



Westinghouse Electric Company
Nuclear Power Plants
P.O. Box 355
Pittsburgh, Pennsylvania 15230-0355
USA

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Direct tel: 412-374-6211
Direct fax: 412-374-6677
e-mail: cumminwe@westinghouse.com

Mr. T. R. Quay
U.S. Nuclear Regulatory Commission
Chief, Emergency Preparedness & Plant Support Branch
Division of Inspection Program Management
Office of Nuclear Reactor Regulation
Washington, D.C. 20555

Your ref: Docket No. 99900404
Our ref: DCP/NRC1653

December 3, 2003

SUBJECT: Reply to a Notice of Nonconformance from Docket No. 99900404, Report No. 03-01

REFERENCE: US NRC Letter, "NRC Inspection Report No. 99900404/03-01 and Notice of Nonconformance," from T. R. Quay to W. E. Cummins, dated November 4, 2003

This is to reply to a notice of nonconformance forwarded by the Reference. Westinghouse has taken steps to correct the nonconformance and to prevent the recurrence of the nonconformance as described in the Attachment to this letter. All actions required for resolution of this nonconformance will be complete by January 30, 2004.

If you have any questions on this reply, please do not hesitate to call me at 412-374-6211 or Mr. J. W. Winters at 412-374-5290.

Very truly yours,

W. E. Cummins /rpv
W. E. Cummins, Director
AP600 & AP1000 Projects

/Attachment

1. Westinghouse Reply to Notice of Nonconformance 99900404/03-01 issued November 4, 2003

cc: C. B. Brinkman - Westinghouse, Rockville, MD
J. Galembush - Westinghouse, Pittsburgh, PA, EC E4-07A
J. P. Segala - U.S. NRC, Rockville, MD
R. P. Vijuk - Westinghouse, Pittsburgh, PA, EC E3-08
J. W. Winters - Westinghouse, Pittsburgh, PA, EC E3-08

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December 3, 2003

Attachment 1

Westinghouse Reply to Notice of Nonconformance 99900404/03-01

Issued November 4, 2003

December 3, 2003

Attachment 1**Westinghouse Reply to
Notice of Nonconformance 99900404/03-01-01 issued November 4, 2003**

The AP1000 program has included support and technical contributions from a number of organizations currently active in nuclear power programs around the world. Westinghouse acknowledges that it did not have sufficient objective evidence of Quality Assurance evaluations performed for all of the non-Westinghouse organizations supporting the AP1000. Westinghouse believes that it is imperative to ensure that the information used to support safety related aspects of the AP1000 Design Certification comes from a source that has appropriate quality assurance processes and deliverables. As a result Westinghouse has only used information obtained from contributors that have shown their adherence to quality design and design control practices.

Prior to a contributor's participation on AP1000, Westinghouse performed a review of its participation in other nuclear quality work, such as AP600 or nuclear plant support work in their country of origin. For those contributors that participated on AP600 or the European Passive Plant (EPP) program, the quarterly approved suppliers lists for AP600 and the EPP participant qualification documentation were reviewed. For those contributors that did not participate on AP600 or EPP (MHI and Obayashi), their participation in nuclear programs throughout the world is well known. Note that most of the contributors to the AP1000 program were actively engaged before the decision to apply for a Design Certification.

Since the NRC audit of AP1000, Westinghouse has conducted and documented a review of the deliverables from all non-Westinghouse contributors to the AP1000 Design Control Document (DCD). The responsible author of each DCD chapter was asked if any information in the DCD came from a non-Westinghouse contributor and if that information was safety related. The non-Westinghouse contributors to the AP1000 program have supplied 48 documents containing safety-related information that support the DCD. These documents came from a total of 6 contributors (Ansaldo Nucleare, Chicago Bridge and Iron Company, Initec Technologia, Fortum Nuclear Services Ltd., Obayashi Corporation, and Polestar Applied Technology). Of these 6 contributors, 2 of them are on the Westinghouse Quality Suppliers List leaving 4 (Ansaldo Nucleare, Chicago Bridge and Iron Company, Fortum Nuclear Services Ltd., and Obayashi Corporation) that require additional objective evidence of our acceptance of their quality assurance program.

Westinghouse has conducted the specific evaluations identified in the Notice. The results of these evaluations and actions taken by Westinghouse are elaborated below:

- a. Westinghouse has evaluated the impact of the finding on the AP1000 Project and the adequacy of the quality assurance review process, including the integrity of the design.

Westinghouse has evaluated the impact of this finding on the AP1000 program and has determined that: (i) the AP1000 program must revise its contributor qualification program to follow the Westinghouse Level 2 procedures for those performing safety-related work, (ii) the AP1000 program must develop, document and maintain a record of its quality program evaluations for each contributor, and (iii) the AP1000 program must perform a review of the safety-related deliverables provided by contributors.

December 3, 2003

Attachment 1

- i. Westinghouse has issued a revision to its AP1000 Level 3 procedure AP-7.1 (Supplier Evaluation, Audit and Approval). This revision now requires that any independent contributor of safety-related design information to the AP1000 program must be included on the Westinghouse Quality Suppliers List in accordance with the Westinghouse Level 2 procedure WEC-6.3 (Supplier Qualification and Evaluation). To satisfy this requirement, quality audits were scheduled for all four of the safety-related contributors identified above. Two audits are complete, one is scheduled for early December 2003 and one is scheduled for January 22 and 23, 2004.
- ii. In addition to the records kept by Westinghouse for those on its Qualified Suppliers List, the AP1000 program is developing a qualification "folder" for each contributor to the AP1000 design. This folder provides and maintains objective evidence of the quality reviews and evaluations conducted by Westinghouse. It includes the basis for the Westinghouse conclusion that a contributor and the design information it supplies meet the requirements of 10CFR50, Appendix B. The Westinghouse review and conclusion will be based upon evaluation of three areas of the contributors' Quality Assurance contribution. First, how did the contributor participate in the AP600 or the European Passive Plant programs and what process was used for their Quality Assurance qualification. Second, in the interim between the effective end of the AP600 program and now, what Quality Assurance audits have been performed on the contributor by outside, independent organizations. Third, how is the contributor performing on each assignment based upon a sampling review of its deliverables. Those contributors of safety-related information for the DCD will be evaluated, audited and properly placed on the Westinghouse Quality Suppliers List in accordance with the applicable Westinghouse Level 2 procedures. Particular attention will be directed at the processes and procedures used to perform the safety-related design work used in the AP1000 DCD.

Note that each of the contributors is already an established, well-known member of the international nuclear community and historically has had a quality assurance program that meets the requirements of 10CFR50, Appendix B of equivalent. In the future, maintenance of a qualification folder for each contributor and the placement on the Westinghouse QSL for each contributor of safety-related information for the DCD will establish objective evidence of contributors' qualifications. Each "folder" will be maintained as an AP1000 technical document, with the attendant document control and archiving procedures.

- iii. A review of the 48 safety-related documents supporting the AP1000 DCD has been performed. The number and level of verification review was different for each contributor, but in all cases, the review has indicated that the technical quality of the work is acceptable to support the AP1000 DCD. The number and level of verification review was based upon the similarity and quality of work performed by the contributor for AP600, the similarity of the analysis performed to analysis for AP1000 performed by Westinghouse, NRC or others and the familiarity of the contributor with the AP1000 and its program requirements. For example, a complete technical verification review has been conducted by Westinghouse engineers for each Obayashi calculation. Conversely, a sample of Ansaldo Nucleare results were compared to results obtained by others by other methods for similar transients.

December 3, 2003

Attachment 1

In summary, Westinghouse has concluded that it is necessary to improve the process by which AP1000 contributors are evaluated and qualified. The overall technical quality of the AP1000 design or Design Certification application information is acceptable as a result of an independent Westinghouse review of the safety-related documents that support the AP1000 DCD. Westinghouse has implemented the changes necessary to its process to correct this nonconformance and prevent its recurrence.

- b. Westinghouse has determined that the requirements of 10CFR50, Appendix B and the applicable design certification provisions of 10CFR Part 52 are being satisfied for AP1000.

Although the AP1000 Level 3 program for supplier qualification was found to meet the requirements of 10CFR50, Appendix B and 10CFR52 except for the maintenance of sufficient objective evidence, it did not wholly conform to the Westinghouse Level 2 requirements. Westinghouse has now established a practice to maintain a reference "folder" containing the quality assurance qualification information for each contributor or potential contributor to the AP1000 program. Each AP1000 contributor folder contains the contributor's quality assurance program documentation. In addition, each folder contains documented evidence of the Westinghouse AP1000 evaluation of the contributor's quality assurance program, the AP1000 evaluation of other independent audits performed on the contributor by other audit organizations (for NQA-1 or ISO 9001 certification, for example), the AP1000 evaluation of previous work performed for AP600, EPP or AP1000 and the current AP1000 evaluations based upon review of current work, Westinghouse audits and other information. This folder will be used to establish and maintain objective evidence that the AP1000 Project contributors are satisfying the applicable requirements of 10CFR50 and the applicable design certification provisions of 10CFR52. Those contributors supplying safety-related information supporting the AP1000 DCD are also being added to the Westinghouse Quality Suppliers List in accordance with the Westinghouse Level 2 procedure WEC-6.3.

The AP1000 corrective action plan for this supplier qualification nonconformance is expected to be complete by January 30, 2004 with the completion of the report of the January 22 and 23, 2004 audit of the Obayashi Corporation. Westinghouse will continue to confirm the qualifications of the key contributors, as well as the integrity of the AP1000 design. The contributors that have performed safety-related Design Certification activities for AP1000 are experienced organizations in the international nuclear industry that have Quality Assurance programs in place to ensure the adequacy and integrity of their design work.