

Westinghouse Non-Proprietary Class 3



Westinghouse Electric Company

**Westinghouse Nuclear Automation Strategy for the
Closeout of the Common Qualified Platform Category 1 Open Items**

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WNA has been preparing additional information about the generic and plant-specific action items identified in Sections 6 and 7 of the Common Qualified Platform SE. It is WNA's intent to close all ten of the generic open items and to provide information to assist the NRC staff in providing clarification to plant-specific action items 6.3, 6.11, and 6.14

WNA has divided the ten generic open items and three plant-specific action items into three categories as follows:

- Category 1 — Items to be satisfied through a revision to Appendix 4 and accompanying letter. These include generic open items 7.4, 7.7, 7.9, & 7.10, and plant-specific action items 6.3, 6.11, & 6.14.
- Category 2 — Items that depend upon the successful completion of supplemental qualification testing. These include generic open items 7.1, 7.2, 7.3, 7.5, & 7.6.
- Category 3 — Item that requires a future submittal for staff review. The single item in this category is generic open item 7.8.

The function of this letter is to provide a basis for closure of all the Category 1 open items:

- SE Item 7.4 CENP has committed to arrange a value-added reseller agreement with QSSL that is similar to BA AUT-99-ADVANT-00, the value-added reseller agreement it has with ABB-Products. A value-added reseller agreement is needed to satisfy the configuration control and incoming inspection requirements of EPRI TR-106439. The staff's review of the value-added reseller agreement with QSSL is discussed in Section 4.2.1.2 of the SE.

WNA has selected the vendor's products QNX4, Version 4.25b and Photon microGUI, Version 1.13b as suitable for use as the FPDS operating system and display system, respectively. WNA plans to use these selected versions of the two products in all future FPDS installations in Common Q applications. WNA has resolved the value-added reseller agreement with QSSL to satisfy the configuration control and incoming inspection requirements of EPRI TR-106439. If requested, this agreement will be available for audit by the NRC staff.

- SE Item 7.7 The staff has reviewed the information in the SVVP about software module testing and finds that the information provided is not sufficient for the staff to arrive at a conclusion about the adequacy of the scope of the tests for validating a software module. The staff's review of this information is discussed in Section 4.3.1.j of the SE.

WNA is performing software module testing in accordance with the requirements provided in Annex E to IEEE Std 7-4.3.2-1993. This is documented in CENPD-396-P Rev 01, Section 7.3.3.1 and in the SPM Rev 01, Section 5.5.5. Test cases

are selected to assure that []_{a,c} of the module are exercised. This information is intended to be sufficient for the staff to arrive at a satisfactory conclusion regarding the adequacy of the scope of the tests for validating a software module.

- SE Item 7.9 The staff has reviewed the approach for the Integrated Solution of using the ITP's and the AF100 buses to provide separation of safety and non-safety signals and finds that there is not sufficient detail to permit an evaluation against the independence requirements set forth in IEEE Std 7-4.3.2. This must be the subject of a future CENP submittal. This is discussed in Section 4.4.4.3.4 of the SE.

WNA has revised the Common Qualified Platform Integrated Solution Appendix 4 Sections A4.3.2.2, A4.5.4 and A4.5.5 to address this topic. Details are provided for the inter-division data communication between safety and non-safety systems and the special design features of the Integrated Solution that ensure that there are no adverse control/protection interactions when using non-safety signals to control the safety systems

- SE Item 7.10 The evaluation of the design for the multi-channel operator station control for the integrated solution requires detail beyond the scope of the present submittals. This is discussed in Section 4.4.4.3.5 of the SE.

WNA has revised the Common Qualified Platform Integrated Solution, Appendix 4, Sections A4.5.4 and A4.5.5 to address this topic. Additional detail has been added to demonstrate how the multi-channel operator station provides the means for the operator to have multiple channel access to safety system components

- SE Item 6.3 If a licensee installs a Common Q application that encompasses the implementation of FPDS, the licensee must verify that the FPDS is limited to performing display and maintenance functions only, and is not to be used such that is required to be operational when the Common Q system is called upon to initiate automatic safety functions. The use of the FPDS must be treated in the plant-specific FMEAs. See Section 4.2.1.2 of the SE.

The QNX software error is discussed in Section 4.2.1.2 of the SE. The staff acknowledged that the FDPS restriction is not an issue for RPS, CPC, or PAMS. The cause of this error has been identified, tested and corrected by the vendor. This error has been closed in accordance with the process specified in the Westinghouse Software Programming Manual. If requested, this documentation is available for audit by the NRC staff.

- SE Item 6.11 If a licensee installs a Common Q PAMS , CPCS, DPPS or Integrated Solution, the licensee shall demonstrate that the plant-specific Common Q application complies with the criteria for defense against common-mode failure in digital instrumentation and control systems and meets the requirements of HICB BTP-

19. See Sections 4.1.6, 4.4.2.3, 4.4.3.3, 4.4.4.3.3, and 5.0 of the SE.

Westinghouse has revised the Common Qualified Platform Integrated Solution, Appendix 4, Section A4.5.3 to address this topic. This discussion now provides the basis for a strategy of using the Integrated Solution as the roadmap for a modernization project and performing a bounding Diversity and Defense-in-Depth Assessment. In the next revision of the Common Q SE, the staff is requested to clarify the wording to permit a one-time bounding CMF analysis for phased I&C upgrades.

SE Item 6.14 The licensee must ascertain that the implementation of the Common Q does not render invalid any of the previously accomplished TMI action items. See Section 5.0 of the SE.

In the minutes of the WNA/NRC meeting of December 21, 2000, it was stated that the staff has no intent to elevate the importance of TMI action items over the importance of the 10 CFR Part 50, Appendix A, General Design Criteria (GDCs) or any design-basis items. It is only necessary for the licensee to ascertain that the implementation of a Common Q digital replacement does not render invalid any of the plant's previously accomplished protection or safety functions, including TMI action items. TMI action items were mentioned in the SE because these are treated separately from the GDCs and other criteria in the NUREG-0800, Standard Review Plan, Table 7-1, Acceptance Criteria and Guidelines for Instrumentation and Control Systems." The staff is requested to repeat this clarification in the next revision of the Common Q SE.

General Item 1

During the meeting between WNA/NRC on April 5, 2001, WNA suggested that the wording in Section 4.4.1.3, (page 56) of the SE needs to be clarified. A FMEA may be prepared for PAMs applications, but does not need to be submitted for review by the staff when a licensee implements a PAMS upgrade. The staff is requested to repeat this clarification in the next revision of the Common Q SE.

General Item2

During the meeting between WNA/NRC on April 5, 2001, Topical Report CENPD-396-P, Rev.01, Section 12, "Future Documentation," was discussed. Section 12 of the Topical Report presents a detailed accounting of future documentation associated with the implementation of Common Q upgrades. WNA reaffirmed their intention to use this table as the basis for generating future documentation as a supplier to licensees. Westinghouse will inform the NRC staff if any changes to the table should be considered for specific projects. Otherwise the table will serve as the model for future Common Q documentation.

The Category 2 generic open items (7.1, 7.2, 7.3, 7.5, & 7.6) all depend upon the successful completion of the supplemental qualification testing. As an attachment to the Category 2 closeout letter, WNA will provide an executive summary of the equipment qualification test

methods, tests results and acceptance criteria. If requested, the formal test reports will be available for audit by the NRC staff. The Category 2 closeout letter is scheduled for August 31, 2001.

With regard to schedule WNA requests that the NRC staff acknowledge closeout of all Category 1 open items via revision to the Common Q SE by June 15, 2001. If the staff has any comments related to the content of this letter, please contact Mr. Larry Erin directly at (724) 733-6456.