December 31, 2007

MEMORANDUM TO: Deborah A. Jackson, Chief
Technical Support Branch
Special Projects and Technical
Support Directorate
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

FROM: David L. Rahn, Sr. I&C Engineer **/RA/**
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Special Projects and Technical
Support Directorate
Division of Fuel Cycle Safety
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SUBJECT: DECEMBER 12, 2007, SUMMARY OF PUBLIC MEETING WITH THE NUCLEAR ENERGY INSTITUTE TO DISCUSS TASK WORKING GROUP #7, DIGITAL INSTRUMENTATION AND CONTROL FOR FUEL CYCLE FACILITIES

On December 12, 2007, Task Working Group (TWG) #7 held a public meeting to discuss various issues related to digital instrumentation and control problem statements and methodology.

The TWG discussed the wording of specific problem statements. The TWG generally agreed that, although the subject matter for each problem statement is appropriate for fuel cycle facilities, certain aspects of the problem statements pertaining to specific references to ISG for digital instrumentation and control applications for power reactors did not appear to be appropriate.

The TWG discussed appropriate criteria for defining reliability assessment methods for safety control systems. Ed Prytherch offered advice regarding potential appropriate methods which could be considered for assessing digital system reliability in terms of probabilities of “Failure on Demand”, and “Failing in a Safe Mode” versus an “Unsafe Mode.” Mr. Prytherch suggested a text which could be referred to for a definition of failure on demand-- *Control Systems Safety and Reliability* by William M. Goble. (Published by ISA -- ISBN 1-55617-636-8), page 80. In addition, the TWG discussed how the terminology used in describing a control system design’s Safety Integrity Level might be applicable in discussions of “likelihood” of events. (Note: These concepts are described in an ISA Topical Report, ISA-T84.00.02-2002 – Part 1, approved June 17, 2002.)

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The TWG noted that other acceptable methods may be found in related Chemical Process Standards.

Nuclear Regulatory Commission (NRC) Fuel Cycle Inspectors Tom Marenchin and Blake Purnell were consulted to ascertain their expectations regarding system reliability evaluations they might review during an inspection of a fuel cycle facility. Mr. Marenchin and Mr. Purnell stated that, typically, they expect to review aspects of the design as defined in the facility license.

Wednesday, January 30, 2008, at 8:30 a.m. was identified as the next working meeting. An 8-hour session will be scheduled and announced publicly.

ACTION ITEMS

Item	Description	Responsibility
1.	Prepare proposed revisions to the problem statements that simplifies in terms of fuel cycle facility requirements	David Rahn
2.	Investigate ISA (Instrumentation, Systems, and Automation Society) and/or Chemical Process Standards references defining possible evaluation methodologies for assessing safety control system reliability.	David Rahn

PARTICIPANTS

NRC and external stakeholders, including members of Nuclear Energy Institute (NEI), industry representatives, consultants to the nuclear industry, and any interested members of the public.

NRC	Industry
James Smith	Felix Killar, NEI*
David Rahn	Ed Prytherch, Westinghouse*
Walter Schwink*	Steve Powers, AREVA*
Blake Purnell	Gordon Clefton, NEI*
Tom Marenchin	Charlie Vaughan, NEI*

*via Teleconference

Public
(No members of the Public were in attendance.)

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