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

May 23, 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 compressed and instrument air systems (Q410.152-Q410.162).* Enclosed are the staff's questions. Please respond to this request by June 30, 1994 to support the staff's review of the AP600 design.

In addition, by letter dated June 26, 1992, Westinghouse submitted a proprietary and nonproprietary version of the AP600 standard safety analysis report (SSAR). The application requested that the proprietary version be withheld from public disclosure pursuant to 10 CFR Section 2.790. An application and an affidavit dated June 26, 1992, from Westinghouse, the owner of the information, was included. The affidavit states that the release of the document would result in substantial harm to Westinghouse's competitive position if it were to be made available for public review.

While the staff has not completed its review of your request in accordance with the requirements of 10 CFR 2.790, the staff, in consultation with our Office of General Counsel, has determined that the affidavit has provided an insufficient basis for withholding the information identified in Q410.162 from public disclosure. The staff does not believe that disclosure of this information to the public would cause substantial harm to the competitive position of Westinghouse. Also, the identified information is of a type that is found in other SARs. Furthermore, the right of the public to know about these matters outweighs any concern for the protection of the competitive position of Westinghouse. Therefore, we have concluded that those portions of the document that are identified in Q410.162 are not proprietary. Due to our determination, we request that you amend the appropriate sections of the SSAR.

In accordance with the requirements of 10 CFR 2.790, the proprietary portion of the submitted information is being withheld from public disclosure pending the staff's final determination. The staff concludes that other than the issues discussed above, this request for additional information does not contain those portions of the information for which exemption is sought.

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*The numbers in parentheses designate the tracking numbers assigned to the questions.

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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.

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

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AP600

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REQUEST FOR ADDITIONAL INFORMATION
ON THE WESTINGHOUSE AP600 DESIGN

COMPRESSED AND INSTRUMENT AIR SYSTEMS

410.152 Provide the rational for why the compressed and instrument air systems (CAS) design in Section 9.3.1 of the SSAR differs from Section 7 of Chapter 9 of the EPRI Utility Requirements Document (Volume III), which specifies that the CAS will consist of three separate and isolated subsystems: the plant service air system, the instrument air system, and the breathing air system?

410.153 Section 9.3.1 of the SSAR states that (a) the compressed and instrument air systems are free of all corrosive contaminants and hazardous gases, flammable or toxic, which may be drawn into the airstream and (b) the breathing air subsystem is free of radioactive contamination (See Information Notice 85-06). How will this be accomplished? Are the compressor intakes located in an area free of corrosive contaminants and hazardous gasses? Will regular periodic checks be made to assure high quality air?

410.154 Revise Section 9.3.1 of the SSAR to address the following:

a. Provide a list of the building(s) in which the major components of the compressed and instrument air systems are located.

b. Provide the minimum particle size that the compressor intake filter is designed to remove.

c. State whether each individual air compressor is designed for 100% capacity.

d. Provide a more detailed list of the instrumentation and controls that are provided in the main control room.

e. Provide information about (1) sample lines and valves for obtaining air samples and (2) a periodic air quality sampling program.

f. Provide information regarding the air quality of the breathing air subsystem. Does the air quality meet ANSI/CGA G-7.1 requirements?

g. State how the compressed and instrument air system complies with Generic Issue 43 (Including Generic Letter 88-14 and NUREG-1275).

410.155 Appendix C22 of the PRA contains additional information than that which is found in Section 9.3.1 of the SSAR. Revise the SSAR to incorporate the following information from the PRA:

a. Table C22-8 discusses three separate pressure transmitters, one per compressor, that are internal to the compressors and measure discharge header pressure.

b. Section C22.2.2 discusses a low pressure signal, from a pressure transmitter on the common line downstream of the three air compressor trains, that provides the signal to auto actuate the standby compressors.

c. Section C22.6.1 states that the air receivers are large enough to provide sufficient air at the proper pressure to maintain the operation of the valves in a loss of offsite power event until the air compressors are sequenced on the DG's.

410.156 Section 9.3.1.1.2 of the SSAR indicates that the CAS provides ". . . essentially oil-free air for pneumatic instruments" while Section 3.1.2.2 discusses "The three oil-free rotary compressors . . ." If the air compressors are not truly oil-free, then what is the maximum total oil or hydrocarbon content, excluding the non-condensables?

410.157 The information contained in Table 9.3.1-1 of the SSAR is incomplete. Provide the following additional information in Table 9.3.1-1: a brief description, the function, and the normal and fail-safe positions of each safety-related pneumatically operated valve.

410.158 Why does Figure 9.3.1-1 (Sheet 2 of 2) of the SSAR show (a) the instrument air dryers (1A and 1B) and (b) the breathing air emergency backup bottles with a dotted line? Does this mean they are not part of the system?

410.159 Revise Section 9.3.1.2.2 of the SSAR to provide the following information:

a. Because Section 9.3.1.2.2 addresses the quality of air in the compressed and instrument air system, the staff believes that it is more appropriate to reference ANSI/ISA-S7.3-1975 (R1981) on air quality instead of Regulatory Guide (RG) 1.68.3 (testing) in the last sentence in the second paragraph. Therefore, modify this sentence to state that "The test performance criteria shall be -28°F dewpoint at line pressure in accordance with ANSI/ISA-S7.3-1975 (R1981)."

b. Because Section 9.3.1.2.2 addresses the quality of air in the compressed and instrument air system, the staff believes that it is more appropriate to reference ANSI/ISA-S7.3-1975 (R1981) on air quality instead of Section 9.3.1 of the standard review plan in the last sentence in the third paragraph. Therefore, modify this sentence to state that "The afterfilters are a disposable cartridge filter capable of removing 98 percent of one micron and larger particulates and 100 percent of three micron and larger particulates in accordance with ANSI/ISA-S7.3-1975 (R1981)."

c. Provide a commitment to NUREG-1275 regarding air quality for the compressed and instrument air system by stating that the air quality (-28°F dewpoint and particulates $\leq$ 3 microns) meets the

manufacturer's air supply requirements for all pneumatic equipment that is either safety-related or relied upon to perform a safety function.

410 160 Section 9.3.1.3 of the SSAR describes the use of safety-grade air accumulators or other devices to provide short-term operation of the safety-related pneumatic valves following loss of air.

a. Explain what are the "other devices."

b. Provide a list of all of the safety-related pneumatically operated valves (required to change valve position to achieve safe shutdown and accident mitigation) that are furnished with safety-related backup air accumulators and/or other devices.

c. How will the adequacy and reliability of the safety-related backup accumulators and or other devices be ensured? NUREG-1275, Vol. 2 recommends (1) periodic testing of safety-grade backup accumulator check valves for leakage; (2) monitoring and/or alarming accumulator pressure; and (3) verifying the adequacy of safety-related accumulators.

410.161 Because Section 9.3.1.4 of the SSAR addresses the testing of the compressed and instrument air system, the staff believes that it is more appropriate to reference RG 1.68.3 instead of ANSI/ISA-S7.3-1975 (R1981) on air quality in the third paragraph of the section. Therefore, modify the paragraph to state that "During the initial plant testing prior to reactor startup . . . upon a complete and sudden loss, a gradual loss, and an increase of compressed air pressure as described in RG 1.68.3." This information should also be provided in Section 14 of the SSAR.

410.162 Section 6.3.2.2.7.6 of the proprietary version of the SSAR discusses the use of backup safety-related air accumulators for the fourth stage ADS valves. Much of this type of information is typically found in non-proprietary versions of other SARs. Therefore, revise the SSAR to address and incorporate the following:

a. Include the information provided in the proprietary version of Section 6.3.2.2.7.6, regarding the backup safety-related air accumulators for the fourth stage ADS valves, in the text of the non-proprietary version of the SSAR.

b. Include these backup safety-related accumulators in a non-proprietary figure.

c. Revise the SSAR to include information about (1) leak testing the accumulators, (2) seismic qualification of the accumulators, (3) the ability of the accumulators to open the valves against maximum containment pressure, (4) the capacity of the accumulators, and (5) testing of the accumulators in accordance to RG 1.68.3.

d. IE Bulletin 80-01 concerns the operability of the pneumatic supply for ADS valves for licensees of GE BWR facilities. However, the bulletin may be relevant to the AP600 design regarding the use of backup safety-related air accumulators. Do the AP600 backup safety-related air accumulators conform with IE Bulletin No. 80-01?