



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

November 15, 1995

Mr. Nicholas J. Liparulo  
Nuclear Safety and Regulatory Activities  
Westinghouse Electric Corporation  
P.O. Box 355  
Pittsburgh, Pennsylvania 15230

SUBJECT: FOLLOWON QUESTIONS CONCERNING MAAP4 ANALYSIS OF AP600 PRA SUCCESS  
CRITERIA USED TO SUPPORT THE THERMAL-HYDRAULIC RELIABILITY REVIEW

Dear Mr. Liparulo:

As a result of its review of the June 1992 application for design certification of the AP600, the staff has determined that it needs additional information in order to complete its review. The enclosed questions relate to two preliminary MAAP4 analyses supporting success criteria for manual ADS actuation with full depressurization. These MAAP4 runs were discussed during a September 12 through 14, 1995, meeting with Westinghouse on thermal-hydraulic reliability issues. The MAAP4 runs were labeled X4J and M5F3. The staff requests that run M5F3 be revised and rerun assuming 2 out of 4 stage 4 ADS lines are utilized. In addition, the staff requests detailed output data from the X4J and revised M5F3 runs.

You have requested that portions of the information submitted in the June 1992 application for design certification be exempt from mandatory public disclosure. While the staff has not completed its review of your request in accordance with the requirements of 10 CFR 2.790, that portion of the submitted information is being withheld from public disclosure pending the staff's final determination. The staff concludes that these followon questions do not contain those portions of the information for which exemption is sought. However, the staff will withhold this letter from public disclosure for 30 calendar days from the date of this letter to allow Westinghouse the opportunity to verify the staff's conclusions. If, after that time, you do not request that all or portions of the information in the enclosures be withheld from public disclosure in accordance with 10 CFR 2.790, this letter will be placed in the NRC Public Document Room.

These followon questions affect nine or fewer respondents, and therefore is not subject to review by the Office of Management and Budget under P.L. 96 511.

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Mr. Nicholas J. Liparulo

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November 15, 1995

If you have any questions regarding this matter, you may contact me at (301) 415-1141.

Sincerely,

original signed by:

William C. Huffman, Project Manager  
Standardization Project Directorate  
Division of Reactor Program Management  
Office of Nuclear Reactor Regulation

Docket No. 52-003

Enclosure:  
As stated

cc w/enclosure:  
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Mr. Nicholas J. Liparulo  
Westinghouse Electric Corporation

Docket No. 52-003  
AP600

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Enclosure to be distributed to the following addressees after the result of the proprietary evaluation is received from Westinghouse:

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**REQUEST FOR ADDITIONAL INFORMATION  
ON MAAP4 RUN X4J AND A REVISED RUN OF M5F3**

As a part of the staff's efforts on the benchmarking and auditing of the MAAP4 calculations, and the quantification of passive system thermal-hydraulic uncertainties, we would like to have the detailed results of two specific MAAP4 calculations; (a) Run X4J and, (b) a slightly revised version of Run M5F3 (i.e., instead of manual actuation of 1 stage 4 ADS, assume depressurization with 2 stage-4 ADS lines). Specifically:

Run X4J:

A 4.75-inch hot leg break (intermediate LOCA) with failures of the CMTs and containment isolation. The RCS depressurization is also provided by manual actuation of 2 stage-4 ADS lines (i.e., revised ADQ). The safety injection is from 2 accumulators, and 1 line of IRWST.

Revised Run M5F3:

A 4-inch DVI line break with failures of the intact-line CMT and containment isolation. The RCS depressurization is also provided by manual actuation of 2 stage-4 ADS lines (i.e., revised ADQ, different from the original Run M5F3 where only 1 stage-4 ADS line was considered). The safety injection is through the accumulator and the IRWST line connected to the intact DVI line.

QUESTIONS

492.6 For each of these two runs, please provide the MAAP4 results including a summary of sequence of events and the following time-dependent plots:

- Decay heat
- pressurizer and RCS pressures
- Containment pressure
- Break liquid and vapor flowrates
- ADS liquid and vapor flow rates
- Accumulator flow rate
- IRWST flow rate
- RCS inventory
- Core mixture and collapsed liquid levels
- Peak fuel centerline and cladding temperatures

492.7 The staff assumes that the initial and boundary conditions, and various system actuation setpoints remain the same as those described in the April 18, 1995, letter (NTD-NRC-95-4440), and the radial and axial power shape and peaking factors remain the same as those described in the MAAP4 parameter files. If there is any change in the MAAP4 inputs, please identify the differences.

Enclosure