservice inspection. It concluded that the failures were attributable to cognitive personnel error for failure to perform the required examination, to establish and document an alternative examination, or to

secure relief from the requirement. FPC submitted License Event Report 94-005-00 on October 28, 1994, documenting its evaluation and corrective actions.

Although FPC did not perform a complete surface examination, the RCP vendor did perform a limited surface examination for information purposes during the refurbishment of RCP motors in 1989 and 1990. While the pump motors were disassembled during the refurbishment, dye penetrant examinations were performed in April 1989 for RCPs 1A, 1B, and 1C and in May 1990 for RCPs 1B, 1C, and 1D. The examinations included surface areas of the flywheel near the bore and around the keyways. The limited surface examinations show no recordable indications.

FPC stated that on the basis of operational experience of Crystal River Unit 3 and industry, the flywheels have demonstrated a low probability of failure. A review of industry information through the Babcock & Wilcox Owners Group, Westinghouse Owners Group and the Nuclear Plant Reliability Data System revealed that no critical flaws had been identified in RCP flywheels and no RCP flywheel failures had been reported.

The flywheel failure analysis in the final safety evaluation report for Crystal River Unit 3 showed that flywheel failures would result in limited consequences and that the consequences of a flywheel's inability to perform its coastdown function were acceptable in terms of safety of the general public.

On the basis of the favorable results from previous volumetric examinations and the low probability of flywheel failure based on industry records, the staff determined that the proposed inspection deferment for one operating cycle would not affect the structural integrity of the flywheels or increase the failure probability of the flywheels significantly.

The staff concludes that the flywheel inspection at Crystal River Unit 3 may be deferred one operating cycle from refueling outage 10 scheduled for the spring of 1996 to refueling outage 11 scheduled for the spring of 1998. FPC may incorporate the proposed one-time change into the technical specifications for Crystal River Unit 3.

3.0 STATE CONSULTATION

Based upon the written notice of the proposed amendment, the Florida State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation

exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (60 FR 65679). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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Date: February 15, 1996