

ArevaEPRDCPEm Resource

From: Getachew Tesfaye
Sent: Tuesday, January 27, 2009 4:13 PM
To: 'Pederson Ronda M (AREVA NP INC)'
Cc: Terry Jackson; Meena Khanna; Joseph Colaccino; Michael Miernicki; ArevaEPRDCPEm Resource
Subject: EPR Instrumentation and Control Topical Reports
Attachments: AV42 DAC RAI.doc

Ronda,

During our telecon this morning, where we discussed your January 23, 2009, letter regarding the subject topical reports, we committed to provide you path forward for AV42 and D3 topical reports to support your decision making. For the other 2 topical reports, Software Program Manual and Digital Protection System, we were satisfied with your proposed path forward as outlined in your January 23, 2009, letter.

Path Forward for AV42 Topical Report

The Staff's position on the topical report is that it should be retracted by AREVA NP or the Staff would send a rejection letter. To avoid schedule impacts, the Staff proposes that AREVA NP use design acceptance criteria (DAC) for the AV42. The process for using design acceptance criteria is as follows:

(1) The U.S. EPR FSAR would contain sufficient description of AV42, including the limits, parameters, procedures, and attributes to support the DAC. Specifically, the FSAR would describe all interfaces between AV42 and the plant, operators, and environment. DAC is intended for the detailed design information. "Black box" and architectural and functional details should be provided in the FSAR. For example, the signal and network connections between AV42 and the other I&C/plant components should be identified (no need for detailed design information that may be proprietary). For environmental qualification, identify the levels to which the device would be tested, the test methods, and particular configurations the device will be tested (actual test results would be looked at later when the topical report is resubmitted). Maintenance and testing aspects would be addressed in the FSAR (excluding aspects that involve detailed design). Finally, the functionality of the AV42 should be addressed in the FSAR. Examples would be the priority logic scheme. From what the staff has seen in the current AV42 topical report, the level of detail is present to support use of DAC; it's just a matter of transferring that information to the FSAR.

(2) AREVA NP would resubmit the AV42 topical report addressing the issues we outlined in our January 8, 2009, letter (i.e., issues involving independence and 100 percent testing). The topical report review would not be tied to the U.S. EPR design certification (DC) review schedule. If AREVA NP is able to submit the topical report, and the Staff is able to review and approve the topical report in sufficient time before end of the DC Phase 4 review, the DAC could be removed from the U.S. EPR DC and would be replaced by a reference to the approved AV42 topical report.

(3) If the new AV42 topical report is not approved in time for excluding the DAC in the U.S. EPR DC review, the review would continue and once approval is obtained, the combined license applicants/holders could reference the approved topical report in their ITAAC closure letter (the ITAAC containing the DAC). From an ITAAC inspection viewpoint, the remaining activity is to verify that the AV42 in the plant is in fact the AV42 described in the topical report. This removes the risk of technical issues from the combined license applicants/holders since there is prior Staff approval.

To facilitate the conversion to DAC, we plan to formally issue a request for additional information similar to what is included in the attached document.

Path Forward for D3 Topical Report

The Staff's position on the topical report is that it should be retracted by AREVA NP or the Staff would send a rejection letter. Information for D3 should be contained in the U.S. EPR FSAR. In your January 23, 2009, letter, you proposed to submit the missing information discussed in our January 8, 2009, status letter by November 2009. Seeing that this was going to put the I&C review as critical path, AREVA NP proposed a phase approach of providing technical information. The Staff believes that much of the information needs can be addressed earlier than Nov. 2009. If this information is provided by May 2009, the staff does not believe there will be a schedule impact to the EPR DC Phase 2 review. One area that may not be able to be addressed in by May 2009 is the reactor systems analysis to demonstrate that the proposed D3 design adequately addresses anticipated operational occurrences and postulated accidents with a software common-cause failure. Such information could be left as an open item In Phase 2, with the anticipation that such information would be received by November 2009 to support closure in Phase 4 of the DC review.

Thanks,
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Provide the Inspection, Test, Analysis, and Acceptance Criteria and the associated limits, parameters, procedures, and attributes to support the use of design acceptance criteria (DAC) for the Priority Actuation and Control Module (AV42).

The SRM to SECY-92-053 provided the Commission policy for using design acceptance criteria for digital instrumentation and control (I&C) systems. Specifically, applicants for standard design certifications may use DAC to address the detailed design of digital I&C systems. The detailed design of the AV42 would include the information related to the hardware and software design and testing details. To support the use of DAC as outlined in the SRM to SECY-92-053, and to address the level of detail requirements in 10 CFR 50.47, the design attributes, limits, parameters, and procedures that bound the detailed design of the AV42 should be provided. Specifically, AREVA NP is requested to provide the interface and functional requirements information for the AV42. For example, such information would identify specific signal/network connections between the AV42 and other I&C/plant systems, maintenance and periodic testing aspects, operator interfaces, environmental qualification test levels/methods/configurations, and functional logic/timing (i.e. priority logic scheme). The Staff expects that the majority of the I&C requirements in 10 CFR 50.55a(h) and 10 CFR Part 50, Appendix A can be addressed without knowledge of the detailed design of the AV42. Where detailed design is necessary, such as the case with software quality and environmental qualification test results, DAC may be applied.