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United States Nuclear Regulatory Commission

Protecting People and the Environment

Digital I&C Highly Integrated Control Room Human Factors Task Working Group Meeting With Industry Representatives

August 25, 2008

Rockville, MD

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Agenda

9:00 am	Introductions	ALL
9:10 am	Operator Manual Action	NRC
10:30 – 10:45am	Break	
12:00 pm	Lunch	
12:45 pm	Minimum Inventory	NRC
2:15 -2:30pm	Break	
3:45 pm	Public Questions and Comments	NRC
4:00 pm	Closing and Adjournment	

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Manual Operator Action
DI&C ISG-05

Objective

- Facilitate stakeholder comment by answering questions regarding interpretation or intent of draft guidance
- Facilitate comment resolution by obtaining preliminary stakeholder feedback

Scope

- Manual actions credited in D3 analysis for coping with AOO/PAs concurrent with software CCF
- Supplements guidance in BTP 7-19 and DI&C-ISG-02
- New and existing reactors

Staff Position

Credited actions should be:

- included in EOPs
- executed from within the main Control Room
- demonstrated to be feasible and reliable
- addressed in HFE program consistent with NUREG-0711

Analysis: Time Available

- Use methods and realistic assumptions consistent with BTP 7-19
  - Staff assessing need to develop additional guidance regarding acceptable methods

Analysis: Time Required

- Use a documented sequence (from task analysis, EPGs, EOPs)
- ANSI/ANS 58.8 acceptable for task decomposition
- Alternate methods acceptable for developing time estimates for task components
- Include time margin =/> max. recovery time for any single credible error

Preliminary Validation

- Use methods that are diverse and as realistic as maturity of design allows
- Conduct as an independent confirmation of analysis
- Iterate as design matures
- Document results and submit for NRC review as part of D3 Analysis
- Final approval may be conditioned upon completing open items, ITAAC, License Conditions

Integrated System Validation

- Accomplished as part of HFE program activities per NUREG-0711
- Nominal and TS minimum crews
- Plant-referenced simulator capable of realistically representing AOO/PA with CCF
- Time required + margin <= time available

Performance Monitoring

Provide adequate assurance that:

- Actions continue to be feasible and reliable in the long term
- Design and configuration controls prevent negative impact on D3 analysis
- Training keeps performance at a high level
- Discrepancies from D3 assumptions and constraints are identified and corrected

Rationale

- ISG-5 method for crediting manual operator action provides early feedback in the design and regulatory review process to provide confidence that credited actions will be both feasible and reliable

NRC Responsibilities

- I&C Branches will be the lead reviewers
- Review will be multidisciplinary:
  - HFE
  - HRA
  - I&C
  - Ops
  - Rx Systems

Path Forward

- Obtain stakeholder comment by 9/10
- Complete comment resolution by 9/30
- Publish final ISG by 10/31

Minimum Inventory

Status of Staff SRP Revision

Staff has:

- received revision to industry White Paper, Section 3 and 4, dated 8/18/08
- reviewed 8/18/08 revision and prepared questions for discussion/clarification

Minimum Inventory

Initial Questions related to 8/18/08 revision

- Why are there are no alarms identified as part of minimum in Table 4-1?
- Figure 3-4 seems to be a reiteration of Table 4-1. What is difference/relationship between the table and the figure?
- Figure 3-4 (and Table 4-1), includes the category of "continuing plant operation under conditions of failure or degradation of normally-used HSIs." Using the "new" definition for minimum inventory (focused on reactor shutdown), does this category still apply? What is the rationale for keeping it for minimum inventory?

Next Steps

- Incorporate any changes, as appropriate, to flow diagrams and Table 4-1
- Publish draft SRP for public comment by 12/18/2008