

January 29, 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: ADDITIONAL COMMENTS ON THE AP600 TECHNICAL SPECIFICATIONS (TS)

Dear Mr. Liparulo:

The U.S. Nuclear Regulatory Commission is reviewing the AP600 technical specifications (08/96-Amendment 0) which were included with Revision 9 to the AP600 standard safety analysis report. In a letter to Westinghouse dated December 24, 1996, the staff provided initial comments on the AP600 TS with a note that the review was not yet complete and additional comments could be expected. The Emergency Protection and Radiation Protection Branch and the Electrical Engineering Branch have now completed their preliminary reviews of the AP600 TS and their comments are enclosed with this letter.

As stated in our previous letter, the review of the AP600 technical specifications is not yet complete and additional comments may result as the review is completed. We suggest that Westinghouse provide a draft markup of AP600 TS where it concludes that changes to TS based on the staff's comments are appropriate. Westinghouse should provide written explanation to the staff for those comments that it will not incorporate into the TS. We also request that these comments be included in the open item tracking system so that the status and disposition of these items can be tracked.

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

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Mr. Nicholas J. Liparulo
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Docket No. 52-003
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EMERGENCY PREPAREDNESS AND RADIATION PROTECTION BRANCH
COMMENTS CONCERNING
WESTINGHOUSE AP600 TECHNICAL SPECIFICATIONS

(1) Section 1.1, Definition, DOSE EQUIVALENT XE-133

Add a sentence at the end of paragraph "The dose conversion factors used for this calculation shall be those listed in ICRP Publication 30, Limits for Intake of Radionuclides by Workers, 1978-1981."

(2) Section B 3.4.8, RCS Operational Leakage, APPLICABLE SAFETY ANALYSES

Revise last sentence to read "~~The dose consequences resulting from the accidents are reported in Reference 3. The design basis radiological consequences resulting from a postulated SLB accident and SGTR at the exclusion area and low population zone boundaries and radiation exposure to control room operator are provided in Sections 15.1.5 and 15.6.3 of Chapter 15 of the AP600 SSAR, respectively.~~"

(3) Section B 3.4.11, RCS Specific Activity, BACKGROUND

Third Paragraph

Revise third paragraph to read "... offsite and control room operator doses due to postulated design basis accidents..."

Fifth Paragraph

Revise fifth paragraph to read "... the offsite and control room operator doses..."

Seventh paragraph

Revise seventh paragraph to read "... site boundary and control room operator doses..."

(4) Section 3.6.9, Ph Adjustment, SR 3.6.9.1

Add a bracket around 145 ft³ of TSP to indicate that this number is subject to the final resolution of source term related issues

Add a new surveillance requirement as SR 3.6.9.2 "Replace the entire amount of TSP in the baskets." Add a frequency requirement as (120 months).

Enclosure

(5) Section B 3.6.9, Ph Adjustment, BACKGROUND, Second Paragraph

Add a clause to read "Chemical addition is necessary to counter the effects of the boric acid contained in the safety injection supplies and nitric and hydrochloric acids produced by radiolysis and pyrolysis of electric cable insulation."

(6) Section B 3.7.4, Secondary Specific Activity, APPLICABLE SAFETY ANALYSES

Revise the last sentence to read "The accident analysis, based on this and other assumptions, shows that the radiological consequences of the SLB do not exceed the Unit EAB limits a postulated SLB at the exclusion area and low population zone boundaries are within the acceptance criteria in SRP Section 15.1.5, Appendix A and within the exposure guideline values of 10 CFR Part 50.34."

(6) Section B 3.7.5, Spent Fuel Pool Water Level, APPLICABLE SAFETY ANALYSES

Revise second sentence of first paragraph "The resultant 2-hour dose per person at the exclusion area boundary is an acceptable fraction of the dose acceptance criteria. The design basis radiological consequences resulting from a postulated fuel handling accident at the exclusion area and low population zone boundaries and radiation exposure to control room operator are within the dose values provided in Section 15.7.4 of Chapter 15 of the AP600 SSAR."

(7) Section 5.5.9, Containment Leakage Rate Testing Program

Delete the bracket around the maximum allowable primary containment leak rate number. This leak rate, in conjunction with offsite and control room air intake relative concentrations, is used for the AP600 design basis radiological consequences assessments.

ELECTRICAL ENGINEERING BRANCH
COMMENTS CONCERNING
WESTINGHOUSE AP600 TECHNICAL SPECIFICATIONS

Section 3.8 ELECTRICAL POWER SYSTEMS

3.8.1 DC Sources - Operating

ACTIONS A.1

Completion Time of 72 hours to "Restore dc electrical power subsystem to operable status" is not in accordance with NUREG-1431, "Standard Technical Specifications - Westinghouse Plants." The STS specifies completion time of 2 hours.

Westinghouse states in the Background Section that with passive/fail-safe design, the risk associated with the loss of one Class 1E dc subsystem is similar to the loss of one ac supply for a conventional unit. The 72-hour completion time is reasonable based on engineering judgement balancing the risks of operation without one dc subsystem against the risk of forced shutdown.

The staff has evaluated this response and concluded the following:

A conventional unit has redundant Class 1E emergency diesel generators and at least two offsite power sources to the onsite Class 1E distribution system to support the Completion Time of 72 hours cited by Westinghouse. The only Class 1E power for the AP600 design are the dc system and the vital (UPS) ac system. Therefore, the comparison to conventional ac power sources does not provide a basis to support the much longer Completion Time.

3.8.3 Inverters - Operating

ACTIONS A.1

The completion time of 168 hours to "Restore inverter to operable status" is not in accordance with NUREG-1431, "Standard Technical Specifications - Westinghouse Plants." The STS specifies a completion time of 24 hours.

Westinghouse states in the Background Section that the 168-hour time limit is based upon engineering judgement, taking into consideration the time required to repair an and the additional risk to which the unit is exposed because of the inverter inoperability.

The staff has evaluated this response and concluded that Westinghouse has not provided enough added justification to increase the Completion Time from 24 hours to 168 hours for the AP600 design. The bases provided by Westinghouse appears to be no different from that for conventional plants.

3.8.5

Distribution Systems - Operating

ACTIONS A.1

The completion time of 72 hours and the completion time of 144 hours from discovery of failure to meet the LCO to "Restore ac instrument and control bus to operable status" is not in accordance with NUREG-1431, "Standard Technical Specifications - Westinghouse Plants." The STS specifies a completion time of 8 hours and a completion time of 16 hours from discovery of failure to meet the LCO, to restore ac instrument and control bus to operable status.

Westinghouse states in the Background Section that with passive/fail-safe design, the risk associated with the loss of one Class 1E ac instrument and control bus is similar to the loss of one ac supply for a conventional unit. The 72-hour completion time is reasonable based on engineering judgement balancing the risks of operation without one ac instrument and control bus against the risk of forced shutdown.

The staff has evaluated this response and concluded the following:

A conventional unit has redundant Class 1E emergency diesel generators and at least two offsite power sources to the onsite Class 1E distribution system to support the Completion Time of 72 hours cited by Westinghouse. The only Class 1E power for the AP600 design are the dc system and the vital (UPS) ac system. Therefore, the comparison to conventional ac power sources does not provide a basis to support the much longer Completion Time.

ACTIONS B.1

The completion time of 72 hours and the completion time of 144 hours from discovery of failure to meet the LCO to "restore dc electrical power distribution subsystem to operable status" is not in accordance with NUREG-1431, "Standard Technical Specifications - Westinghouse Plants." The STS specifies a completion time of 2 hours and a completion time of 16 hours from discovery of failure to meet the LCO, to restore dc electrical power distribution subsystem to operable status.

Westinghouse states in the Background Section that with passive/fail-safe design, the risk associated with the loss of one Division is similar to the loss of one ac supply for a conventional unit. The 72-hour completion time is reasonable based on engineering judgement balancing the risks of operation without one ac instrument and control bus against the risk of forced shutdown.

The staff has evaluated this response and concluded the following:

A conventional unit has redundant Class 1E emergency diesel generators and at least two offsite power sources to the onsite Class 1E distribution system to support the Completion Time of 72 hours cited by Westinghouse. The only Class 1E power for the AP600 design are the dc system and the vital (UPS) ac system. Therefore, the comparison to conventional ac power sources does not provide a basis to support the much longer Completion Time.

3.8.7

Battery Cell Parameters

ACTIONS A.1

A completion time of 8 hours to "Verify pilot electrolyte level and float voltage meet Table 3.8.7-1 Category C limits" is not in accordance with NUREG-1431, "Standard Technical Specifications - Westinghouse Plants." The STS specifies a completion time of 1 hour.

Westinghouse states in the Background Section that 8 hours provide time to inspect the electrolyte level and to confirm the float voltage of the pilot cells. Eight hours is considered a reasonable amount of time to perform the required verification.

The staff has evaluated this response and concluded that Westinghouse has not provided enough basis to increase the completion time from 1 hour to 8 hours.

The staff has evaluated this response and concluded that Westinghouse has not provided enough basis to increase the completion time from 1 hour to 8 hours.