

3rd Multinational Design Evaluation Program (MDEP) Conference on New Reactor Design Activities

Daniel J. Santos
Chair of Digital I&C Working Group (DICWG)

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- Current Participants
 - Canada, Finland, France, India, Japan, People's Republic of China, Republic of Korea, Russian Federation, Republic of South Africa, Sweden, United Arab Emirates, United Kingdom, United States
- Collaboration with
 - IAEA
 - IEC
 - IEEE
- NEA providing technical secretariat support

DICWG MEMBERS



Key Objectives

- Enhance regulatory cooperation and knowledge transfer among members
- Identify similarities and differences
- Collaborate towards harmonization of standards
- Develop generic common positions to address issues related to DI&C systems

- Published 9 common positions
- Identified and progressing on the remaining 3 positions in accordance with approved program plan
- Collaborated with IAEA, IEC and IEEE to identify common issues, influence standard revisions, and encourage joint-logo standards
- Performed study of the various I&C safety classifications
- Collaborated among members on approaches to resolve I&C issues and shared regulatory experiences
- Established and maintained the MDEP library for the DICWG

Generic Common Positions	Lead
1. Treatment of Common Cause Failure Caused by Software within Digital Safety Systems	U.S./ Canada
2. Software Tools for the development of software for safety systems	U.K.
3. Verification and Validation throughout the life cycle of digital safety systems	Japan
4. Data Communication Independence	Korea
5. Treatment of Hardware Description Language (HDL) programmed devices for use in nuclear safety systems	France
6. Simplicity in Design	U.S.
7. Qualification of Industrial Devices of Limited Functionality	IAEA

Generic Common Positions	Lead
8. Impact of Cyber Security features on digital I&C safety systems	U.S.
9. Design Principles for the Overall I&C Architecture	IAEA/France
10. Configuration Management for Software – early stages	Finland
11. Digital I&C system pre-installation and initial on-site testing	Russian Federation
12. Use of Automatic Testing in Digital I&C systems as part of surveillance testing	Korea

- Agreement on common terminology
- Differences in regulatory practices, standards, regulations, reactor designs, and experience
- Differences in classification schemes and overall approach to demonstrate safety

- Survey results demonstrate that the member countries found the common positions useful for new reactor regulatory work.
- Several member countries stated that the CPs will be directly incorporated or referenced in the regulatory framework of their country. Examples include:
 - Canada-All CPs will be referenced in the new CNSC I&C regulatory document.
 - South Africa- Recent regulatory position paper incorporated all CPs.
 - Russia-All approved CPs are being incorporated into new and old Federal codes and regulations.

- Member countries found that additional topics could be addressed by the DICWG. Examples include:
 - Control room issues (e.g. human factors, digital displays with soft controls)
 - Hazard analysis
 - Equipment and Environmental Qualification
 - Reliability
 - Quality
- Member countries generally found that their organization is very supportive of their continued involvement in the DICWG beyond 2015.

- Continued development of generic common positions in accordance with publicly available program plan
- Continued timely sharing of information and cooperation among members including frequent interactions with other MDEP working groups, and STC
- Continued coordination with Standards organizations and other stakeholders to promote convergence and harmonization of standards
- Execute DICWG Transition Plan

DICWG Transition Plan

- Maintain current schedule of three meetings each year through the end of calendar year 2015 to complete and publish remaining common positions.
- Conduct program reviews in Q4 2015 and in 2016, to address the maintenance of existing GCPs, guidance from STC, and potential new issues.
- By Q4 2016, commence an orderly closure of all activities and potential transition of all MDEP work to another international organization, to be determined.

MDEP DICWG Chair – Daniel Santos,
Daniel.Santos@nrc.gov

NEA technical secretariat –
Getachew Tesfaye, getachew.tesfaye@oecd.org
Julien Husse, julien.husse@oecd.org

MDEP url for generic common positions,
<http://www.oecd-nea.org/mdep/working-groups/dicwg.html>