

# Multinational Design Evaluation Programme

## MDEP DI&C WG Liaison Report

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IEEE NPEC 17-01 Meeting

# DI&C Common Positions

- [Generic Common Position DICWG-01: Common Position on the Treatment of Common Cause Failure Caused by Software within Digital Safety Systems.](#)
- [Generic Common Position DICWG-02: Software Tools](#)
- [Generic Common Position DICWG-03: Verification and Validation throughout the Life Cycle of Safety Systems Using Digital Computers](#)
- [Generic Common Position DICWG-04: Communication Independence](#)
- [Generic Common Position DICWG-05: Treatment of Hardware Description Language \(HDL\) Programmed Devices for Use in Nuclear Safety Systems](#)
- [Generic Common Position DICWG-06: Simplicity in Design](#)
- [Generic Common Position DICWG-07: Selection and Use of Industrial Digital devices of Limited Functionality](#) (Update of 20 November 2014)
- [Generic Common Position DICWG-08: Impact of Cyber Security Features on Digital I&C Safety Systems](#)
- [Generic Common Position DICWG-09: Safety Design Principles and Supporting Information for the Overall I&C Architecture](#)
- [Generic Common Position DICWG-11: Digital I&C System Pre-installation and Initial On-site Testing](#)
- [Generic Common Position DICWG-12: Use of Automatic Testing in Digital I&C Systems as part of Surveillance Testing](#)

# MDEP DI&C WG Meetings

- Since NPEC 16-02 there have been two MDEP DI&C WG meetings
  - 25<sup>th</sup> Meeting: July 25 – 27, 2016
  - 26<sup>th</sup> Meeting: December 12 – 14, 2016

# MDEP 25<sup>th</sup> DI&C WG Meeting

- Held at USNRC
- Objective: to drive Common Position 13 to completion
  - “Common Position on Spurious Actuation”
  - Comments from Canada, France and IAEA representatives were provided before the meeting
  - Majority of regulators favor addressing spurious actuation as a transient initiator and this is in alignment with IAEA safety guides
  - Regulators agreed to reorganize the CP to align with a hazard analysis approach
- It was agreed that a new Common Position on the safety justification of an I&C platform would be proposed to the MDEP STC. UK and US representatives took the lead to define the scope for this CP.

# MDEP 25<sup>th</sup> DI&C WG Meeting (cont.)

- Representatives reported back on comments on the CORDEL DICTF draft paper “Safety Classification for I&C Systems in Nuclear Power Plants – Current Status & Difficulties”
  - Many of the comments were corrections or clarifications on a particular country’s classification scheme
- All comments were to be submitted to CORDEL DICTF by 9/2016 and an invitation be sent to the DICTF to attend the next MDEP DICWG meeting.
- After the close of the meeting – representatives visited the Vogtle 3 & 4 construction site.

# 26th MDEP DI&C WG Meeting

- 12-15 December 2016 Paris, France
- Objectives
  - Reach technical consistence on CP-13, “Common Position on Spurious Actuation”
  - Reach consensus on the scope description for a new common position on the safety justification for an I&C platform.
- Other Agenda items included
  - Presentation by Mark Bowell (ONR) on Regulator Task Force on Safety Critical Software for Nuclear Reactors
  - CORDEL DICTF Presentation on their activities

# 26th MDEP DI&C WG Meeting (cont.)

- Common Position 13 – Spurious Actuation
  - Definition for Spurious Actuation was revised in the draft to “Unintended action by an I&C component or system”
  - New definitions for terms used in the CP need to be added
    - Plausible (as in “plausible spurious actuations”) – the term “plausibility is used in the IAEA Safety Guide SSG-39
    - Safety Analysis - probably will use the definition from the IAEA Safety Glossary

# 26th MDEP DI&C WG Meeting (cont.)

- CORDEL DICTF made three presentations
  - Safety Classification Feedback on MDEP DICWG letter
    - Presented the extent in which the MDEP DICWG comments were incorporated into the published paper “Safety Classification for I&C Systems in Nuclear Power Plants – Current Status & Difficulties”
  - Presented paper on “Defence-in-Depth and Diversity, Challenges related to the I&C architecture”
    - Compiles/compares D3 terminology & definitions between regulatory regimes
    - Tabulates challenges in defining D3 (e.g., term Defense-in-depth & term Diversity are really two different concepts that get merged into one)
    - Identifies & recommends potential solutions
  - Troublesome Keywords for Safety Classification of I&C Systems in Nuclear Power Plants
    - Discussed inconsistent definitions for the same terms and similar definitions for multiple terms



# 26th MDEP DI&C WG Meeting (cont.)

- It was agreed to revise CP-4, “Communication Independence”
  - It is one of the early CPs so the format is inconsistent with later CPs
  - Terms safety benefit, data communication, and priority function are undefined
  - Take into account IAEA SSG-39 (I&C Safety Guide)
- 4<sup>th</sup> MDEP Conference proposed for September 12-13, 2017 in London (last one was May 2014, Bethesda, MD)
- Next MDEP DICWG meeting (#27) April 2017 in Finland