

August 22, 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: FOLLOWON QUESTIONS REGARDING THE AP600 INSPECTIONS, TESTS, ANALYSES,
AND ACCEPTANCE CRITERIA (ITAAC)

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. Specifically, the enclosure to this letter contains requests for additional information concerning Revision 3 of the AP600 Certified Design Material including the ITAAC.

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 Nuclear Regulatory Commission Public Document Room.

If you have any questions regarding this matter, you may contact me at (301) 415-1132.

Sincerely,

original signed by:

Joseph M. Sebrosky, Project Manager
Standardization Project Directorate
Division of Reactor Program Management
Office of Nuclear Reactor Regulation

Docket No. 52-603

Enclosure: As stated

cc w/encl: 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 (RAI) for the AP600 ITAAC

Note: RAIs 640.64 through 640.75 are from the Civil Engineering Branch and are focused on the adequacy of the CDM in light of Westinghouse's decision to eliminate the piping Design Acceptance Criteria (DAC) and instead provide a more complete design of the AP600 piping systems. In conjunction with eliminating the piping DAC, Westinghouse proposed to relocate the Tier 1 design commitments that previously were included in a generic piping design description into each CDM piping system.

The Branch has reviewed Westinghouse's approach to relocate the piping DAC into specific systems and, in general, find it acceptable. However, we have several comments and suggestions for improving the CDM and for ensuring that the specified inspections, tests, analyses, and acceptance criteria (ITAAC) are "necessary and sufficient."

It should also be noted that the review of the structural area is not complete and the following comments do represent a complete list of the branch's concerns with the ITAAC.

640.64 2.1.1 Fuel Handling and Refueling System

Because there is no functional arrangement figure associated with this design description, it is not clear what ASME Code Section III design requirements are applicable (e.g., Subsection NB, NC, ND, NF?). The design description should specify the Subsection or ASME Code class for the system.

Note: RAIs 640.67 through 640.69 apply to section 2.1.2 Reactor Coolant System

640.65 Design Description 6.b addresses piping functional capability. The design description should be rewritten to state, "The piping is designed to withstand seismic design basis loads without a loss of its functional capability."

In Table 2.1.2-2, the column "Functional Capability Required" may be deleted and its information may be included in the SSAR only.

640.66 Design Description 6.c is a commitment that piping be constructed of the material specified. This commitment is unnecessary and may be deleted because, with the elimination of the piping DAC, it may be accomplished as an SSAR (Tier 2) commitment.

This is a generic comment that applies to the same ITAAC in other systems as well.

Enclosure

- 640.67 In Table 2.1.2-4 (and in the Design Description), Item 6.b should be combined with Item 5 (which should become 5.a) because both items concern ensuring safety functions under seismic loadings.

For 6.b (the new 5.b), change the Design Commitment to be consistent with the new Design Description. See comment 640.65 above.

Change "Inspections, Tests, and Analyses" to read, "Inspection will be performed to verify that the as-built piping meets the requirements for functional capability."

Change "Acceptance Criteria" to read, "A report exists and concludes that the as-built piping for which functional capability is required meets the requirements for functional capability."

This is a generic comment that applies to the same ITAAC in other systems as well.

- 640.68 In Table 2.1.2-4, Item 6.c required that the piping be constructed of the material specified. This ITAAC can be deleted because, with the elimination of the piping DAC, it is unnecessary and can be accomplished as an SSAR (Tier 2) commitment.

This is a generic comment that applies to the same ITAAC in other systems as well.

- 640.69 In Table 2.1.2-4, Item 12.a provides ITAAC for MOV testing. Paragraph ii) in the "Inspections, Tests, and Analyses" column should be rewritten to state, "Tests will be performed of the as-installed motor-operated valves under preoperational differential pressure, fluid flow, and temperature conditions."

Paragraph i) in the "Acceptance Criteria" column should be rewritten to state, "A test report exists and concludes that each motor-operated valve is qualified to perform its safety function as indicated in Table 2.1.2-1 under design conditions."

Paragraph ii) in the "Acceptance Criteria" column should be rewritten to state, "The as-installed motor-operated valves changes position as indicated in Table 2.1.2-1."

The above comments in 640.69 are generic comments that applies to the same ITAAC in other systems as well.

Note: RAIs 640.70 and 640.71 apply to section 2.1.3 Reactor System

- 640.70 This Tier 1 system needs a figure of the reactor vessel and major internal components described in the design description. The figure should also depict the nominal dimensions of the vessel, minimum wall thicknesses, elevation of core, and locations of major nozzles.

640.71 In the Design Description and in Table 2.1.3-2, Item 2, the Tier 1 commitment and ITAAC should apply only to ASME Code Class 1 (Subsection NB) components (not for NF or NG components).

Note: RAIs 640.72 and 640.73 apply to section 2.2.1 Containment System

640.72 In the Design Description and Table 2.2.1-3, Item 6.a, the erosion-corrosion allowance for wall thickness may be deleted because, with the elimination of the piping DAC, the design commitment is more appropriately addressed in the SSAR as a Tier 2 commitment. However, it is not clear how erosion-corrosion is addressed in the SSAR and needs further discussion.

This is a generic comment that applies to the same ITAAC in other systems as well.

640.73 In Table 2.2.1-3, Item 12.a, check valve testing is addressed in paragraph iii. The "Inspections, Tests, and Analyses" column should be rewritten to state, "Testing of check valves with active safety functions identified in Table 2.2.1-1 will be performed under system pressure, fluid flow, and temperature conditions."

The "Acceptance Criteria" column should state, "Each check valve changes position depending on the valve's safety function."

This is a generic comment that applies to the same ITAAC in other systems as well.

640.74 For the Passive Containment Cooling System Table 2.2.2-3, Item 7.a provides ITAAC for verification of Class 1E equipment. The "Inspections, Tests, and Analyse:" column should delete analyses alone as a type of qualification. The paragraph should state, "Type tests or a combination of type tests and analyses will be performed on Class 1E equipment located in a harsh environment."

This is a generic comment that applies to the same ITAAC in other systems as well.

640.75 In Section 3.2.2.5 of the SSAR, it is implied that there are some Class C (ASME Code Class 3) systems that are not required to provide a safety-related function following a seismic event. It is not clear from reviewing the AP600 Certified Design Material whether all ASME Code Class 3 piping systems are included in the CDM or only those that provide a safety-related function. Are there any ASME Code Class 3 piping systems that are not safety-related listed in the CDM or that were not included in the CDM?

- Note: RAIs 640.76 through 640.78 are preliminary comments from the Plant Systems Branch and concern insufficient detail presented in the ITAAC.
- 640.76 Figure 2.3.10-1, Liquid Radwaste System, does not include most of the major system components such as holdup tanks, ion exchangers, monitor tanks ... etc.. This is contrary to the statement in Item 1 of Section 2.3.10, "the functional arrangement of the applicable portions of the WLS is as shown in Figure 2.3.10-1". Figure 2.3.10-1 shows only liquid waste input to the system.
- 640.77 Section 2.3.11, Gaseous Radwaste System and Section 2.3.12, Solid Radwaste System do not contain a functional arrangement diagram.
- 640.78 Justify that the following systems do not have any content in ITAAC except the title: Main Turbine System, Main Steam System, Radiation Monitoring System, and Main Turbine Control and Diagnostic System.
- 640.79 The following is a miscellaneous comment from the Civil Engineering and Geoscience Branch. Design commitment number 7 in Table 3.3-5 refers to itself (i.e. 3.3.5). The staff believes the appropriate reference should be Table 3.3-4.