

January 9, 2003

MEMORANDUM TO: Stephen Dembek, Chief, Section 2  
Project Directorate IV  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

FROM: Meena Khanna, Project Manager, Section 2 */RA/*  
Project Directorate IV  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF DECEMBER 4, 2003, MEETING WITH  
WESTINGHOUSE ON THE MODIFICATIONS AND JUSTIFICATIONS  
FOR THE CHANGES OF THE COMMON Q SOFTWARE PROGRAM  
MANUAL (SPM)

On December 4, 2003, representatives of the Westinghouse Repair, Replacement and Automation Services (RRAS) met with the NRC staff to discuss the proposed modifications and justifications for changes to WCAP-16096-NP-A, Revision 0 (formerly CE-CES-195-NP-A, Revision 2), "Software Program Manual for Common Q Systems," based on recent customer project experience and NRC comments. It should be noted that this meeting summary includes much of the information that Westinghouse provided to the staff via its meeting minutes.

Westinghouse began the meeting by indicating that it is their intent to apply the Software Program Manual (SPM) to the design of all of its digital safety systems and that it would be revised periodically to reflect process improvements. In addition, it was stated that Westinghouse planned to submit the revised SPM for NRC staff review by mid-January. The staff has been requested to complete its review and issue a safety evaluation by May 2004. Westinghouse proposed that a meeting be held, possibly in February 2004, to address any NRC review issues at that time to facilitate the review process.

Westinghouse presented a brief history of the development and licensing of the SPM, including a general overview of the SPM structure and licensing basis. During the presentation, it was emphasized that the basic structure of the SPM will remain the same as the current NRC accepted version. The SPM consists of five distinct plans that describe process requirements for the following: software safety, software quality assurance, software verification and validation (V&V), software configuration management, and software operation and maintenance. All safety system projects will comply with these plans. Any deviations, including additions, deletions and modifications will be described and justified in the "Project Quality Plan."

A detailed description of the proposed changes that were discussed during the meeting is provided below.

### Changes Based on NRC Review and Audit Experience

Several changes to the SPM were proposed, based on the staff's review of a license amendment request (LAR) that was submitted by Arizona Public Service Company (APS) regarding changes to the technical specifications for the Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2 and 3. The LAR was submitted to support the replacement at the three units of the existing core protection calculator system (CPCS) with a Westinghouse Common Qualified Platform (Common Q) CPCS.

These changes are aimed at providing a clear definition of the responsible groups and organizational structures. A new section titled "Documentation Requirements" is being added to distinguish between the requirements for documents and the requirements for information to be included in the documents.

Also, the section that describes the traceability analysis requirements is being expanded to place more emphasis on the importance of the requirements traceability matrix (RTM). The design team will be responsible for performing the requirements traceability analysis, including preparation and updating the RTM. The V&V team will verify the adequacy and accuracy of the RTM. Westinghouse described this as the most substantive change being proposed.

### Changes Based on Customer Experience

Two changes to the SPM are being proposed based on APS feedback during the PVNGS CPCS design project. The first change provides clarification that the requirements for the hardware design process are defined in the Westinghouse Policy and Procedures Manual and that hardware design verification is performed as part of the hardware quality assurance activities that are also defined in the manual. The SPM does, however, address design and V&V activities for the hardware/software interface.

The second change in this category provides clarification that the independent managerial review required by IEEE Std 730 is the responsibility of the quality organization. The purpose of this review is to assess the execution of all of the actions and the items identified in the Software Quality Assurance Plan that is included in the SPM.

### Implementation of Internal Design Process Improvements

Numerous changes are proposed in this category including format changes to be consistent with RRAS documentation standards, modifications to align the SPM processes to the RRAS quality program requirements; and changes to reflect general design process improvements based on early experience with Common Q projects.

### Correction of Errors and Inconsistencies Discovered During Early Experience

Several examples were provided for changes in this category. These changes correct errors and inconsistencies that have been discovered during the initial experience with the SPM. No substantive changes are included in this category.

The staff requested that Westinghouse be more sensitive with respect to compliance statements to industry standards. If an SPM process is not fully compliant with a referenced standard, then phrases such as "generally consistent with" or "meets the intent of" or "with the guidance of" should be used.

The staff voiced a concern with respect to the independence of the V&V team stating that the V&V team should not report to the same manager as the design team. Westinghouse explained that the design team reports to an engineering line manager and that the V&V team reports to a different engineering line manager. Both engineering line managers report to the automation engineering director within the RRAS organization. There is both technical and budget independence. The staff stated that this is acceptable and requested that Westinghouse verify that this is clearly stated in the SPM.

The staff requested additional details for replacing "system testing" and "integration testing" with "factory acceptance testing." Westinghouse explained that system testing requirements are typically satisfied by a factory acceptance test and that a dry run of the factory acceptance test is typically used for integration testing. Westinghouse agreed to revisit this area in the SPM.

The staff stated that Regulatory Guide 1.168, "Verification, Validation, Reviews, and Audits for Digital Computer Software Used in Safety Systems of Nuclear Power Plants," is being revised to add cyber security requirements. An NRC staff member stated that he was pleased to see security requirements included in the Common Q design documentation during his audit of the PVNGS CPCS.

Westinghouse initiated a discussion related to the "loop controllers" described in WCAP-16097-P-A, Appendix 4, Revision 0 (previously CENPD-396-P-A, Appendix 4, Revision 3), "Common Qualified Platform Integrated Solution." The loop controllers receive demand signals from the engineered safety features actuation system to initiate electronic component control. The NRC safety evaluation of CENPD-396-P, "Common Qualified Platform" has documented this as Generic Open Item 7.8. This remains the only generic open item from the Westinghouse Common Q submittal. Westinghouse will provide the design information for the loop controllers to support their diversity from the Common Q components to close out this item. Westinghouse asked if it would be cost effective to submit a supplement to the integrated solution appendix that includes the design information for the loop controllers in parallel with the submittal of the revised SPM. The staff said that it would be treated as a separate safety evaluation; however, both reviews could be performed concurrently.

The staff expressed their appreciation for the presentation.

S. Dembek

-4-

An attendance list is provided in the enclosure. The slides used during the meeting are available in ADAMS under accession number ML033520374.

Project No. 700

Attachment: Meeting Attendees

cc w/attachment:

Mr. Gordon Bischoff, Manager  
Owners Group Program Management Office  
Westinghouse Electric Company  
P.O. Box 355  
Pittsburgh, PA 15230-0355

Mr. John S. Galembush, Acting Manager  
Regulatory Compliance and Plant Licensing  
Westinghouse Electric Company  
P.O. Box 355  
Pittsburgh, PA 15230-0355

Mr. Mark Stofko  
Westinghouse Electric Company  
P.O. Box 598  
Pittsburgh, PA 15230

An attendance list is provided in the enclosure. The slides used during the meeting are available in ADAMS under accession number ML033520374.

Project No. 700

Attachment: Meeting Attendees

cc w/attachment:

Mr. Gordon Bischoff, Manager  
Owners Group Program Management Office  
Westinghouse Electric Company  
P.O. Box 355  
Pittsburgh, PA 15230-0355

Mr. John S. Galembush, Acting Manager  
Regulatory Compliance and Plant Licensing  
Westinghouse Electric Company  
P.O. Box 355  
Pittsburgh, PA 15230-0355

Mr. Mark Stofko  
Westinghouse Electric Company  
P.O. Box 598  
Pittsburgh, PA 15230

DISTRIBUTION:

PUBLIC	MChiramal
PDIV-2 Reading	CGraham
RidsNrrDlpm (TMarsh/ELeeds)	BKemper
RidsNrrDlpmLpdiv (HBerkow)	PLoesser
RidsNrrLAEPeyton	AMarinos
RidsAcrsAcnwMailCenter	PREbstock
RidsOgcRp	MWaterman
RidsNrrPMBBenney	
RidsNrrPMMKhanna	

**PKG.: ML040120184**

**NRC-001**

**Meeting Notice No.: ML033140030**

**ADAMS Accession No.: ML040120073**

**NRC-001**

OFFICE	PDIV-2/PM	PDIV-2/LA	PDIV-2/SC
NAME	MKhanna	EPeyton	SDembek
DATE	12/31/03	12/31/03	1/2/04

DOCUMENT NAME: G:\DLPM\PDIV-2\WESTINGHOUSE(VENDOR)\COMMON Q MEETING SUMMARY.WPD

OFFICIAL RECORD COPY

# **MEETING WITH WESTINGHOUSE**

**DECEMBER 4, 2003**

## **ATTENDANCE LIST**

### **WESTINGHOUSE**

K. Finlay  
D. Popp  
M. Stofko

### **NRC**

M. Chiramal  
S. Dembek  
C. Graham  
B. Kemper  
M. Khanna  
P. Loesser  
A. Marinos  
P. Rebstock  
M. Waterman