

2nd Multinational Design Evaluation Program (MDEP) Conference on New Reactor Design Activities

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

September 15, 2011

- Current Members
 - Canada, China, Finland, France, Japan, Republic of Korea, Russian Federation, South Africa, United Kingdom, and the United States
- Collaboration with
 - IAEA
 - IEC
 - IEEE
- NEA providing technical secretariat support



CHUN, Gilbert De VOS, Marcel LOJK, Robert NEWLAND, David	Canada	BESTER, Peter PETLANE, Bernard P. ROKITA, Slavek	South Africa
FU, Jie HAO, Xiaofeng WANG, Zhongqiu YIN, Dejian	China	JENNINGS, Bob TATE, Richard YATES, Bob	United Kingdom
JOHANSSON, Mika VALTONEN, Keijo WAHLSTROM, Kim	Finland	ZHANG, Deanna SANTOS, Daniel (Chair) WILLIAMS, Donna ASHCRAFT, Joseph	United States
BRONSART, Philippe GASSINO, Jean REGNIER, Pascal	France	JOHNSON, Gary	IAEA
ITO, Juichiro NAGAE, Hiroshi TAKITA, Masami KAWAGUCHI, Ken	Japan	BOUARD, Jean-Paul	IEC
JI, Seong Hyun	Republic of Korea	AGGARWAL, Satish	IEEE
GONCHUKOV, Victor GRISHMANOVSKAYA, Anna KLOPKOV, Valery	Russian Federation	BURKHART, Lawrence KIM, Byung Soon	NEA

- Enhance regulatory cooperation
- Identify similarities and differences
- Make progress towards harmonization/convergence of standards
- Development of generic common positions to address issues related to DI&C systems

- Published three positions on Simplicity, Software Tools, and Communications
- Identified and progressing on 10 other positions
- Correspondence to IEC and IEEE identifying common issues
- Provided feedback at the IEEE Nuclear Power Engineering Committee (NPEC) for 4 potential new IEEE standards
- Performed study of the various I&C safety classifications
- Established and maintain the MDEP library for the DICWG

- A structured and efficient method for soliciting and sharing of expert knowledge, regulatory documents, operating experience and lessons learned
- Facilitate identification of new generic common positions

Generic Common Positions	Lead
1. Software Common Cause Failures in Safety Systems	U.S./ Canada
2. Software Tools for the Development of Software for Safety Systems – NEA public website	U.K.
3. Verification and Validation throughout the life cycle of safety systems using digital computers	Japan
4. Complex Electronics	France
5. Data Communication Independence – NEA public website	Korea
6. Simplicity in Design – NEA public website	U.S.
7. Qualification of Industrial Digital Devices of Limited Functionality for Use in Safety Applications	IAEA

Generic Common Positions	Lead
8. Safety Issues Related to Interactions Between Safety and Security	U.S.
9. System Architectural Considerations for Systems Classified at the Highest Safety Level – early stages	IAEA
10. Configuration Management for Software – early stages	Finland
11. Factory and Site Acceptance Testing – early stages	Russian Federation
12. Coping with CCF – early stages	France / U.K.
13. Surveillance Testing – early stages	Korea

- Evaluated relevant standards for similarities and differences
- Encourage IEEE and IEC to work on joint-logo standards
- Provided feedback to IEEE proposed standards for I&C
- Planning to review IAEA Safety Guide for Instrumentation and Control Systems in Nuclear Power Plants

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

- Continued timely sharing of information and cooperation among members including frequent interactions with design-specific DICWG, other MDEP working groups, and STC.
- Continued development of generic common positions
- Identify research needs for areas where working group concludes that the current level of technical knowledge is insufficient to support establishment of a common position
- Continued coordination of convergence and harmonization of standards

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

NEA technical secretariat – Byung-soon Kim byung-soon.kim@oecd.org

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