



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

April 29, 1994

Docket No. 52-003

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

Dear Mr. Liparulo:

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION ON THE AP600

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 additional information is needed in the area of instrumentation and controls (Q420.124). Enclosed is the staff's question. Please respond to this request by June 30, 1994 to support the staff's review of the AP600 design.

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 this request for additional information does 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's Public Document Room.

This request for additional information affects 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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*The number in parentheses designates the tracking number assigned to the question.

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Mr. Nicholas Liparulo

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April 29, 1994

This request for additional information affects nine or fewer respondents, and therefore, is not subject to review by the Office of Management and Budget under P.L. 96-511.

If you have any questions regarding this matter, you can contact me at (301) 504-1120.

Sincerely,

(Original signed by)

Thomas J. Kenyon, Project Manager
Standardization Project Directorate
Associate Director for Advanced Reactors
and License Renewal
Office of Nuclear Reactor Regulation

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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REQUEST FOR ADDITIONAL INFORMATION
ON THE WESTINGHOUSE AP600 DESIGN

420.124 WCAP-13633, "AP600 Instrumentation and Control Defense-in-Depth and Diversity Report," Appendix A, contains a brief description of the Diverse Actuation System (DAS). Pages B-48 through B-56 of Appendix B of that document show block diagrams of the DAS that include inputs and outputs only. Provide the following information to assist the staff in understanding how and what the DAS does:

- a. The block diagram shows redundant processors with an AND gate at their output. This means that no action will be taken unless both processors are operational. It is inferred that use of the AND gate is to prevent spurious actuation of DAS, but this also makes DAS less reliable in its protection function. Justify this design and identify the proposed technical specifications regarding surveillance, maintenance strategy, bypass of inoperable processor, bypass of inoperable sensors, etc.
- b. Describe the logic performed by the DAS processors. For example, four pressurizer levels and two steam generator levels from each of the steam generators are input for the reactor trip function. Discuss the logic performed on these signals to generate the trip function. This should be done for each function included in the WCAP-13792, "AP600 System/Event Operation Matrix."
- c. Westinghouse has indicated that not all Chapter 15 events are mitigated by DAS. Justify why some events are included and some are not. Appendix A states that the selection was based on the PRA, but no detail is given. Provide the selection criteria.
- d. Appendix A.1 states that "Capability is provided for testing and calibrating the channels of the diverse actuation system." Describe the testing and calibration scheme for the DAS.
- e. Appendix A.4 states that "The Diverse Actuation System shares certain sensor signals with the Protection and Safety Monitoring System and the Plant Control System." Describe which signals are shared and which signals are separate from safety systems.

Enclosure