

UNITED STATES NUCLEAR REGULATORY COMMISSION WASHINGTON D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION RELATED TO AMENDMENT NO. 173 TO FACILITY OPERATING LICENSE NO. NPF-3

TOLEDO EDISON COMPANY

CENTERIOR SERVICE COMPANY

AND

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

DAVIS-BESSE NUCLEAR POWER STATION, UNIT NO. 1

DOCKET NO. 50-346

1.0 INTRODUCTION

By letter dated April 30, 1992, Toledo Edison Company requested a revision to the Technical Specifications for the Davis-Besse Nuclear Power Station. The proposed change would revise Technical Specification (TS) 5.3.2, "Reactor Core - Control Rods," to allow the use of extended life control rods, and allow the use of different Inconel absorber material for the axial power shaping rods.

2.0 EVALUATION

There are small differences between the new extended life cont: I rods (ELCRAs) and the standard Mark-B control rods. The neutron absorber in the ELCRAs has a slightly smaller diameter than that for the standard design, which is offset by a longer absorber length. The resulting worth for the ELCRA design is equal to that of the standard design at the beginning of the cycle and is slightly greater at the end of cycle. Rod worths are calculated for each fuel cycle using NRC-approved computer codes to ensure that they are acceptable for that cycle.

The external dimensions of the ELCRAs are effectively identical to the Mark-B design even though the ELCRAs are clad with Inconel rather than with stainless steel. Calculations have been performed to show that mechanical design and thermal hydraulic characteristics are acceptable. Also, the ELCRAs weigh the same as the Mark-B control rod assemblies. Therefore, the conincl rod drop times of the ELCRAs should be unaffected. Technical Specification surveillance testing, required prior to startup, will verify the rod drop times.

The use of ELCRAs was approved for the Crystal River Unit No. 3 Nuclear Generating Plant by license Amendment No. 103 issued on December 14, 1987. The TS wording requested by Davis-Besse is essentially identical to that approved for Crystal River. Therefore, based on the above, the NRC staff finds that the use of ELCRAs at Davis-Besse is acceptable.

The proposed change for the axial power shaping rods (APSRs) would change the requirement for the absorber material from Inconel-600 to Inconel. This change has also previously been approved for Crystal River. Normal design controls, the reload report safety evaluation corresponding to the first use of a different absorber material, and the TS requirement for axial power imbalance to be within the limits of the CORE CPERATING LIMITS REPORT, will sufficiently control the use of a different Inconel absorber material for the APSRs. Therefore, based on the above, the NRC staff finds this charge 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. 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 32578). 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

On the basis of the considerations discussed above, the staif concludes 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: September 22, 1992