

Multinational Design Evaluation Programme MDEP

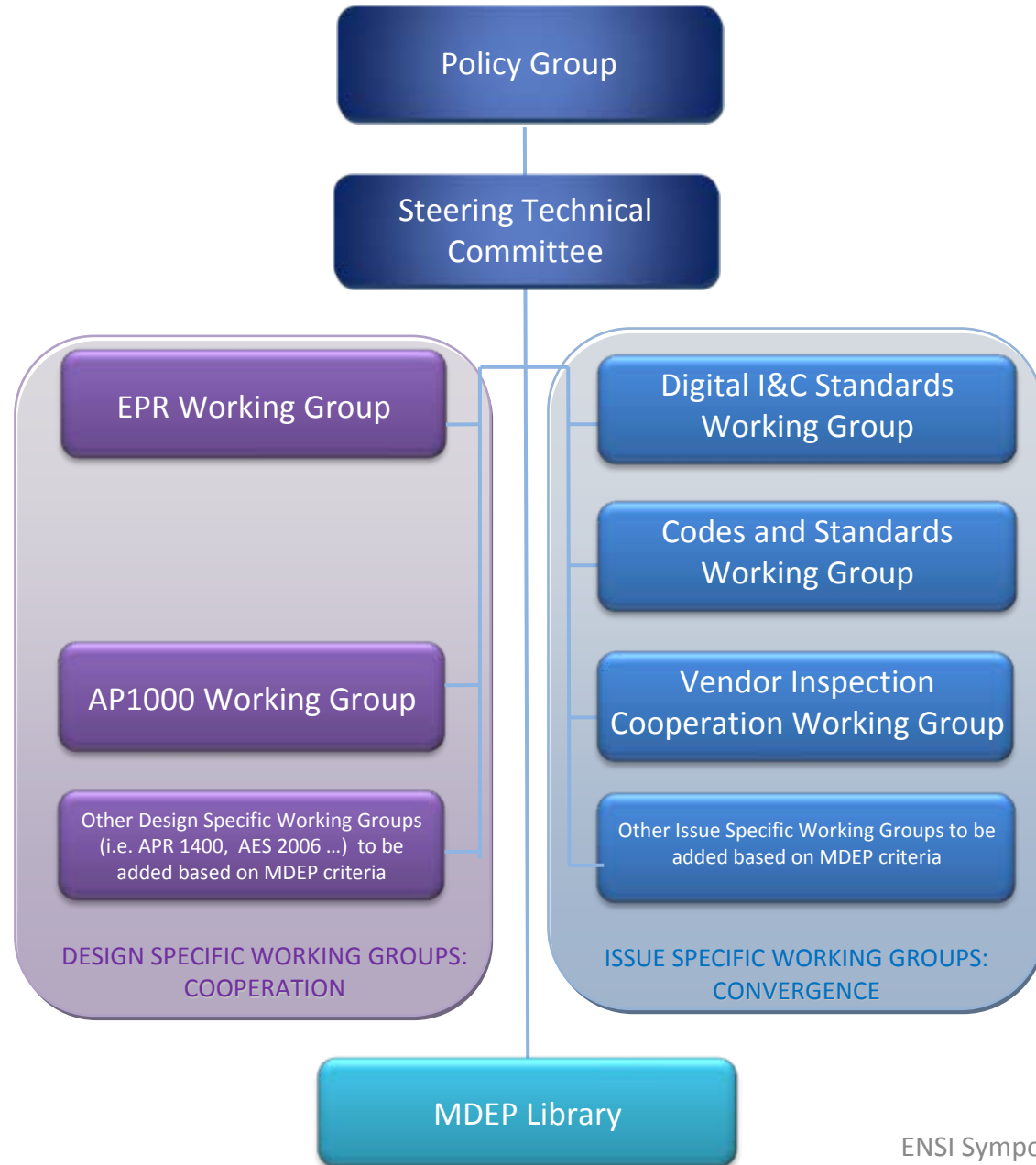
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Regulatory Authorities

An initiative taken by national safety authorities to leverage their resources and knowledge for new reactor design reviews.

- Canada
 - China
 - Finland
 - France
 - Japan
 - Republic of Korea
 - Russian Federation
 - South Africa
 - U.K.
 - U.S.A
- NEA provides technical secretariat
 - IAEA takes part

Structure



MDEP Policy Group

Washington, March 11th, 2010

Agenda

- Report from STC on Working Group activities
- 2009 Annual Report
- MDEP membership
- Sharing information with non-MDEP regulators
- WNA/CORDEL proposal
- 2nd MDEP Conference
- Next meeting June 7th, 2011, Paris

MDEP Policy Group decisions

- Significant progress has been made over the past two years on the overall MDEP goal of enhancing convergence of requirements and practices
- Agreed on the proposed programme of work by STC, short term concrete results are necessary
- Endorsed the publication of the MDEP 2009 Annual Report as a public report
- Requested the NEA to develop simple criteria for full and partial MDEP membership with necessary conditions
- Agreed to respond to WNA/ CORDEL
- Agreed with the proposal made by the STC to share information with non-MDEP regulators
- Supported the organisation of the Second MDEP Conference in 2011

MDEP Steering Technical Committee

- **Last meetings in October 2010 and January 2011 (Paris)**
- **Progress of WG activities**
- **Methodology and process to produce and endorse Common Positions within MDEP**
 - **2 Design Specific Common Positions (AP1000 Squib valves – EPR Digital I&C)**
 - **1 Generic Common Position (DICWG – Simplicity in Design)**
- **Future steps regarding POW (i.e small reactors)**
- **Interactions (WNA/CORDEL, WENRA, etc)**

MDEP Working Groups

Issue Specific Working Groups

Goal : to benefit from other regulators' experiences and to encourage harmonization in regulatory practices and requirements and in industry codes and standards

Design Specific Working Groups

Goal: to share and cooperate on specific design evaluations and construction oversight

Vendor Inspection Cooperation Working Group

- Participants: All MDEP members
- Goal: To benefit from other regulators' inspections of vendors to support new reactor reviews, vendor inspections and manufacturing oversight
- Comparison of regulatory practices and requirements (QA requirements comparison table)
- Coordinating multinational inspections
 - Witnessed inspections - one regulator leading and others observing/consulting
 - Joint inspections – more than one regulator conducting the inspection

Vendor Inspection Cooperation Working Group – current status

- 4 witnessed inspection in 2008, 13 in 2009, 8 in 2010
- Planning joint inspections for 2011
- Updating inspection planning table to document all opportunities to cooperate on inspections
- Revising inspection protocol document
- Comparing QA criteria
- May expand to other types of inspections

Digital Instrumentation and Control Working Group

- Participants: All MDEP members
- Goal: To achieve convergence/ harmonization of regulatory requirements and practices related to digital I&C standards for reactor safety systems
- Identification of main differences among I&C standards (Defense in depth and diversity and data communications)
- Identification and proposition of convergence (software common cause failure and software tools)

Digital Instrumentation and Control Working Group – current status

- A structured model to promote information sharing among DICWG members
- Engaged IEC and IEEE for contribution
- Discussed Safety classification in DI&C Systems
- 8 Generic Common Positions under development

Common Position	Lead country	Status
0. Simplicity in Design	US	Approved by STC
1. Common Cause Failure	US	Under review by WG
2. Software Tools	UK	Under review by WG
3. Software Validation and Verification	Japan	Under review by WG
4. Complex Electronics	France	Under review by WG
5. Communication Independence	Korea	Under review by WG
6. Qualification of Industrial Digital Devices of Limited Functionality for Use in Safety Applications	IAEA	drafted
Adequate Diversity	Canada	Under development

Codes and Standards Working Group

- Participants: All MDEP members
- Goal: To achieve convergence/harmonization of regulatory requirements and practices related to nuclear component design
- Working with standards development organizations (SDOs) to compare pressure vessel codes
- Understanding the technical, regulatory, and historical bases for differences

Codes and Standards

Working Group – current status

- Reviewed the SDOs code comparison table on Class 1 vessel (including ASME, RCCM, JSME and KEPIC)
 - Encourage further developing the code comparison table by the SDOs to include Class 1: piping, valves, and pumps,
 - Promote the comparisons with the Russian Norms and rules and the Canadian Codes
- Continuation of discussions on potential areas of code harmonization
- WNA/CORDEL proposal
- Development of:
 - Fundamental Attributes of Pressure-Boundary Mechanical Codes
 - Essential Safety References of Component Codes
 - Description of Regulatory Practices for Use of Codes and Standards

EPR Working Group

- Participants: Canada, China, Finland, France, U.K., and U.S.A
- Goal: To share and cooperate on specific design evaluations and construction oversight
- General exchange on project status, review and construction
- Cooperation on design reviews (DI&C, PSA, containment and accident analysis, severe accidents)
- Advanced copies of UK's GDA step 3 shared among WG members

EPR Working Group – current status

Last meeting in November 2010 (Shenzhen, China) with site visit to Taishan 19 Nov

- All 6 EPRWG countries were represented (first meeting in China)
- Safety review and construction status discussed
- Exchanged information with technical experts on accidents and transients, digital instrumentation and controls, and probabilistic safety assessment issues

AP1000 Working Group

- Participants: Canada, China, U.K., and U.S.A
- Goal: To share and cooperate on specific design evaluations and construction oversight
- General exchange of project status, review, and construction
- Cooperation on design reviews (Squib valves, Civil and Structural Engineering/Shield building, CRDMs)
- Advanced copies of UK's GDA step 3 shared among WG members

AP1000 Working Group – current status

Last meeting in March 2010

(Sanmen – AP1000 Construction Site)

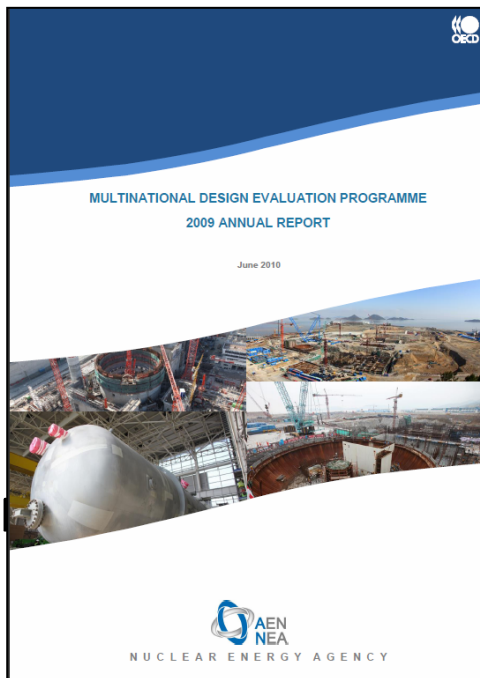
- Civil Engineering discussion
- Squib valves (Common Position developed on technical guidelines – Draft available early 2011)

MDEP Information

More information is available on the NEA webpage

 www.oecd-nea.org/mdep

2009 MDEP Conference Proceedings 



Report

