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JAN 6 1977

MEMORANDUM FOR: K. K. Goller, Assistant Director for OR, DOR
 FROM: D. Eisenhut, Assistant Director for OT, DOR
 SUBJECT: OCONEE, UNITS 1, 2 AND 3 - REVIEW OF PRESSURE-TEMPERATURE OPERATING LIMITS, TAR ORB-1-195

Plant Name: Oconee, Units 1, 2 and 3
 Docket Numbers: 50-269/270/287
 Responsible Branch and Project Manager: ORB1, J. Neighbors
 Requested Completion Date: December 30, 1976
 Technical Review Branch: Engineering Branch
 Review Status: Complete

In letter dated October 1, 1975, Duke Power Company submitted a proposed amendment to Technical Specification 3.1.2, "Pressurization, Heatup and Cooldown Limitations," for Oconee, Units 1, 2 and 3. The revised pressure-temperature operating limits were based on data from capsule OC1-F. This data is reported in BAW-1421 Rev. 1 dated September 1975.

Capsule OC1-F contained specimens from base, HAZ and correlation material (heat A119501) and received a fluence of 8.3×10^{17} n/cm². Specimens of base material were machined in both the transverse and longitudinal directions. The upper shelf Charpy energy of irradiated base metal specimens (transverse direction) is 114 ft-lbs.

We have reviewed BAW-1421, Rev. 1 and the proposed pressure-temperature operating limits. The data presented in BAW-1421 are of very little value since the fluence was low and there were no weld specimens in the capsule. A second capsule was pulled from Oconee, Unit 1 in 1976 and its specimens have been tested. This capsule contained weld specimens and will provide more pertinent data than the first capsule. We should receive the report on this capsule in early 1977.

The pressure-temperature operating limit curves, Figs. 3.1.2-1A, 3.1.2-2A and 3.1.2-3, for Oconee, Unit 1 were calculated for operation through 5EFPY. In view of the limited data available on Oconee, Unit 1 vessel welds, we recommend that the proposed limits be effective through 4 EFPY in lieu of 5 EFPY. This recommendation is based on predicted adjustments to reference temperature obtained from Regulatory Guide 1.99. The pressure-temperature operating limit curves, Figs. 3.1.2-1B, 3.1.2-2B and 3.1.2-3, for Oconee, Units 2 and 3, were calculated for operation up to a fluence of 1.7×10^{18} n/cm². These curves are acceptable except that Fig. 3.1.2-1B should be modified to include a criticality limit similar to that in Fig. 3.1.2-1A.

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For all three units, a criticality specification should be added to Specification 3.1.2.1. Acceptable wording for this specification is:

"When the core is critical (except for low power physics tests) the vessel temperature shall be no less than the temperature indicated on the criticality curve in Fig. 3.1.2-1A."

Except for the above two discrepancies the proposed Technical Specification 3.1.2 conforms to Appendix G, 10 CFR Part 50 and is acceptable. The use of Appendix G in establishing safe operating limitations will ensure adequate safety margins during operation, testing, maintenance and postulated accident conditions and constitute an acceptable basis for satisfying the requirements of NRC General Design Criterion 31, Appendix A, 10 CFR 50.

D. G. Eisenhut, Assistant Director
for Operational Technology
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