



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 40 TO FACILITY OPERATING LICENSE NO. NPF-58

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY, ET AL.

PERRY NUCLEAR POWER PLANT, UNIT NO. 1

DOCKET NO. 50-440

1.0 INTRODUCTION

By letter dated December 18, 1991, the Cleveland Electric Illuminating Company (the licensee) requested an amendment to Facility Operating License No. NPF-58 for the Perry Nuclear Power Plant, Unit 1. The proposed amendment would revise Technical Specification (TS) 5.3.2 - Control Rod Assemblies - to provide a more general design description, thereby allowing the licensee to install control rods of newer design that have been reviewed and approved for use by the NRC staff on a generic basis.

2.0 EVALUATION

The proposed changes to TS 5.3.2 would allow the use of hafnium metal and/or boron carbide powder as the neutron absorbing control material(s) in the control rod assemblies. The current wording allows only boron carbide powder. In addition, a nominal absorber length of 143.7 inches is specified versus the current statement that implies that every individual tube will contain that same length of absorber material (some designs approved by the staff include tubes in a given control rod that do not contain the absorber material for their full length). Finally, the specific reference to the cruciform stainless steel sheath would be deleted, as not all of the currently approved control rod designs include a sheath.

The licensee intends to install several control rods containing hafnium during the upcoming third refueling outage. The use of hafnium does not significantly change the neutronic or mechanical characteristics of the control rods, and more recent designs have many advantages. These advantages include increased neutron absorbing material for longer life, improved resistance to intergranular stress corrosion cracking, and a reduction in the amount of radioactive cobalt released into plant piping systems. The proposed changes will not affect the existing requirement to have 177 cruciform-shaped control rods installed, nor the existing requirements for control rod scram insertion times and operability. The control rods to be installed will be of a type previously approved by the NRC staff and will be physically compatible with the existing rod design. The new design will be properly reflected in

the licensee's reload analysis, which is performed using an NRC-approved methodology, and the existing margins of safety will be preserved and verified by the licensee in accordance with the 10 CFR 50.59 review process.

Based on the above discussion, the staff finds the proposed changes to TS 5.3.2 to be acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Ohio State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change to a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or a change to 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 exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding (57 FR 2601). Accordingly, this 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 this amendment.

5.0 CONCLUSION

The staff 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 this 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: March 11, 1992