



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

May 16, 1997

Mr. Nicholas J. Liparulo, Manager
Nuclear Safety and Regulatory Analysis
Nuclear and Advanced Technology Division
Westinghouse Electric Corporation
P.O. Box 355
Pittsburgh, PA 15230

SUBJECT: AP600 CONTAINMENT PRESSURE ANALYSIS REQUESTS FOR ADDITIONAL INFORMATION (RAI)

Dear Mr. Liparulo:

In support of the AP600 design certification review, the Nuclear Regulatory Commission (NRC) staff is evaluating the Westinghouse containment analysis in Section 6.2 of the AP600 Standard Safety Analysis Report. Based on its review of the containment subcompartment pressurization analysis and minimum containment backpressure analysis, the staff requests additional information. The RAI are provided in an enclosure to this letter.

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.

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A PDR

Mr. Nicholas J. Liparulo

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May 16, 1997

If you have any questions regarding this matter, you can 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:
See next page

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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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AP600 STANDARD SAFETY ANALYSIS REPORT (SSAR) SECTION 6.2
REQUESTS FOR ADDITIONAL INFORMATION

Questions 480.1042 through 480.1045 apply to the Containment Subcompartment
Pressurization Analysis

- 480.1042 Besides those subcompartments listed in SSAR Section 6.2.1.2, were any other subcompartments analyzed? In particular, the staff has identified from drawings the reactor coolant drain tank room, the RHR valve room, and containment isolation valve areas. Do these, or any other compartments, need to be analyzed? Please justify your response.
- 480.1043 In the equilibrium flow model used to calculate the vent flow, was an "equilibrium" or "frozen" model used. Please provide any clarifying details.
- 480.1044 Explain the difference between the "modified" Zaloudek coefficient and the Zaloudek coefficient the staff is familiar with. What are the modifications, and how is the coefficient different from the "unmodified" Zaloudek coefficient? Justify use of the modified coefficient, and discuss any impact of the modifications on the calculated pressures.
- 480.1045 Section 3.6.1.2 of SSAR Rev. 7 states that the loads for the reactor vessel annulus asymmetric compartment pressurization analysis are based on a 5 gpm leakage crack in the primary system piping. However, this analysis is not discussed in Section 6.2.1.2 of the SSAR, "Containment Subcompartments." Please submit details on the analysis that was conducted to determine the reactor vessel cavity asymmetric pressurization loads (at a minimum, include those details considered in the analyses conducted for the other containment subcompartments).

Question 480.1046 and 480.1049 apply to the Minimum Containment Pressure
Analysis for Performance Capability Studies of ECCS

- 480.1046 Was the mixing of subcooled ECCS water with steam in the containment atmosphere modeled in accordance with Branch Technical Position (BTP) CSB 6-1? That is, was it assumed that the subcooled ECCS water and steam in the atmosphere mixed, and thus helped minimize the containment pressure? If not, provide justification for deviation from this aspect BTP CSB 6-1?
- 480.1047 What backpressure is credited for the ECCS/LOCA analysis? Table 15.6.5-5 of SSAR Revision 12, dated April 30, 1997, says only that a "lower bound" pressure was used.
- 480.1048 Is the mass and energy release used in the minimum containment backpressure analysis the same as that used in the WCOBRA/TRAC ECCS LOCA analysis described in WCAP-14171?

Enclosure

480.1049 Was the containment recirculation cooling system assumed to be operating in the containment minimum backpressure analysis conducted to assess the ECCS performance capability? If so, then provide details on the assumptions (e.g., fan speed, number of units operating, chilled water temperature and flow assumed and rationale for these values).

If the units were not assumed to be operating, then provide the rationale for this assumption. Provide justification that the assumptions used in the current SSAR minimum backpressure analysis bound any cases where the recirculation cooling system would be assumed to be operating in accordance with Branch Technical Position (BTP) CSB 6-1 (i.e., with maximum flow and minimum chilled water temperature).