

May 28, 2008

Dr. William J. Shack, Chairman
Advisory Committee on Reactor Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

SUBJECT: DIGITAL INSTRUMENTATION AND CONTROL SYSTEMS INTERIM STAFF
GUIDANCE

Dear Dr. Shack:

On behalf of the U.S. Nuclear Regulatory Commission (NRC), I am responding to your letter to Chairman Klein, dated April 29, 2008, which summarized the views of the Advisory Committee on Reactor Safeguards (ACRS) regarding the staff's activities on the digital instrumentation and controls (I&C) interim staff guidance (ISG). The staff and I appreciate your support of the ISGs on cyber security, the digital I&C licensing process, review of new reactor digital I&C probabilistic risk assessments (PRAs), and other staff efforts including the digital I&C operational experience and categorization update.

Since the beginning of 2007, the staff has been working to develop a number of ISGs through the work of seven task working groups under the direction of the NRC Digital I&C Steering Committee to provide additional guidance in digital I&C.

The staff agrees with the ACRS conclusion that the ISG on cyber security will clarify the staff's guidance regarding the implementation of cyber security requirements and will facilitate the licensing process when NEI 04-04, Revision 2, "Cyber Security Program for Power Reactors," is used in lieu of Regulatory Guide 1.152 Revision 2, "Criteria for Use of Computers in Safety Systems of Nuclear Power Plants."

The staff agrees with the ACRS recommendation that the draft ISG on the review of new reactor digital I&C PRAs should be revised to emphasize the importance of the identification of failure modes, deemphasize sensitivity studies that deal with probabilities, and discuss the current limitations in digital I&C PRAs. The staff has completed this revision and is in the process of issuing the revised ISG.

The staff will take into consideration ACRS comments concerning additional regulatory guidance being prepared to support the new rule 10 CFR 73.54 "Protection of Digital Computer and Communication Systems and Networks" as follows:

- The regulatory guidance should recommend that the licensee conduct an assessment of potential internal and external threats to ensure that the defensive measures are addressing the right cyber security threats.

- The regulatory guidance should recommend that licensees conduct assessments of support systems, infrastructure, and interfacing data systems for critical digital assets when assessing potential vulnerabilities of such assets.
- The regulatory guidance should provide a statement that any insights obtained from the plant PRA should be viewed with caution since digital I&C systems are modeled at a simplistic level in current PRAs.

The staff agrees with the ACRS conclusion that the draft ISG on the digital I&C licensing process will help to streamline the licensing process. The staff continues to refine this ISG, and will provide ACRS a copy when the ISG is issued.

The ACRS also provided comments on digital I&C PRAs. These comments addressed the state of the art of PRAs, failure probabilities, sensitivity studies, and reliance on PRAs. The ACRS also included comments on the failure mode analyses discussed in the draft ISG and provided recommendations on the types of processor-level failure modes that the staff should consider. The staff will consider these comments in its ongoing deliberations and developments related to risk insights of digital I&C.

The staff and I appreciate the comments and recommendations provided by the ACRS and look forward to continuing to work with the ACRS as the staff completes the remaining ISGs and develops final regulatory guidance.

Sincerely,

/Bruce S. Mallett for/

R. W. Borchardt
Executive Director
for Operations

cc: Chairman Klein
Commissioner Jaczko
Commissioner Lyons
Commissioner Svinicki
SECY

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The staff agrees with the ACRS conclusion that the draft ISG on the digital I&C licensing process will help to streamline the licensing process. The staff continues to refine this ISG, and will provide ACRS a copy when the ISG is issued.

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Letter to W. J. Shack from R. W. Borchardt Dated: May 28, 2008

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