

# **MP4B**

## **Strategic Assessment for Modernization of the NRC's Digital I&C Regulatory Infrastructure**

### **DI&C Real World Challenges**

Ken Mott  
Modernization Plan 4B Working Group  
April 4, 2019

---

---

# Agenda

- Meeting Objective
- MP4B - Modernization of the DI&C Regulatory Infrastructure Overview
- January 31<sup>st</sup>, 2019, Industry DI&C Listed Barriers
- Industry Presentation of Real World Examples to Listed Barriers
- Discussion of Industry's Real World Barrier Examples
- Discussion of other Identified Potential DI&C Barriers
- Types of Potential Barriers and Challenges
- Discussion of Possible Solutions to Industry Barriers
- Opportunity for Public Comment
- Action Items Discussion / Closing Remarks

---

# Meeting Objective

The meeting objective for today:

Create a “Consensus List” of remaining barriers/challenges to DI&C efficient review that are supported by real world examples. This task will be completed by:

- Providing industry the opportunity to submit real world examples to demonstrate their barriers to efficient DI&C regulatory review that were presented at the January 31<sup>st</sup>, 2019, public meeting
- Provide industry with the opportunity to describe other potential barriers to efficient DI&C regulatory evaluation
- Have an open discussion about the real world examples to support common understanding of barriers/challenges
- Discuss possible solutions to the barriers and associated real world examples

---

## MP4B - Overview

### Broad Assessment for Modernization of DI&C Regulatory Infrastructure

The MP4B working group is in the process of a comprehensive assessment of the Digital I&C regulatory infrastructure. This assessment will:

- Focus on the scope identified in the SRM to SECY-15-0106
- Utilize existing agency work that has been completed to avoid duplication of effort and complete assessment in a timely efficient manner
- Seek input from the public and the various stakeholder communities
- Focus first and foremost on guidance change within current DI&C regulatory structure

---

# January 31<sup>st</sup>, 2019, Industry DI&C Listed Barriers

## 1) Common Cause Failure:

- BTP 7-19 guidance has evolved over the years and expanded the scope of the SRM-SECY-93-087 policy
- Concerns with SRM-SECY-93-087

## 2) Software Development Standards and Guidance:

- Software development standards for safety-related SSCs are not commensurate with safety and not aligned with current technology
- BTP 7-14 Guidance does not follow a graded and risk-informed approach

## 3) I&C System Architecture Development

- Consider international guidance related to the design and development of I&C system architectures

## 4) Limited Functionality I&C Devices

- Limited Functionality I&C Devices

## Discussion of other Identified Potential DI&C Barriers

### Preliminary List of Other Identified Remaining DI&C Challenges

ID	Description
1	Efficiency of guidance for HDL programmable devices and similar hardware/firmware
2	Efficiency of guidance for risk informing Digital I&C review
3	Efficiency of a simple method for navigating the regulatory infrastructure
4	Efficiency of guidance and flexibility in the use of D3 assessments
5	DI&C Systems developed for use outside the United States may not conform to US regulatory criteria but may nevertheless be of adequate quality and dependability
6	Concerning Commercial Grade Dedication (CGD) <i>(It is not clear how CGD applies to complex DI&amp;C systems or to software)</i>

# Types of Potential Barriers and Challenges

## **Demonstrating Safety**

- Guidance or criteria not commensurate with actual risk
- Alternate ways to demonstrate safety
- Guidance or criteria does not reflect current science or new technologies

## **Regulatory Efficiency**

- Written guidance or criteria ambiguous
- NRC implementation & interpretation unclear or inconsistent
- More efficient or quicker ways to demonstrate safety

---

# Action Items Discussion / Closing Remarks