

March 19, 2009

MEMORANDUM TO: Patricia A. Silva, Chief
Technical Support Branch
Special Projects and Technical
Support Directorate
Division of Fuel Cycle Safety
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Office of Nuclear Material Safety
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FROM: David L. Rahn, Sr. I&C Engineer /RA/
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SUBJECT: SUMMARY OF THE FEBRUARY 20, 2009, CATEGORY 2 PUBLIC
MEETING AND TELECONFERENCE WITH THE NUCLEAR ENERGY
INSTITUTE AND INDUSTRY, TO DISCUSS TASK WORKING GROUP 7
DIGITAL INSTRUMENTATION AND CONTROL FOR FUEL CYCLE
FACILITIES

On February 20, 2009, Task Working Group (TWG) 7 held a Category 2 public meeting and teleconference to discuss issues related to the development of guidance for the review of license applications for fuel cycle facilities concerning the use of digital instrumentation and control equipment in safety applications. Specifically, license review criteria contained in draft Interim Staff Guidance (ISG) were discussed.

Mr. Bailey of the Nuclear Regulatory Commission (NRC) staff announced that a concerted effort should be made to allow this next set of comment incorporations become the last set before publication of the ISGs on the NRC public website. Thereafter, any updates to the ISGs would be made by incorporating both in-house and public comments. Mr. Rahn noted that he has already received several sets of comments from other members of the Division of Fuel Cycle Safety and Safeguards (FCSS), but had not issued the set of ISGs to the other Offices within the NRC. Mr. Bailey noted that other Task Working Groups within the Digital I&C Task Force had simultaneously issued their ISGs to the public and to other NRC Offices, and that it should be considered acceptable to do so here.

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The main focus of this meeting was on the revisions that had just been completed to the ISG on Problem Statement 5, "Software Quality." Mr. Prytherch remarked that comments he previously transmitted to the NRC staff had not been incorporated into the ISG. These comments concerned the appropriate reference to an International Electrotechnical Commission standard concerning guidance for the development of fixed programming language and limited variability language programs with an application software safety lifecycle. The staff noted that it had not recalled seeing the comment, but that it would look for it after the close of this meeting, and evaluate it for inclusion in an appropriate place within the ISG.

Mr. Killar noted that the FCSS, ISG-10, "Justification for Minimum Margin of Subcriticality for Safety," may contain appropriate criteria regarding criticality code validation processes that may be applicable for use within the Software Quality ISG. The NRC staff stated it would review FCSS ISG-10 for this potential applicability, and adopt parallel criteria, if found to be applicable. For example, one method for accepting a vendor's software quality program for use in a safety related application should be to perform a vertical slice, phase-by-phase development process review of the vendor's quality processes used to ascertain how well that process achieves high quality performance. Another method may be to develop independent test cases and ascertain whether the software developed by the vendor successfully achieves the proper results.

Finally, a discussion was held regarding whether digital control systems may be used to facilitate or accomplish administrative controls used as items relied on for safety, in addition to their use as active engineered controls. Such controls would make use of not only safety instruments located near the process, but also safety human machine interface controls in a central or local control area. Several participants at the meeting confirmed that such a possibility exists. For example, a local safety level transmitter may provide an indication and an alarm in the control room that a critical tank level is being reached. The operator may be required to confirm that the high level condition status exists before taking preplanned manual actions to stop the process of filling this tank. If the potential exists that such an alarm could fail in an undetected manner, operators should be required by procedure to survey that instrument channel on a frequent basis, in order to be able to take a timely action to prevent the tank's overflow.

The next public meeting will be a teleconference that will be held on Friday, March 20, 2009.

ACTION ITEMS:

Item	Description	Responsibility
1.	Schedule visit to AREVA Richland, WA fuel manufacturing facility	David Rahn
2.	Provide comments on ISGs for Problem Statements 1, 3, 4, and 5	TWG members and Industry Participants
3.	Update and re-issue drafts of Problem Statements 1,3, 4 and 5	NRC Staff

PARTICIPANTS

NRC and external stakeholders, including members of Nuclear Energy Institute, industry representatives, consultants to the nuclear industry, and interested members of the Public:

NRC-Staff

D. Rahn, NMSS
W. Smith, NMSS
S. Bailey, NRR*
D. Edwards, RII/DFFI*
P. Bell, NMSS

Industry

Felix Killar, NEI
Janet Schlueter, NEI
Gordon Clefton, NEI
Ed Prytherch, Westinghouse*
Steve Powers, AREVA*

Public Participants

David Herrell, MPR Associates*
Iain Leaver, Energy Solutions, Inc.*

* Attended via teleconference

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