

MP4B

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

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Modernization Plan 4B Working Group
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- DI&C Regulatory Challenges
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Introduction

The Integrated Action Plan's (IAP) Modernization Plan 4B (MP4B) strategic assessment of the digital instrumentation and control (DI&C) regulatory infrastructure has commenced. The MP4B working group (WG) members are:

Name	Role	NRC Office
Ken Mott	Lead	Nuclear Regulatory Research (RES)
Paul Rebstock	Member	
Bernard Dittman		
Huda Akhavannik		Nuclear Reactor Regulation (NRR)
Dinesh Taneja		
Norbert Carte		

Objective

To submit recommendations, consistent with the SRM to SECY-15-0106, that would provide an improved DI&C regulatory infrastructure that integrates performance-based and technology-neutral safety engineering concepts, to assist stakeholders in demonstrating the safety of DI&C systems, and to assist the NRC staff in performing regulatory reviews and DI&C system inspections in an efficient, effective, consistent, and risk-informed manner.

Strategic Assessment Approach

The research tasks of the DI&C strategic assessment will:

- Leverage existing work that has been completed assessing safety critical review processes, methods, and analysis
- Review existing DI&C documented assessment work, ongoing licensing reviews and research efforts, lessons learned from operating experience, lessons learned from other IAP MPs, insights from other safety-critical industries, and international perspectives.

MP4B Project Milestones

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1. Begin to develop strategic plan to modernize overall regulatory infrastructure	October 2017 (c)
2. Initial evaluation of lessons learned from MPs #1-4A	April 2018 (c)
3. Initial coordination with stakeholders to identify potential regulatory gaps and potential options for improving the regulatory infrastructure	July 2018 (c)
5. Begin strategic assessment to identify and provide DI&C regulatory infrastructure modernization recommendations	December 2018 (c)
6. Stakeholder public strategic assessment meeting	January 2019
7. Complete strategic assessment of the overall DI&C regulatory infrastructure	March 2019
8. Develop recommendations to improve and modernize DI&C regulatory infrastructure consistent with the SRM to SECY-15-0106	April 2019

DI&C Regulatory Challenges

Several themes of DI&C regulatory challenges that the MP4B WG will assess and provide recommendations to improve the licensing review guidance for DI&C Systems are:

- Moving toward a DI&C regulatory review approach that is guided by fundamental safety principles and performance-based, technology neutral, and risk-informed graded approach.
- Process for consolidating and organizing new and operating reactor Regulatory Guides, Branch Technical Positions, Interim Staff Guidance, and review plans.
- Providing methods that will enable the use of alternative codes and standards.
- Treatment of software with respect to development, quality assurance and reliability/dependability.

Comments / Questions