



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 control rods (ELCRAs) and the standard Mark-B control rods. The neutron absorber in the ELCRA 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 control 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.

