

November 16, 2007

MEMORANDUM TO: John Grobe, Associate Director
Engineering and Safety Systems
Office of Nuclear Reactor Regulation

FROM: Jay E. Robinson, Project Manager */RA/*
Generic Communications and Power Uprate Branch (PGCB)
Division of Policy & Rulemaking
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF CATEGORY 2 PUBLIC MEETING OF THE DIGITAL
INSTRUMENTATION AND CONTROL STEERING COMMITTEE
WITH THE NUCLEAR ENERGY INSTITUTE TO ADDRESS
THE DIGITAL INSTRUMENTATION AND CONTROL PROJECT
PLAN AND RELATED SUBJECTS

On October 22, 2007, Nuclear Regulatory Commission (NRC) staff met with representatives of NEI, in a public meeting at NRC headquarters in Rockville, Maryland. Enclosure 1 provides a list of those in attendance and individuals who participated via teleconference. Enclosure 2 is the meeting agenda. Information presented by the NRC and NEI at the meeting is available in the NRC Agencywide Documents Access and Management System (ADAMS) under Accession No. ML073190151.

The purpose of this meeting was to discuss the Digital Instrumentation and Control Project Plan and related subjects. The meeting was convened by the Associate Director for Engineering and Safety Systems in the Office of Nuclear Reactor Regulation.

A public meeting notice was issued on October 04, 2007 and was posted on the NRC's external (public) web page (ADAMS Accession No. ML072770422). Agenda items included: Long Term Schedule: Expectations, Interaction and Areas of Focus; TWG Plans Moving Forward; Process for Feedback During ISG Implementation; and, Status of ACRS Recommendations: EPRI and Operational Experience.

Representatives of the NRC discussed Long Term Activities, Expectations, Interaction, and Areas of Focus. Estimated completion dates for the remaining Interim Staff Guidance (ISG) documents was discussed. ISGs scheduled to be issued in the near term are Cyber Security by 10/31/2007, Licensing Process for Operating Reactors by 11/30/2007, and Risk Informing by 03/31/2008. Near term activities that need to be completed in order to finalize ISGs include activities related to risk informed, fuel cycle facilities, human factors, and licensing process. Long term activities that are needed to incorporate ISGs into guidance documents include refinements and enhancements to ISGs as necessary, interactions with industry to have ISGs incorporated into industry standards, revision of guidance documents (i.e. Regulatory Guides (RG), NUREGs, etc. and interactions with the Advisory Committee on Reactor Safeguards (ACRS)). Representatives of NEI discussed other industry standards such as NEI 04-04 and that focus should be on updates to the project plan including industry input.

Representatives of the NRC discussed Long Term Activities for each Task Working Group (TWG). A summary of each discussion is provided below:

1. TWG 1 – Cyber Security: The draft interim staff guidance and cross correlation table is ready for final review/comment. The next public meeting is scheduled for October 25, 2007. The ISG is scheduled to be issued by the end of October, 2007. NEI 04-04, Revision 2 is to be submitted to NRC for review and acceptance soon after the draft ISG is finalized by the NRC. Regulatory guidance under development in support of proposed rule 73.55(m) – Cyber Security. A draft RG should be available for comment by early 2008.
2. TWG 2 – Diversity and Defense-in-Depth: The ISG was issued on September 28, 2007. Long term activities expected to be completed in early to mid 2008 include evaluation of failure data, classification of systems, and diversity strategies. The long term activity concerning operator response time evaluation is not expected to be completed until late 2008. The next TWG meeting is scheduled for October 25, 2007.
3. TWG 3 – Risk Informing: The conceptual paper for problem statement 1 has been completed. Paper to be shared with industry counterparts before next TWG meeting on November 6, 2007. A draft of the ISG is estimated to be issued by November 28, 2007. The staff is awaiting an industry paper concerning Probabilistic Risk Assessment (PRA) approach and risk informed expectations of RG 1.174.
4. TWG 4 – Highly Integrated Control Rooms, Communications: The ISG was issued on September 28, 2007. Long term items include update of IEEE 7-4.3.2 by the end of 2008, recommend revisions to RG 1.152 and the SRP in mid 2009, issue revisions to RG 1.152 and the SRP in mid to late 2010. No additional TWG meetings are scheduled.
5. TWG 5 – Highly Integrated Control Rooms, Human Factors: The ISG was issued on September 28, 2007. Long term activities include update of NUREG-0700, update of NUREG-0711, update of the SRP, comment on NEI white paper, consideration of additional guidance for readily accessible, spatially dedicated, and continuously visible, and considering applicability to operating plan modernization. TWG 5 will work closely with TWG 2 regarding operator response time evaluation.
6. TWG 6 – Licensing Process: The ISG for operating Reactors is scheduled to be issued by November 30, 2007. ISG for Combined Operating License (COL) scheduled to be issued by February, 2008. NEI white paper to be issued at a later date yet to be determined. Long term activities include providing guidance to the industry regarding the documents required by the staff at various stages of digital I & C review, and identifying various SRP sections, IEEE standards and RGs that define the requirements for the Digital I & C system.
7. TWG 7 – Fuel Cycle Facilities: The first public meeting was held with NEI and other stakeholders to discuss the draft problem statements for TWG 7. Next

TWG meeting planned for November 16, 2007. Problem statements currently include: 1. Cyber Security; 2. Common Cause Failures and Diversity and Defense-In-Depth; 3. Criticality Safety and Double Contingency Requirements; 4. Highly Integrated Control Rooms – Communications; and 5. Common Cause and Systematic Failures in Digital Systems Attributed to Software Errors. The TWG will develop an ISG to address 5 problem statements.

In regards to TWG 1 – Cyber Security, representatives of NEI discussed that the initial reaction of the industry was to cancel the planned meeting on October 25, 2007 and that TWG 1 needs additional management attention.

In regards to TWG 2 – Diversity & Defense-In-Depth, representatives of NEI discussed that they support that manual actions need to be demonstrated to be feasible. Additionally, NEI discussed that they would like to see TWG 5 comments on NEI White Paper before the end of 2008. NEI discussed that it is their perception that the NRC staff is not considering information in NEI white papers.

In regards to TWG 3 – Risk Informing Digital I & C, representatives of NEI indicated that an industry paper on Problem statement #2 should be completed by the end of the year. Additionally, NEI discussed that comments on NUREG/CR-6942 should be provided to the NRC by November 14, 2007.

In regards to TWG 4 – Highly Integrated Control Room – Communications, representatives of NEI indicated that they were very happy with the progress of this TWG.

In regards to TWG 6 – Licensing Process, representatives of NEI indicated that this TWG is a show stopper. Additionally, it was discussed that some Utilities only pursue digital upgrades if covered under 10 CFR 50.59; that this does not help with the I & C obsolescence issue; that the proposed ISG will have a negative impact on Industry plans to apply digital technology; that there is disagreement over documents necessary to be docketed and their timing; that industry submitted table “Guidance for Evaluation of Conformance to IEEE Standard 603”; and that NRC needs a licensing application process that is predictable and repeatable and it should not take the form of an independent design verification. Additionally, it was discussed that the Industry proposes that Digital I & C Safety Evaluation Reports (SERs) allow for license conditions (or commitments) so that detailed technical documents are reviewed after SER issuance and part of the NRC inspection process; and that the proposed licensing process ISG will need continuing management attention to ensure content of application includes those documents necessary for NRC staff to make a finding of reasonable assurance.

Representatives of NEI discussed common concerns including that agreed upon ISG content is not incorporated into revised ISGs; that no explanation is offered for disposition of industry comments; and that no basis is provided for “surprise” additions to ISG content. Additionally, it was discussed that improved communication/discussion with TWGs during ISG development is needed.

Representatives of the NRC discussed the process for feedback during ISG implementation. There has been extensive interactions with the public while developing the ISGs and public comments have been received and incorporated as appropriate. ISGs are posted on the NRC website. Feedback on the ISGs can be provided by e-mail (DIGITAL_IC@nrc.gov) or through

the "Contact Us" link on the NRC's Digital I & C public Website. Additional public feedback can be provided during the public comment period for revised RGs and SRP revisions when the revisions are proposed to incorporate the ISGs.

Representatives from the NRC discussed the status of ACRS recommendations. The Commission and the ACRS requested that the NRC staff continue to work with domestic and international working groups to address digital I & C issues, and to evaluate operating experience with digital systems in nuclear and other industries to obtain insights regarding potential failure modes. Office of Research (RES) activities include completion of a short term self assessment; assignment of a project manager to the OECD/NEA COMPSIS project; obtaining failure information from the Institute of Nuclear Power Operations (INPO) EPIX database; interfacing with INPO concerning access to the COMPSIS data; initiating a task to investigate Digital I & C failures in safety-critical systems and to document failure modes and occurrence frequencies of digital systems; completion of a preliminary assessment of operating experience; initiated collaboration with EPRI to support an NEI sponsored EPRI analysis of Digital I & C failures; and contact with INPO to begin discussion on ways to improve sharing of Digital I & C operating experience.

The ACRS concluded that the first three ISGs will help with the review of near-term Digital I & C licensing actions. Two additional ACRS recommendations include: 1. Develop an alternative process to the 30 minute criterion to determine the conditions under which operator manual actions can be credited as a diverse protection function; and 2. The issue of spurious actuations needs to be examined further. The ACRS commended the NRC staff and Industry for their degree of collaboration.

Representatives of the NRC discussed a probable date for the next public Steering Committee meeting as the first or second week in December and that revisions to the project plan including industry input should be completed by the next meeting.

Enclosure 1: List of Attendees

Enclosure 2: Agenda

cc w/encl: See last page

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NAME	JRobinson	PSilva	JGrobe
DATE	11/16/2007	11/16/2007	11/16/2007

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List of Attendees for October 22, 2007 Public Meeting
of the Digital Instrumentation & Control Steering Committee

NAME	ORGANIZATION
Peter Lobner	Data Systems and Solutions
Robert Gill	Duke Energy
Mike Schoppman	NEI
Russell Smith	NEI
Gordon Clefton	NEI
Alex Marion	NEI
Amir Shahkarami	Exelon
Rick Libra	Exelon
Gary Vine	EPRI
Janardan Amin	Luminant Power
Victoria Anderson	NEI
David Hooten	Progress Energy
Ian Jung	NRC
Hukam Garg	NRC
Bill Kemper	NRC
Michal Marshall	NRC
Ryan Sprengel	NRC
Tim McGinty	NRC
Patti Silva	NRC
Dave Cullison	NRC
Gursharan Singh	NRC
Daniel J. Santos	NRC
Mario Gareri	NRC
Deanna Shang	NRC
Iqbal Ahmed	NRC

List of Attendees for October 22, 2007 Public Meeting
of the Digital Instrumentation & Control Steering Committee

NAME	ORGANIZATION
Steven Arndt	NRC
Doug Chung	NRC
Rick Croteau	NRC
Denise Edwards	NRC
Deborah Jackson	NRC
Patrick Hiland	NRC
Michael Mayfield	NRC
Russell Sydnor	NRC
Paul Rebstock	NRC
Mike Waterman	NRC
Mike Franovich	NRC
* Charles Ogle	NRC
* Keith Graham	GE
* Dave Blanchard	AREI
* Don Chase	Sciencetech

* Participated Via Teleconference

AGENDA FOR THE OCTOBER 22, 2007 PUBLIC MEETING
BETWEEN THE DIGITAL INSTRUMENTATION AND CONTROL STEERING COMMITTEE
AND NUCLEAR ENERGY INSTITUTE (NEI) REGARDING
DIGITAL I&C PROJECT

<u>TOPIC</u>	<u>PRESENTER</u>	<u>TIME (~)</u>
1. Opening Remarks	Jay Robinson Jack Grobe NEI	10 min
2. Introductions, New Members	All	5 min
3. Long Term Activities: Expectations, Interaction, and Areas of Focus	William Kemper Steven Arndt	10 min
4. TWG 1-6 Plans Moving Forward	TWG Leads	25 min
5. Process for Feedback During ISG Implementation	William Kemper Steven Arndt	10 min
6. Status of ACRS Recommendations	Russell Sydnor Steven Arndt NEI	10 min
7. TWG 7 Fuel Cycle Facilities	Deborah Jackson	10 min
8. Public Comments		

Memorandum to John Grobe from Jay Robinson

SUMMARY OF PUBLIC MEETING OF THE DIGITAL INSTRUMENTATION AND CONTROL
STEERING COMMITTEE WITH THE NUCLEAR ENERGY INSTITUTE TO
ADDRESS THE DIGITAL INSTRUMENTATION AND CONTROL PROJECT PLAN AND
RELATED SUBJECTS

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