Multinational Design Evaluation Program (MDEP) Issue-Specific Digital I&C Working Group (DICWG)

Status

NEA/MDEP Conference on New Reactor Design Activities

September 10-11, 2009

Overview of DICWG

- Currently Active Members
  - Canada, Finland, France, Japan, Republic of Korea, Russian Federation, United Kingdom, and the United States
  - Chair: US
- Participation of representatives from
    - IAEA
    - IEC
    - IEEE
- NEA providing technical secretariat support

Key Objectives

- Evaluate the similarities and differences in standards and regulatory practices
- Develop common regulatory practices and move toward harmonization
- Influence convergence of standards
- Share knowledge and insights
- Increase regulatory cooperation
- Cooperate with design-specific working groups

Accomplishments

- Developed
  - Program plan
  - Communication plan
  - Problem-solving model
- Held four successful meetings
- Identified priority issues
- Developed and reviewed comparison of standards
- Engaged designers/vendors for input
- Engaged IEC and IEEE for participation
- Drafted letters to IEC and IEEE suggesting convergence
- Made a substantial progress in developing common regulatory positions
- Made MDEP library operational for the working group

Quick Inquiries

- A structured model to promote information sharing among DICWG members
- Efficient method for sharing of expert knowledge, regulatory documents, operating experience and lessons learned
- Members benefited

Common Regulatory Practices

- Under development
  - Software common cause failure (US)
  - Software tools (UK)
  - Software Verification and Validation (Japan)
- Planned
  - Complex Electronics (France)
  - Data Communications (Korea)
  - Common position on key principles for digital I&C Systems in Nuclear Power Plants (US)
  - … (TBD)
- To promote convergence/harmonization of standards and regulatory practices

Challenges

- Differences in regulatory practices, standards, regulations, reactor designs, and experience
  - Takes time to understand each other
- Convergence of high-level topics
  - Classification schemes

Path Forward

- Continued timely sharing of information and cooperation among members
- Continued development of common regulatory practices
- Continued influence and promotion of convergence and harmonization of standards
- Continued engagement with stakeholders

Long-Term Vision

- Common regulatory practices completed/updated for key digital I&C issues
  - Lessons from design-specific working groups captured
  - Endorsed by Steering Technical Committee
  - Approved by the Policy Group
- Progress made toward harmonization/convergence of standards
- More efficient and effective safety decision making and licensing process for new reactor I&C design
- Increased stakeholder confidence