

February 4, 1997

Stephen M. Sohinki, Director  
Office of Commercial Light  
Water Reactor Production  
Defense Programs  
Department of Energy  
Washington, DC 20585

SUBJECT: BENCHMARKING THE VIPRE CODE TO VALIDATE THE IMPLEMENTATION AND USER  
APPLICATION OF CHANGES TO ACCOMMODATE THE USE OF LITHIUM BURNABLE  
POISON RODS FOR THE PRODUCTION OF TRITIUM

Dear Mr. Sohinki:

In the January 22, 1997, public meeting at NRC headquarters in Rockville, Maryland, the staff informed DOE that the VIPRE code needed to be benchmarked for its specific use. The staff also committed to determine whether examples of the benchmarking of the VIPRE code and/or other requirements for the use of the VIPRE code were readily available. DOE and has proposed using a modified version of the NRC-approved core design methodology, PHOENIX-P, to perform the reload core analysis with tritium producing burnable poison rod lead test assemblies. This version will be called PHOENIX-L. During discussions at the meeting, the staff indicated that the differences between the NRC-approved code, PHOENIX-P, and the modified code, PHOENIX-L, will need to be documented by the vendor, Westinghouse. Enclosure 1 contains the summary and conclusions of the staff's original safety evaluation of "VIPRE-01: A Thermal-Hydraulic Analysis Code for Reactor Cores, EPRI NP-2511-CCM," transmitted by letter dated May 31, 1986. Enclosure 2 contains the staff's subsequent safety evaluation of VIPRE-01, EPRI NP-2511-CCM, Revision 3, dated October 30, 1993. These safety evaluations provide the conditions for acceptable use of the VIPRE-01 computer code for PWR licensing calculations. Guidance on benchmarking methodologies is also included.

If you have any questions regarding this information, please contact the project manager, J. H. Wilson, at (301) 415-1108.

Sincerely,  
Original signed by:  
David Matthews for:  
Thomas I. Martin, Director  
Division of Reactor Program Management  
Office of Nuclear Reactor Regulation

Project No. 697

Enclosures: as stated

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

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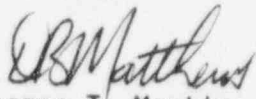
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*for*   
Thomas T. Martin, Director  
Division of Reactor Program Management  
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cc: see next page

Project No. 697  
DOE Tritium Program

cc:

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