August 10, 2007

MEMORANDUM TO: Michael Franovich, Chief
PRA Op. Support & Maintenance Branch
Division of Risk Assessment
Office of Nuclear Reactor Regulation

FROM: Diana Diaz Toro, Project Manager **/RA/**
Instrumentation and Controls Branch
Division of Engineering
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF THE JULY 11, 2007, MEETING WITH INDUSTRY REPRESENTATIVES AND THE RISK-INFORMING DIGITAL INSTRUMENTATION AND CONTROL (I&C) TASK WORKING GROUP (TWG) TO DISCUSS ISSUES RELATED WITH RISK-INFORMING DIGITAL I&C REVIEWS AND THE ASSOCIATED PROJECT

On July 11, 2007, the U.S. Nuclear Regulatory Commission (NRC) Digital Instrumentation and Controls (Digital I&C) Risk Issues Task Working Group (TWG) and industry representatives of the Digital I&C Project held a Category 2 public meeting at the NRC Headquarters in Rockville, MD. The purpose of the meeting was to discuss issues related with risk-informing Digital I&C reviews and the associated project plan. A summary of the meeting discussion is provided below.

During the meeting, the TWG had discussions with the industry on the updated project plan, problem statements, and the updated schedule. Also, presentations were made by the NRC staff and the industry representatives on the following topics.

- EPRI Presentation on “Generation of Risk Insights from PRA to Address Digital I&C Issues” (ML072220041)
- NRC Presentation on “Digital System Classification and Inventory and Review of Operating Experience” (ML072220055)
- NRC Presentation on “Possible Collaborative Approach for Evaluating Risk and Reliability Models of Digital Systems” (ML072220052)
- NRC Presentation on “Status of Problem Statement 1 in Risk-Informing Digital I&C” (ML072220050)
- NEI Presentation on “Problem Statement 1" (ML072220047)

The staff indicated that risk-informing Digital I&C reviews as a technically achievable goal; however, the state-to-the-art in reliability modeling of Digital I&C systems has not sufficiently

matured to clearly state short term detailed technical guidance to support a risk-informed methodology approach. Currently, risk and reliability modeling may be performed on a basic level to assess the relative importance of Digital I&C systems and associated common cause failures. Risk perspectives may be gained for purposes of assessing the integrated risk of the plant design for reasonable assurance that there is no undue risk to public health and safety and that the Commission's Safety Goals have been satisfied.

Therefore, the staff proposed streamlining the scope of Problem Statement 1 where this level of risk modeling could be performed to complement traditional engineering reviews including evaluations of the defense-in-depth and diversity (D3) of the I&C architecture. Through an Interim Staff Guidance (ISG) document, the staff intends to clarify expectations for combined operating license and design certification applicants with respect to the types of applications that current risk and reliability modeling can support for purposes of a Standard Review Plan (NUREG-0800), Chapter 19 type safety evaluation. The guidance will provide best practices and potential pitfalls when performing risk and reliability assessments of Digital I&C systems. The staff will incorporate insights gained from a recent NEI white paper submitted to the NRC regarding this ISG.

The staff proposed that resolution of Problem 2 should be better coordinated with the Office of Nuclear Regulatory Research (RES) Digital I&C program and that certain pre-requisite activities be completed prior to fully initiating work on problem 2. The proposal is based on (1) resource constraints and technical dependencies between the risk TWG and other TWGs activities as revealed by the Project Level 3 schedule exercise and (2) the desire to improve the technical coherence between resolution of Problem 2 and the RES Digital I&C program activities. Pre-requisites activities include completion of the update on operating experience and the classification effort. The staff proposed using the existing memorandum-of-understanding framework between the NRC and EPRI with a potential pilot plant application in the later half of 2008. EPRI representatives were supportive of the proposal.

NEI & EPRI representatives shared with the staff their thoughts regarding the role of probabilistic risk assessment in assessing the safety benefits of the D3 draft interim staff guidance (Revision 5). The NRC staff was given industry's preliminary risk perspectives regarding the 30 minute/diverse actuation system goal. The industry representatives believe that the risk TWG contribution to the overall Digital I&C project now has more importance given the D3 draft ISG. The details of the industry's assessment are provided in the enclosure containing the EPRI presentation slides.

Summary of Action Items Assigned

The following key action items were assigned during the meeting:

Industry:

- Industry will consider NRC's plans and schedule for Problem Statement 2. Industry will provide feedback to NRC on the revised schedule.
- Industry will discuss the scope of Problem Statement 1 and provide feedback to NRC.
- Industry will consider giving NRC access to vendor databases of developmental and operating experience.
- EPRI will draft an MOU plan with the NRC for Digital I&C project.

NRC:

- The NRC staff will provide clarification on regulations requiring a BTP-19 analysis.
- The NRC staff will set up the next meeting in mid-August 2007, to discuss the white paper for Problem Statement 1.
- The NRC staff will set up the following meeting in September 2007.

The meeting notice with the agenda can be found via the Agencywide Documents Access and Management System (ADAMS) Accession Number ML071770604. Accession Numbers for the NRC staff and industry presentations are provided with their titles in this summary. Please direct any inquiries to Diana Diaz Toro at 301-492-3220, or ddt1@nrc.gov.

Enclosure: List of Attendees

cc w/encl: See next page

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ATTENDEES

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JULY 11, 2007

INDUSTRY:

Dave Blanchard	- AREI	
Yumi Kawanago	- Mistubishi	
Ken Canavan	- EPRI	
Kimberly Keithline	- NEI	
Jeff Stone	- Constellation	
Tim Dennis	- ANS Standards Committee	
William Catullo	- Westinghouse	
Richard Anderson	- Westinghouse	(By phone)
Ray Torok	- EPRI	(By phone)

NRC

Mike Franovich
Girija Shukla
Steven Arndt
Todd Hilsmeier
Cliff Doutt
Alan Kuritzky
Wesley Deschaine
Hossein Hamzehee
Sam Lee

Enclosure