

August 31, 2007

MEMORANDUM TO: W. E. Kemper, Chief
Electrical Instrumentation and Controls Branch
Division of Engineering
Office of Nuclear Reactor Regulation

FROM: Diana Diaz Toro, Project Manager */RA/*
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SUBJECT: SUMMARY OF THE AUGUST 14, 2007, MEETING OF THE DIGITAL INSTRUMENTATION AND CONTROLS HIGHLY INTEGRATED CONTROL ROOM – COMMUNICATIONS ISSUES TASK WORKING GROUP WITH INDUSTRY REPRESENTATIVES TO DISCUSS THE DRAFT INTERIM STAFF GUIDANCE AND PROJECT PLAN

On August, 14, 2007, the U.S. Nuclear Regulatory Commission (NRC) Digital Instrumentation and Control (I&C) Highly Integrated Control Room (HICR) – Communications Issues Task Working Group (TWG) and industry representatives held a Category 2 public meeting at the NRC headquarters in Rockville, MD. The purpose of the meeting was to discuss the HICR – Communications TWG draft Interim Staff Guidance (ISG) published on the NRC Digital I&C website on August 10, 2007, for stakeholder's review.

The meeting was conducted to discuss the current Revision F of the draft ISG (ML072330567) addressing the problem statements identified in the Digital I&C project plan. NEI also transmitted industry comments on the draft ISG (ML072330556). The discussions focused on the definition and clarification of several concepts and words and on Section 3.2, "Human Factors Considerations," of the draft ISG with respect to safety-related controls and displays. NRC staff and NEI representatives clarified changes, language, and comments.

In addition, the NRC staff and industry representatives discussed the fundamental requirements governing the need for safety-grade (SG) controls and indications. The criteria in IEEE Std 603-1991, *Standard Criteria for Safety Systems for Nuclear Power Generating Stations –Description* (IEEE 603-1991), related to manual controls and SG controls and displays was actively discussed. IEEE 603-1991 and 279 do not prescribe requirements for SG controls and indications for safety related components. Instead, it prescribes the SG controls and indications be provided for safety related components at the system level. However, it was suggested that IEEE 279/603-1991 was written at a time when the prevailing design practice was to provide SG controls and indications for safety-grade equipment. Also, the designs of analog SG controls and indications during this period were not integrated into a single control and indication medium, such as non-SG video display workstation, because it was not feasible at that time. Industry representatives at the meeting suggested that, since IEEE 603-1991 and 279 are silent on the requirement for SG controls and indications for safety related components, this equipment could have been designed and installed using non-SG controls and indications. However, this was most likely not done for economic reasons. Some industry representatives

speculated that it was likely less expensive to use SG controls and indications for safety related components than it would have been to use SG to non-SG isolation devices and non-SG controls and indications. The TWG staff expressed disagreement with this position and decided to table the issue until further research could be performed about the matter. IEEE 603-1991 and other regulatory information will be reviewed to adequately address this subject.

The NRC staff further explained that resolution of this comment was beyond the scope of the ISG. The NRC staff recommended the industry submit a Topical Report about the subject for formal consideration and disposition. However, the NRC staff clarified that industry could also provide comments specific to the "Human Factors Considerations" section of the draft ISG. Consequently, the industry provided additional comments. The first comment (ML072330587) discusses manual controls with respect to the IEEE 603-1991, Regulatory Guide 1.62 (RG 1.62), *Manual Initiation of Protective Actions*, Regulatory Guide 1.97 (RG 1.97), *Criteria For Accident Monitoring Instrumentation For Nuclear Power Plants*, and the Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants (NUREG-0800)-Chapter 7 and Chapter 15. Specifically, the comment discusses the sections of these documents that address safety related manual controls at the component level, as well as, diverse and safety related manual controls at the system level. Further, the comment identifies the sections of these documents addressing RG 1.97 Type A analysis, and explains that safety related manual controls must be used for the primary success path; however, non-safety related controls can be used as backup protection for AOOs.

The second comment (ML072330585) proposes changes to Section 3.2 of the draft ISG. In summary, the changes explain that IEEE 603-1991 and RG 1.97 specify design and qualification requirements applicable to instrumentation based on the function of the controls and displays, and that human factors prescribe minimum inventory of instrumentation based on the operator's needs to operate and shutdown the plant. Thus, the IEEE 603-1991 and RG 1.97 requirements apply to minimum inventory based on the function of controls and displays. It is further stated that instrumentation and controls required by IEEE 603-1991 and RG 1.97 that may have less stringent design and qualification requirements, may be included in non-safety related multidivisional control and display stations provided that the required design and qualification requirements are met.

The NRC staff also discussed the interactions between the HICR-Communications TWG and the HICR-Human Factors TWG given that Human Factors is within the scope of the HICR-Communications ISG. The NRC staff clarified that the HICR-Communications TWG draft ISG is not all inclusive and that additional guidance concerning human factors is provided separately.

Summary of Action Items

The following key action items were assigned during the meeting:

- NRC:
 - The NRC staff will review IEEE 603-1991 with respect to safety-related controls and displays, and individual components.
 - The NRC staff will consider industry's comments and incorporate where appropriate. A revised version of the Digital I&C HICR-Communications draft ISG will be publicly available on the NRC Digital I&C website.

Following the meeting, the NRC staff expressed its appreciation to the industry for their participation and comments. An attendance list is provided in the enclosure. The meeting agenda can be found via the Agencywide Documents Access and Management System (ADAMS), Accession Number ML072130160. Please direct any inquiries to Diana Diaz Toro at 301-415-3135, or ddt1@nrc.gov.

Enclosure: List of Attendees

cc w/encl: See next page

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ATTENDEES

MEETING OF THE DIGITAL I&C HIGHLY INTEGRATED CONTROL ROOM –
COMMUNICATIONS ISSUES TWG WITH INDUSTRY REPRESENTATIVES TO DISCUSS
THE DRAFT INTERIM STAFF GUIDANCE AND PROJECT PLAN

AUGUST 14, 2007

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Wes Bowers	Exelon	
David Herrell	MPR Associates	
Peter Lobner	DS&S	
Tom Hayes	Westinghouse	
Ken Scarola	MNES-NAE	(On Phone)
Ron Jarrett	TVA	(On Phone)
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