



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

April 23, 2009

MEMORANDUM TO: Lois M. James, Chief  
Plant Licensing Branch III-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

FROM: G. Edward Miller, Project Manager  
Plant Licensing Branch I-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF MARCH 24, 2009, CATEGORY 2 PUBLIC MEETING  
REGARDING DEVELOPMENT OF INTERIM STAFF GUIDANCE ON  
THE DIGITAL INSTRUMENTATION AND CONTROL SYSTEM  
UPGRADE LICENSING PROCESS

On March 24, 2009, the Nuclear Regulatory Commission (NRC) staff conducted a Category 2 public meeting to discuss the development of guidance for the staff in the Office of Nuclear Reactor Regulation regarding the licensing process for digital instrumentation & control (I&C) upgrades. A notice for this meeting was issued on March 12, 2009, and is available in the Agencywide Documents Access and Management System under Accession No. ML090630096. The attendance sheet is included as Enclosure 1 to this memorandum.

The purpose of this meeting was to foster an open discussion of the format, technical content, and process of the draft interim staff guidance.

The meeting was opened by a demonstration of an NRC staff tracking tool used to monitor open information requests and action items during a digital I&C review. Additionally, it was identified that subsequent meetings would be increased in length to accommodate further discussion.

Following this discussion, I discussed the NRC staff's view regarding the use of license conditions to govern successful performance of the factory acceptance testing after issuance of the amendment. In summary, the NRC does not believe that use of license conditions in this manner is appropriate because the information obtained during the factory acceptance testing is necessary to the NRC staff's regulatory decision.

Then, Paul Loeser, NRR, gave a presentation on the new list of review areas. The basis behind each review area was presented and was discussed with the group.

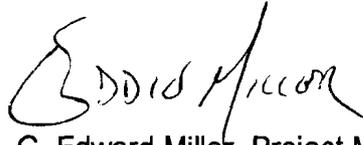
Subsequently, NEI made a presentation that discussed an assessment of the development progress, and suggestions for enhancement of both the procedure and the development process.

L. James

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At the conclusion of these discussions, the meeting was opened for public comments. No public comments were received.

Please direct any inquiries to me at 301-415-2481, or [ed.miller@nrc.gov](mailto:ed.miller@nrc.gov).

A handwritten signature in black ink that reads "G. Edward Miller". The signature is written in a cursive style with a large, stylized initial "G".

G. Edward Miller, Project Manager  
Plant Licensing Branch I-2  
Division of Operating reactor Licensing  
Office of Nuclear Reactor Regulation

Enclosures:

1. List of Attendees
2. NRC Presentation Slides
3. NEI Presentation Slides

<b>Sign In Sheet</b>	<b>Discussion of Draft Guidance on Performing Acceptance Reviews</b>
<b>DATE: March 24, 2009</b>	

DIC-156-06

Name	Organization
Ed Miller	NRR/DORL
Jim Riley	NEI
Paul Loesen	NRR/DE/EICB
JEFF PATTERSON	PG+E Diablo Canyon
Gordon Cleaton	NEI-ENGINEERING
Robert Gill	Duke Energy
MIKE SCHUPMAN	NEI
BILL KEMPER	NRR/DE/EICB
Jerry Wermiel	NRR/DE
Lois James	NRR/DORL
Robert Slough	Luminant Power Co.
Kimberley Corp	NRO/DE/ICE2
Sean Smith	Lockheed Martin NS&S
Mark Stofko	Westinghouse
Tom Hayes	Westinghouse
Timothy Dennis	ANS Standards Committee
Terry Jackson	NRO/DE/ICE1
John Hefler	Altrax (PG&E)
Rob Austin	EPR I
JEFF BIRD	Northrop Grumman
Leslie Totsuka	Hitachi GE Nuclear Energy
Stewart Baker	NRR
(+) ADDITIONAL	PARTICIPANTS VIA PHONE



## **Digital I&C Licensing Process Task Working Group-6**

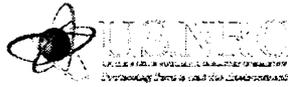
March 24, 2009

Ed Miller, Project Manager  
Division of Operating Reactor Licensing  
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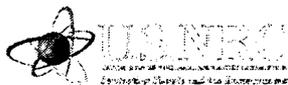
## **Digital I&C Licensing Process**

- Agenda
  - Introduction Licensing Process
  - Demonstration of Open Item Tracking Tool
  - Use of License Conditions
  - Discussion of Proposed Review Areas
  - Discussion of NEI Comments
  - Public Comments



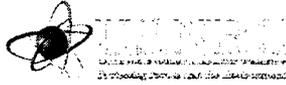
## Digital I&C Licensing Process

- Demonstration of Open Item Tracking Tool
  - Specific tool won't be specified in procedure
  - Procedure will encourage tracking
    - PM/Technical Staff may use other methods as appropriate



## Digital I&C Licensing Process

- Review Areas
  - Hardware Architecture
  - Hardware Design Process and Quality Control
  - Communications
  - Cyber Security
  - Software Architecture
  - Software Design Process
  - System Qualifications
  - Diversity and Defense-in-Depth
  - IEEE 603 Compliance
  - IEEE 7-4.3.2 Compliance
  - System, Hardware, Software, and Methodology Modification
  - Technical Specifications



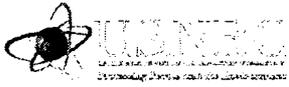
## Digital I&C Licensing Process

- Discussion of NEI Comments



## Digital I&C Licensing Process

- Schedule
  - Conference Call, April 14, 2009 to discuss status.
  - Public Meeting, April 28, 2009, to discuss comments on draft process and review areas & Present ~6 review areas.
    - Some are old review areas modified to fit with revised list
  - Conference Call, May 12, 2009 to discuss status.
  - Public Meeting, May 27, 2009, to discuss outstanding issues on previous review areas & Present remaining review areas.
    - Meeting date moved to Wednesday to accommodate Memorial Day.



## **Digital I&C Licensing Process**

- Public Comments

# DI&C Project TWG#6 Meeting

March 24, 2009



## Overall Perspective

- **Progress not what anticipated**
- **Restate Licensing Principles**
- **Begin with the end in mind**



## Finding ('finish line') (1 of 2)

### ▶ **Must be defined in DI&C-ISG-06**

### ▶ **Proposed wording:**

- Regardless of the type of application, the fundamental purpose is to demonstrate that the facility and equipment, the operating procedures, the processes to be performed, and other technical requirements offer reasonable assurance that the applicant will comply with the regulations of 10 CFR Part 50 and that public health and safety will be protected (RG 1.206, page C.I.7-1).

NEI

## Finding ('finish line') (2 of 2)

### ▶ **DI&C-ISG-06 must provide guidance of how to accomplish**

- **Technical objectives for each section**

NEI

## Requirements & Guidance (1 of 2)

### – References versus Reiteration

- Do not need primer or reiteration of any of the references
- Need to point to specific section
- Introduce guidance where needed

NEI

## Requirements & Guidance (2 of 2)

### – Need process for identifying which requirements are current

- An appendix could summarize current editions of RegGuide, ISGs, etc.
  - Numbers
  - Dates
  - Would be most current; only appendix needs changing
- Only Appendix would need to be updated

### – Staff position dependent on use of current editions

NEI

## Phase Zero Meeting (1 of 3)

- Evaluation of plans of submitting and referencing
- Identifies what will be submitted and what will be referenced
- All of Appendix B.3 would have to be addressed in LAR
  - Eliminate Appendix B.1 & B.2; Use only B.3 contents (total set of what is required)

NEI

## Phase Zero Meeting (2 of 3)

- All of Appendix B.3 would have to be addressed in LAR
  - Eliminate Appendix B.1 & B.2; Use only B.3 contents (total set of what is required)
  - Make one list
    - Link DI&C-ISG-06 text to items on list
    - Define titles; clarify content
    - Documents identified as 'typical'  
For audits, not submittal

NEI

## Phase Zero Meeting (3 of 3)

- **Audit list is in DI&C-ISG-06 phase 2**
- **Nothing specified for Inspection Phase**
- **Agree on schedule of submittal, review, and approval**
  - **Eliminate predetermined time period (12 month)**
    - **Provide flexibility case-by-case**
  - **Information for docket**
  - **Documents for audit**

NEI

## Level of Tier Concept (1 of 2)

- **LAR submittals**
  - **DI&C-ISG-06 text does not separate by tiers now**
  - **Individual SAR content ensures no repeatable line between Tiers**

NEI

## Level of Tier Concept (2 of 2)

- **Reference previously submitted/approved documents (Topical Reports)**
  - Allows that vendors submit and are responsible for the platform parts
  - Focuses licensee on licensee responsibilities
  - Incorporate-by-reference vendor approved items
- **No one would ever be in Tier 1**

NEI

## Level of Detail (1 of 4)

- **Clear statement necessary to identify Information to be provided**
  - The guidance for “information to be provided” needs to state what specific information is needed to make the regulatory finding (Docket)

NEI

## Level of Detail (2 of 4)

- A clear statement as to what information is required for the finding versus that information that would be used to validate or confirm the submittal
  - Processes and methodologies would be needed for the finding
  - Detailed results obtained using these would be confirmation activities



## Level of Detail (3 of 4)

### Examples:

- Verification & Validation
  - Docketed information
    - Evaluation to demonstrate conformance to BTP 7-14 Section B.3.2.2 (Acceptance Criteria for Software Verification and Validation Activities), RegGuide 1.168 (IEEE Std 1012), etc.
  - Auditable information
    - Requirement document
    - Specifications / Process document
    - Codes



## **Level of Detail** (4 of 4)

### **– Communication between channels**

#### **• Docketed information**

- Evaluation to demonstrate conformance to DI&C-  
ISG-04

#### **• Auditable information**

- Requirement document
- Specifications
- Codes

### **• Docket versus Audit**

#### **• Information for docket**

#### **• Documents for audit**



## **License Condition** (1 of 2)

### **• Auditable items**

- Need to define separation of 'Life Cycle Activity Groups'
- For example, the concept is shown: BTP 7-14 rev 5 Figure 7-A-1 of separation (IEEE 1012 table contents)
- Good start for Appendix B 'master list'



## License Condition (2 of 2)

- **Exceptions need to be addressed up front**
  - Tech Specs
  - Topic by topic bin for each item
- **Anything beyond design phase would be in 'License Condition'**
- **Break point usually between design and implementation phase**
  - FAT and results should be in integration phase

NEI

## DI&C Project TWG#6 Meeting

March 24, 2009

NEI

NUCLEAR  
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L. James

- 2 -

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 RidsRgn4MailCenter Resource  
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 CTucci, NRR  
 WKemper, NRR/DE

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 RidsRgn1MailCenter Resource  
 RidsRgn3MailCenter Resource  
 LPLI-2 R/F  
 RidsAcrcAcnw\_MailCTR Resource  
 RidsOgcRp Resource  
 JAdams, EDO, Region II  
 RidsPMGMiller Resource  
 RidsNrrDorLpl3-1 Resource  
 TFredette, NRO/DE  
 AHowe, NRR/DORL

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DATE	4/13/09	4/13/09	4/23/09

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