



Category 2 Public Meeting  
Digital Instrumentation and Control  
Steering Committee

October 22, 2007

- Welcome
- Opening Remarks
  - Jack Grobe
- Introductions

- Issue Remaining ISG
  - Cyber Security 10/31/07
  - Licensing Process (Operating Rx) 11/30/07
  - Risk Informing Digital I&C 03/31/08
- Complete Near-Term Activities within the Project Plan to Finalize ISG
  - Risk Informed
  - Fuel Cycle Facilities
  - Remaining Human Factors Issues
  - Licensing Process (New Rx/FCFs)

- Complete Long-Term Activities to Incorporate ISG into regulatory documents
  - Continue to refine and enhanced guidance as necessary
  - Continue interactions with industry to have ISG incorporated into industry standards
  - Revise regulatory documents (RGs, NUREGs, SRP)
  - Interact with ACRS (as needed)

- Draft interim staff guidance (ISG) with cross-correlation table ready for final review/comment.
- Next public meeting - October 25, 2007
- ISG to be issued by end of October 2007
- NEI to submit NEI 04-04 Rev2 to NRC for review and official acceptance soon after draft ISG is finalized by TWG staff
- New regulatory guidance under development in support of proposed rule 73.55(m) - Cyber Security. Draft RG for comment by early 2008

- Interim Staff Guidance Issued on 9/28/07
- Long Term Activities
  - Evaluation of Failure Data
  - Classification of Systems
  - Diversity Strategy
  - Operator Response Time Evaluation
- Next TWG Meeting on 10/25/07



## **TWG 3 Risk Informing Digital I & C Long Term Activities**

Mike Franovich, NRR

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- NRC staff has drafted a conceptual paper for problem #1
  - NRC seeks early feedback from TWG members to support draft ISG
  - Paper to be shared with Industry Counterparts before next TWG meeting
- Next TWG meeting tentatively scheduled for Nov 6, 2007
- Purpose of next TWG meeting is to discuss the staff's paper in support of the pending draft ISG. Problem #2 scheduling and cooperation with EPRI to be discussed.
- Draft ISG to be issued November 28, 2007
- NRC awaiting industry paper on how the PRA sensitivity approach used to assess the D3 ISG 30 minute auto DAS goal satisfies risk-informed expectations of Regulatory Guide 1.174

- **All Near-Term Items Are Complete**
  - Interim Staff Guidance was Issued on September 28, 2007
- **Long Term Items**
  - Update of IEEE 7-4.3.2 (anticipated for use ~end 2008)
  - Recommend revisions to RG 1.152 and SRP (6 months after issue of IEEE 7-4.3.2)
  - Issue revisions to RG 1.152 and SRP (to be completed in accordance with normal procedural guidelines (typically about 12-18 months))
  - No additional TWG Meetings are presently Scheduled





## **TWG 5 HICR – Human Factors Long Term Activities**

Michael Marshall, NRO

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- **All Near-Term Activities completed**
  - Interim Staff Guidance Issued on September 28, 2007
- **Long-Term Activities Concerning Computer-Based Procedures**
  - Consider Additional Input From Stakeholders
  - Update NUREG-0700, NUREG-0711, and the SRP
- **Long-Term Activities Concerning Minimum Inventory**
  - Comment on NEI White Paper
  - Consider Additional Guidance For Readily Accessible, Spatially Dedicated, and Continuously Visible
  - Consider applicability to operating plant modernization
  - Update the SRP
- **Long-Term Activities Concerning Graded Approach**
  - Receive and Comment on NEI White Paper
- **Work Closely with TWG 2 Regarding Operator Response Time Evaluation**



## **TWG 6 Licensing Process Long Term Activities**

Timothy McGinty, NRR/Hukam Garg, NRR

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- Provide Guidance to the Industry Regarding the Documents Required by the Staff at Various Stages of Digital I & C Review
- Identify Various SRP Sections, IEEE Standards and Regulatory Guides Which Define the Requirements for the Digital I & C System
- Initial TWG 6 Meeting Took Place on 08/15, Subsequent Meetings on 09/05 and 09/24. Next TWG Meeting Scheduled for 10/22
- ISG for Licensing Process for Operating Reactors Is Scheduled to Be Issued by 11/30
- NEI White Paper on Digital I & C Licensing Process Will Be Issued at a Later Date. (Not Scheduled)
- ISG for COL Applicants Will Be Issued in February, 2008

- **ISG Feedback During Implementation**

- There has been extensive interactions with the public while developing the ISG
- Public comments have been received and incorporated as appropriate
- ISG will be posted on the Digital I&C Website (<http://www.nrc.gov/about-nrc/regulatory/research/digital.html>) for reference and use
- Feedback on ISG can be provided to the staff by:
  - E-mail address ([DIGITAL\\_IC@nrc.gov](mailto:DIGITAL_IC@nrc.gov))
  - “Contact us” on the Digital I&C Website (<http://www.nrc.gov/about-nrc/regulatory/research/digital/contactus.html>)
- Additional public feedback can be provided during the public comment periods for RGs and SRP updates to incorporate ISG.

- RES Actions to Improve the use of Operating Experience for Input into Digital I&C Regulatory Issues and Guidance
  - Commission and ACRS asked the Staff to
    - Continue to work with domestic and international working groups to address digital I&C issues
    - Evaluate operating experience with digital systems in Nuclear and other industries to obtain insights regarding potential failure modes
  - RES activities for operating experience:
    - Complete Short-term staff assessment
    - PM assigned to the OECD/NEA COMPSIS project
      - Collaboration of 12 countries to supply safety failure data and analysis.
    - Failure information from the INPO EPIX database obtained. More details were obtained from the utility Corrective Action Programs via information requests through NRR as applicable

- RES Actions to Improve the use of Operating Experience (continued)
  - INPO interfacing with RES about the procedure for gaining access to the COMPSIS data.
  - Initiated a task, “Industry Survey for Digital I&C Failures”, to investigate digital I&C failures in safety-critical systems and to document failure modes and occurrence frequencies of digital systems.
  - With NRO and NRR, completed a preliminary assessment of Digital I&C Operating Experience
  - Initiated collaboration with EPRI (sharing of Digital I&C Failure data and Operating Experience information) to support an NEI sponsored EPRI analysis of Digital I&C Failures.
  - Meeting with EPRI in November to discuss potential areas for formal EPRI/NRC collaboration on Digital I&C Research areas under the RES/EPRI MOU.
  - Contacted the INPO Manager of Events Analysis to begin discussions on ways to improve sharing of Digital I&C Operating Experience. A conference call is planned in the next few weeks.

- October 16, 2007 letter
  - The ACRS concluded that the first three ISG will help with the review of near-term digital I&C licensing actions
  - ACRS provided two additional recommendations
    - (1) In the long term, an alternative process to the 30 minute criterion should be developed to determine the conditions under which operator manual actions can be credited as a diverse protection function
    - (2) The issue of spurious actuations needs to be examined further
  - The ACRS commended the NRC staff and Industry for the degree of collaboration.

- October 15, 2007 : First public meeting held with the Nuclear Energy Institute (NEI) and other stakeholders to discuss the draft Problem Statements for Task Working Group (TWG) #7 Digital Instrumentation and Control for Fuel Cycle Facilities
- Discussion of the draft problem statements resulted in a revised draft document; however, some additional feed back from NEI is expected before it is finalized for submission to the Digital Instrumentation and Control Steering Committee.
- The TWG plans to meet again on November 16th to review the deliverables for TWG #7.

- **Problem Statement Summary**
  - Problem Statement 1: Cyber Security
  - Problem Statement 2: Common Cause Failures and Diversity and Defense-In-depth
  - Problem Statement 3: Criticality Safety and Double Contingency Requirements
  - Problem Statement 4: Highly-integrated Control Rooms – Communications Issues
  - Problem Statement 5: Common Cause and Systematic Failures in Digital Systems Attributed to Software Errors
- **Deliverable of One Interim Staff Guide to Address the 5 Problem Statements**