



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

January 26, 1995

① Copy for Dow
BCs + Ralph + Gary

② Dow

Please coordinate
our input -
consider the
need to include
severe accident issues

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MEMORANDUM TO: Brian K. Grimes, Director
Division of Project Support, NRR

Brian W. Sheron, Director
Division of Engineering, NRR

Gary M. Holahan, Director
Division of Systems Safety
and Analysis, NRR

R. Lee Spessard, Director
Division of Technical Support, NRR

Bruce A. Boger, Director
Division of Reactor Controls
and Human Factors, NRR

FROM: Dennis M. Crutchfield, Associate Director
for Advanced Reactors and License Renewal, NRR

Dennis M. Crutchfield

SUBJECT: SECY PAPER ON POLICY ISSUES PERTAINING TO THE WESTINGHOUSE
AP600 DESIGN

As discussed in the recent Associate Directorate for Advanced Reactors and License Renewal meetings with the divisions, Standardization Project Directorate (PDST) will be preparing a SECY paper on policy issues pertaining to the AP600 design. We plan to raise new policy issues to the Commission, in addition to discussing issues that may be implemented in a manner different from that of the evolutionary designs and providing the Commission with the status of select issues. We will not repeat staff positions provided in earlier papers, and for issues such as inspection, test, analysis, and acceptance criteria that are in the early stages of staff review, we will not be able develop a staff position at this time.

To ensure that all appropriate policy issues are included in the paper, I am asking that the divisions review and comment on the attached list of issues, adding and deleting issues as necessary. After your comments have been received, and a draft paper is developed, PDST will work with the divisions to ensure that the discussions of the individual issues accurately reflect the positions of the staff.

Please provide your comments to PDST by February 6, 1995. If you have any questions, contact Kris Shembarger at 415-1114.

Attachment:
As stated

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SUGGESTED ISSUES TO BE INCLUDED IN SECY PAPER ON POLICY ISSUES
PERTAINING TO THE AP600 DESIGN

Source Term

- Specific application for new source term

RTNSS

- Update of progress being made

Industry Codes & Standards

- IEEE 323-1974 vs. IEEE 323-1983
- Alternate piping criteria (Section III of ASME Code)

Leak-Before-Break

- Scope of candidate piping systems
- Relaxation of LBB design criteria

ITAAC

- Reduction in number of ITAAC
- New approach proposed by Westinghouse

Passive System Reliability

- Specific application to design

Initial Test Program

- New methods of testing due to passive design
- Testing on first AP600 plant vs. all AP600 plants

Security Plan

- Proposed plan substantially different than plans approved in the past

Technical Specifications

- Inclusion of RTNSS systems/components in Technical Specifications

AP600 Open Item Tracking System Database: Executive Summary

Date: 4/25/95

Selection: [DSER Section] like '3.11' Sorted by DSER Section

Item No.	Branch	DSER Section/ Question	Type	Title/Description	(W) Status	NRC Status	Letter No.	Date
134	NRR/SPLB	3.11	MTG-OI	M3.11-1 (EQUIPMENT QUALIFICATION) The Nuclear Regulatory Commission (NRC) staff does not agree with the assertion in the response to Q270.2 that qualification to the 1983 revision is equivalent to qualification to the 1974 revision. There are significant differences between the two versions, for example, see the staff's comment on the response to Q270.14 below (M3.11-11). Therefore, this response is unacceptable.	Resolved	Resolved		
135	NRR/SPLB	3.11	MTG-OI	M3.11-2 (EQUIPMENT QUALIFICATION) The response to Q270.3 proposed a revision to the SSAR to clarify the intent of Section 3.11.2.1. If it is the intent of Westinghouse to comply with the requirements of 10 CFR 50.49 the first sentence of the second paragraph of Subsection 3.11.2.1 should be changed and made to be consistent with the position(s) stated in 10 CFR 50.49 (f).	Resolved	Resolved		
136	NRR/SPLB	3.11	MTG-OI	M3.11-3 (EQUIPMENT QUALIFICATION) With respect to the response to Q270.4, the list of equipment in Table 3.11-1 may include all equipment to be supplied by Westinghouse, however, COL applicants will probably supplement that list in accordance with the requirement of plants at various locations. Consequently, the staff has determined that the list of equipment in Table 3.11-1 is not necessarily a complete list and therefore the SSAR should be modified to reflect the staff's concern.	Proposed	Action N		
137	NRR/SPLB	3.11	MTG-OI	M3.11-4 (EQUIPMENT QUALIFICATION) The expression "Demonstration of qualified life by test and analysis (or both) ..." provided in the response to Q270.5 is not clear. If the intent is to state that "demonstration of qualified life by test or test and analysis ..." then the intent is acceptable and the SSAR should be corrected to say this. In addition the COL Applicant should not be obligated to suppliers as implicated in the above SSAR revision, they should be able to conduct qualification test themselves if they choose to do so.	Resolved	Resolved		
138	NRR/SPLB	3.11	MTG-OI	M3.11-5 (EQUIPMENT QUALIFICATION) With respect to the response to Q270.6, the staff position is that to be in compliance with the requirements of 10 CFR 50.49, qualification must be demonstrated for equipment that has not been demonstrated to be qualified. If it can be demonstrated that any equipment (including electronic) is qualified in accordance with applicable requirements it will be found acceptable. To date, the accepted position for electronic equipment, by both industry and the NRC, is that electronic equipment that experience a total integrated radiation dose in excess of 103R is considered to be in a harsh environment. Westinghouse's position on this issue is unacceptable.	Resolved	Resolved		
139	NRR/SPLB	3.11	MTG-OI	M3.11-6 (EQUIPMENT QUALIFICATION) With respect to the response to Q270.7, as indicated above, the NRC staff does not agree that IEEE Standard 323-1974 is essentially identical to IEEE Standard 323-1983 and has not approve the use of IEEE Standard 323-1983. Therefore Westinghouse's position on this issue is unacceptable.	Resolved	Resolved		

A-10

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140	NRR/SPLB	3.11	MTG-01	M3.11-7 (EQUIPMENT QUALIFICATION) It is the NRC staff's position that review of Section 3D.4.5.4 of the SSAR requires the staff to develop it's position on the extension of the life of nuclear power plants beyond 40 years before it can address this topic in the AP600 design in a meaningful way. The staff believes that the development of it's position will conflict with the AP600 review schedule. Therefore, the staff recommends removal of this section from the AP600 design certification review.	Resolved	Resolved		
141	NRR/SPLB	3.11	MTG-01	M3.11-8 (EQUIPMENT QUALIFICATION) The staff does not agree that the discussions in Subsections 3D.4.6, 3D.4.7, and 3D.4.8 of the SSAR are consistent with NUREG-0588, RG 1.89, and past NRC positions and approvals as stated in the response to Q270.9. One of the primary reasons is that the staff has not approved the use of IEEE 323-1983 which is being used to demonstrate compliance. Further discussions between the NRC staff and Westinghouse must be conducted in order to resolve these issues.	Action W	Action W		
142	NRR/SPLB	3.11	MTG-01	M3.11-9 (EQUIPMENT QUALIFICATION) There is no evidence anywhere in industry or in NRC acceptance practice to support the position stated in the SSAR or in the response to the Q270.10 in regards to similarity between equipment from different manufacturers. Similarity between manufacturers is not arbitrarily excluded, however, the staff is simply pointing out that it has not been satisfactorily demonstrated previously in order to prevent the raising of false hopes and unnecessary expense for potential COI Applicants.	Resolved	Resolved		
143	NRR/SPLB	3.11	MTG-01	M3.11-10 (EQUIPMENT QUALIFICATION) Question 270.11 is directed at the description of normal, abnormal, and design basis event conditions as outlined in the first paragraph of Section 3D.5. For example, "Abnormal refers to the operating range in which the equipment is designed to operate for a period of time without any special calibration or maintenance effort"; this description also applies to normal and design basis event conditions, therefore, no meaningful information is provided with this statement. The staff reviewed, and generally approves of the information provided in Sections 3D.5.1, 3D.5.2 etc. However, the staff is suggesting the 3D.5 can be rewritten with more clarity.	Resolved	Resolved		
144	NRR/SPLB	3.11	MTG-01	M3.11-11 (EQUIPMENT QUALIFICATION) Considering the response to Q270.14, provide an explanation of what is meant in the expression at the beginning of the sixth paragraph on page 3D-1 that states "Safety-related electrical and mechanical equipment is typically qualified using analysis, testing, or a combination of these methods". If the response to Q270.14 accurately states the intent of the AP600 design, the SSAR should be rewritten to clarify the apparent inconsistencies between the statements on pages 3D-1, sixth paragraph, 3D-19, Section 3D.6.2, second paragraph, and 3D-69, environmental qualification data package. In addition, at the beginning of Section 3D.6 it is stated that "The recognized methods available for qualifying safety-related electrical equipment are established in IEEE 323. These are type testing, operating experience, analysis, on-going qualification, or a combination of these methods". This may be true for IEEE 323-1983, however, the requirements as outlined in 10 CFR 50.49(f) do not permit qualification by analysis alone. The SSAR should be updated to be consistent with the requirements of the Code of Federal Regulations.	Resolved	Resolved		

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2012		3.11	DSER-OISD	16. IEEE 323-1983 vs. 1974 Version for Compliance with 10CFR50.49 Westinghouse is using IEEE 323-1983 in the AP600 design instead of the 1974 version the staff endorses as the primary standard to demonstrate compliance with the requirements of 10 CFR 50.49 (EQ). There are differences between the 1974 and 1983 versions of the standard in the areas of testing, aging, margin and qualified life. The staff have reviewed the 1983 version of the standard and concluded it departs from previously approved technical positions. Acceptance of the 1984 version would affect license renewal efforts. Use of the 1983 version may be a policy matter for Commission review. (See DSER Open Item 3.11.3.2-1).	Active	Active		