



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO THE REVISED CORE OPERATING LIMITS REPORT

TENNESSEE VALLEY AUTHORITY

WATTS BAR NUCLEAR PLANT, UNIT 1

DOCKET NUMBER 50-390

1.0 INTRODUCTION

By letter dated October 12, 1995, Tennessee Valley Authority (TVA, the applicant) provided a revised Core Operating Limits Report (COLR) for Watts Bar Nuclear Plant, Unit 1 (WBN1), Cycle 1. The revised COLR changes the section numbering to coincide with the Unit 1 Technical Specifications (TS), corrects a typographical error, and adopts the INCORE computer code (INCORE 3D, Version 7.4.2) for determination of the specific burnup values of the factor $W(Z)$ used in the determination of Heat Flux Hot Channel Factor, $F_q(Z)$.

2.0 EVALUATION

The revised COLR is addressed below.

(1) New numbering of the TS

This conforms to new numbering referenced in the Unit 1 Technical Specifications (TS 5.9.5 rather than the old TS 5.9.1.6).

(2) Correction of a typographical error

Correction for a typographical error is made for nuclear enthalpy rise hot channel factor ($F_{\Delta H}^N$).

(3) $W(Z)$ calculational procedure

This cycle-specific parameter $W(Z)$ is used in the determination of the heat flux hot channel factor, $F_q(Z)$, as stated in an NRC-approved methodology (WCAP-10216-P-A). Six $W(Z)$ data sets corresponding to six burnup rates are provided by Westinghouse. To determine $W(Z)$ based on these six given data sets, TVA uses a linear extrapolation of the $W(Z)$ state points before beginning of life (BOL) and after end of life (EOL), and continuously uses three point interpolation of the $W(Z)$ statepoints between BOL and EOL. This calculation is stated in the INCORE computer code (INCORE 3D, Version 7.4.2). This method for $W(Z)$ calculation based on given $W(Z)$ data sets is acceptable, since it only reflects a calculational procedure based on given data.

Based on the results of its review, the staff has found that Items (1) and (2) are acceptable since these changes are administrative in nature, and Item (3) is acceptable since it is a calculational procedure based on given data.

3.0 CONCLUSIONS

The staff has reviewed the revised COLR provided by Tennessee Valley Authority for the Watts Bar Nuclear Plant, Unit 1, Cycle 1. Based on the review, the staff concludes that the revised COLR is acceptable.

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