



Westinghouse
Electric Corporation

Water Reactor
Divisions

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NS-NRC-86-3096
January 13, 1986

Herbert N. Berkow, Director
Standardization and Special Projects Directorate
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUBJECT: Submittal of Westinghouse Topical, WCAP-10951, "WESTAR: An Advanced Three-Dimensional Program for Thermal Hydraulic Analysis of Light Water Reactor Cores", for Review and Approval

REFERENCES: 1. Chelemer, H., Chu, P. T. and Hochreiter, L. E., "THINC IV -- An Approved Program for Thermal-Hydraulic Analysis of Rod Bundle Core", WCAP-7956
2. Bordelon, F. M. et al, "Westinghouse Reload Safety Evaluation Methodology", WCAP-9272-P-A

ATTENTION: Carl Berlinger, Reactor Systems Branch Chief
Division of PWR Licensing - A

Harold Bernard, Projects Manager
Division of PWR Licensing - B

Dear Mr. Berkow:

Enclosed are:

1. Twenty-three (23) copies of the topical report, "WESTAR: An Advanced Three-Dimensional Program for Thermal Hydraulic Analysis of Light Water Reactors Cores", WCAP-10951 (Proprietary).
2. One (1) copy of an Application for Withholding Proprietary Information from Public Disclosure (Non-Proprietary).

The WESTAR code was introduced to members of the NRC Core Performance Branch in a meeting in August of 1985.

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Mr. H. N. Berkow
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The enclosed topical has been submitted to augment the thermal and hydraulic methods in the THINC IV code, Reference 1, and the methodology approved in the Westinghouse Reload Methodology Topical, Reference 2. Our primary objective is not to replace the current thermal and hydraulic methodology but rather to augment our present analytical capabilities. An additional objective is to demonstrate the equivalent nature of the current THINC methodology and the WESTAR solutions.

The WESTAR code will be used as required to provide thermal solutions to core performance situations involving high quality steam and/or significant cross flows. Westinghouse desires to be in a position to utilize the WESTAR code, if conventional modeling techniques are not applicable. Justification for use of the code is provided in the topical by data comparisons qualifying the WESTAR code to predict bundle velocity and enthalpy distributions, vapor generation, and flow redistribution due to flow blockage.

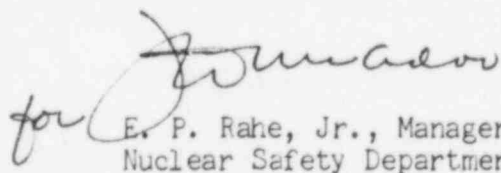
In accordance with the impact statement given in the staff SER on WCAP-9272 (Reference 2), the WESTAR methodology does not result in any significant change in DNBR compared to the current Westinghouse technology. In addition, the qualification data presented in this topical has demonstrated that WESTAR is a very capable analytical tool which can be used to perform thermal and hydraulic evaluations of Light Water Reactors covering a broad range of thermal conditions.

It is requested that a timely review in 1986 be performed by the staff on this topical so that Westinghouse can extend their analytical capabilities as the need arises.

The enclosed material is submitted for your information and is to be treated as proprietary information of Westinghouse Electric Corporation. The information will be separately resubmitted in whole in conformance with the requirements of 10CFR2.790 should it be employed as part of a license application or other action identified in 10CFR2.790(a).

Correspondence with respect to the application for withholding should reference AW-86-006, and should be addressed to R. A. Wiesemann, Manager of Regulatory and Legislative Affairs, Westinghouse Electric Corporation, P.O. Box 355, Pittsburgh, Pennsylvania 15230.

Very truly yours,


for E. P. Rahe, Jr., Manager
Nuclear Safety Department

WMS/kk
Enclosures