



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 30 10

FACILITY OPERATING LICENSE NO. NPF-38

LOUISIANA POWER AND LIGHT COMPANY

WATERFORD STEAM ELECTRIC STATION, UNIT 3

DOCKET NO. 50-382

1.0 INTRODUCTION

By application dated October 27, 1987, Louisiana Power and Light Company (LP&L or the licensee) requested changes to the Technical Specifications (Appendix A to Facility Operating License No. NPF-38) for Waterford Steam Electric Station, Unit 3. The proposed change would revise the inspection interval for low pressure turbine heavy disc rotors to 60 operating months.

2.0 DISCUSSION

The change proposed by the licensee would revise Technical Specification Surveillance Requirement 4.3.4.2e to distinguish between the present "light" low pressure turbine disc inspection interval, which would remain at 40 months, and the "heavy" low pressure turbine disc inspection interval, which would be extended to 60 months.

In addition, the Surveillance Requirement would be clarified to encompass only the inspection interval time periods during which the installed discs are operating.

3.0 EVALUATION

The licensee has replaced one low pressure turbine rotor (and plans to replace the second and third rotors, shortly) with a new Westinghouse disc design. The new design is more massive than the previous design and is therefore referred to as a "heavy" disc.

Westinghouse developed the heavy disc rotor to reduce disc susceptibility to stress corrosion-induced cracking. The heavy disc mass reduces applied bore stresses while the disc material has a lower yield strength than the light disc material, leading to slower crack propagation. By removing the disc keyway, a major crack source has been eliminated.

Westinghouse has certified to the licensee that a 60-month heavy disc inspection interval will ensure that stress corrosion cracking is

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identified prior to a crack exceeding 50% of the critical crack size. Certification is based on an analysis utilizing the methodology contained in Westinghouse Memorandum MSTG-1-P, June 1981. This methodology, approved by the NRC staff in an SER dated August 2, 1981, combines a linear elastic fracture mechanics approach to calculate critical crack size with a conservative crack growth model.

The Technical Specification change proposed by the licensee is based on approved methodology and will provide adequate notice of a significant reduction in structural integrity of heavy low pressure turbine discs. The proposed Technical Specification change is, therefore, acceptable.

4.0 CONTACT WITH STATE OFFICIAL

The NRC staff has advised the Administrator, Nuclear Energy Division, Office of Environmental Affairs, State of Louisiana of the proposed determination of no significant hazards consideration. No comments were received.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment involves a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or in a surveillance requirement. The 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 exposures. 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. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Section 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.

6.0 CONCLUSION

Based upon its evaluation of the proposed changes to the Waterford 3 Technical Specifications, the staff has concluded that: there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and such activities will be conducted in compliance with the Commission's regulations, and the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public. The staff, therefore, concludes that the proposed changes are acceptable, and are hereby incorporated into the Waterford 3 Technical Specifications.

Dated: February 23, 1988

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