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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 118 TO FACILITY OPERATING LICENSE NO. DPR-46

NEBRASKA PUBLIC POWER DISTRICT

COOPER NUCLEAR STATION

DOCKET NO. 50-298

1.0 INTRODUCTION

The Cooper Nuclear Station Technical Specifications presently limit the facility to the use of specified fuel and control blade designs. By letter dated December 14, 1987 the Nebraska Public Power District (the licensee) requested an amendment to Facility Operating License No. DPR-46 for the Cooper Nuclear Station. The proposed amendment would change the Technical Specifications to permit installation of new design (Lead Test Assembly or "LTA") fuel assemblies and control blades.

2.0 DISCUSSION

Nuclear fuel vendors, as part of the continuing process of improving their products, subject new design fuel assemblies and control blades to actual commercial service conditions. This is done after the materials have been evaluated to the extent practicable by other means (i.e. test reactor or Naval reactor service) and prior to submittal of a licensing topical report for the new design. Since the vendors do not possess power reactors of their own, the service condition experience is gained in cooperation with operating power reactor licensees. During the forthcoming reload in preparation for Cycle 12 operation, the Cooper Nuclear Station (CNS) licensee, in cooperation with the General Electric Co., plans to install four fuel assembly and two LTA control blades in the CNS core. Each LTA control blade will contain a limited number of (1) Rare Earth Oxide (REO) absorber rods and (2) boron carbide absorber rods clad with RADRESIST alloys. One blade will be irradiated for two cycles of operation, the other for four cycles. The control blade LTA's have been analyzed and verified by tests to be mechanically acceptable. A reactivity evaluation was performed by the vendor using the model described in "NEDO 22290 GE Hybrid I Control Rod Assembly, September 1983". The fuel assembly LTA's are similar to standard P8x8R fuel except for an interactive channel with less Zircaloy, and a lower tie plate that will offset the bundle 40 mils toward the control blade. They have been analyzed using the approved methods of "General Electric Standard Application for Reactor Fuel" NEDE-24011-P-A-8 and NEDE-24011-P-A-8-US, May 1986. Based on the vendor's 10 CFR 50.59 evaluations, the fuel assembly and control blade LTA's are acceptable for installation in Cooper.

LTA programs such as the above are encouraged by the staff because of their general benefits in safety and operational flexibility. LTAs are

inserted into reactors to confirm expected operation and have a low probability of abnormal behavior. In addition, the number of LTAs installed in a core at one time is numerically small. In a letter from T. Ippolito to R. Engel dated September 23, 1981, the staff advised the General Electric Co. that as long as analyses were performed using approved methods and acceptance criteria it would be assumed that use of LTAs involves no unresolved safety question.

The licensee's amendment application proposed a requirement for prior NRC approval of LTA installations. However, based on the determination cited in the above referenced Ippolito letter (that the use of properly analyzed LTA's involves no unresolved safety question), the staff has determined that prior NRC approval is not required. The staff informed the licensee of its desire to amend Technical Specification 5.2.C so as to only require prior NRC notification and the licensee agreed to the change. This change simply reflects the NRC's regulations governing the procedure for modifying design features not specified in the Technical Specifications and does not change the substance of the proposed amendment.

The proposed amendment, as revised by the staff, and agreed to by the licensee, will enable the licensee to implement LTA programs in a method acceptable to the NRC and consistent with 10 CFR 50.59. It is therefore acceptable.

3.0 ENVIRONMENTAL CONSIDERATIONS

This 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 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. 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.

4.0 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: April 1, 1988

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