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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 17

TO FACILITY OPERATING LICENSE NO. NPF-16

FLORIDA POWER & LIGHT COMPANY, ET AL.

ST. LUCIE PLANT, UNIT NO. 2

DOCKET NO. 50-389

INTRODUCTION

By letter dated November 7, 1986, (L-86-444), Florida Power and Light Company (FP&L), the licensee, requested a change to the St. Lucie Unit 2 Technical Specifications to discontinue the use of nuclear flux peaking augmentation factors. These factors were originally developed to provide margin for possible increased flux peaks which could result from the formation of interpellet gaps in the fuel pellet column and the subsequent local creepdown of the fuel cladding. The elimination of these augmentation factors would modify part 4.2.1.4 of the Linear Heat Rate (LHR) Technical Specification and delete Figure 4.2.1, which specifies the value of the augmentation factor versus height in the core.

EVALUATION

A report entitled "Evaluation of Interpellet Gap Formation and Clad Collapse in Modern PWR Fuel Rods", (EPRI NP-3966-CCM), was submitted to the staff during the review of the Calvert Cliffs Unit 1 Cycle 8 license application. The report presented an analysis performed by Combustion Engineering (CE) for Electric Power Research Institute (EPRI) and gave the results of a review of interpellet gap formation, ovality, creepdown and clad collapse data in modern PWR fuel rods (non-densifying fuel in pre-pressurized tubes). The report concluded that since the increased power peaking associated with the small interpellet gaps found in these rods is insignificant compared to other power distribution uncertainties used in the safety analyses, augmentation factors can be removed from the reload of any reactor loaded exclusively with this type of fuel. The staff accepted this conclusion for the Cycle 8 reload review of Calvert Cliffs Unit 1 and the Cycle 3 reload review of San Onofre Unit 2 and agrees that the conclusion is also valid for St. Lucie Unit 2 since the same manufacturing process is used in the Calvert Cliffs, San Onofre and St. Lucie fuel. The densification augmentation factors can, therefore, be eliminated for St. Lucie Unit 2.

The staff has reviewed the FP&L request to remove the nuclear flux peaking augmentation factors from the St. Lucie Unit 2 Technical Specifications. Since the manufacturing process for the fuel rods used in Unit 2 is the same as that which was used in the fuel rods for which CE previously had demonstrated the formation of insignificant interpellet gaps, the request is acceptable. The safety analyses for St. Lucie Unit 2 have been performed in a manner such that the removal of the augmentation factors will not cause any of the results to exceed design acceptance criteria.

ENVIRONMENTAL CONSIDERATION

This 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 a change in surveillance requirements. 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 exposure. The Commission has previously published 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 §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.

CONCLUSION

We have 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, and (2) 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.

Date: March 5, 1987

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