

MDEP

Multinational Design Evaluation Programme

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

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Membership

- **Current members:** Canada, China, Finland, France, Japan, Republic of Korea, Russian Federation, South Africa, the United Kingdom and the United States.
- **The IAEA takes part in the work of MDEP**

Expected Outcomes

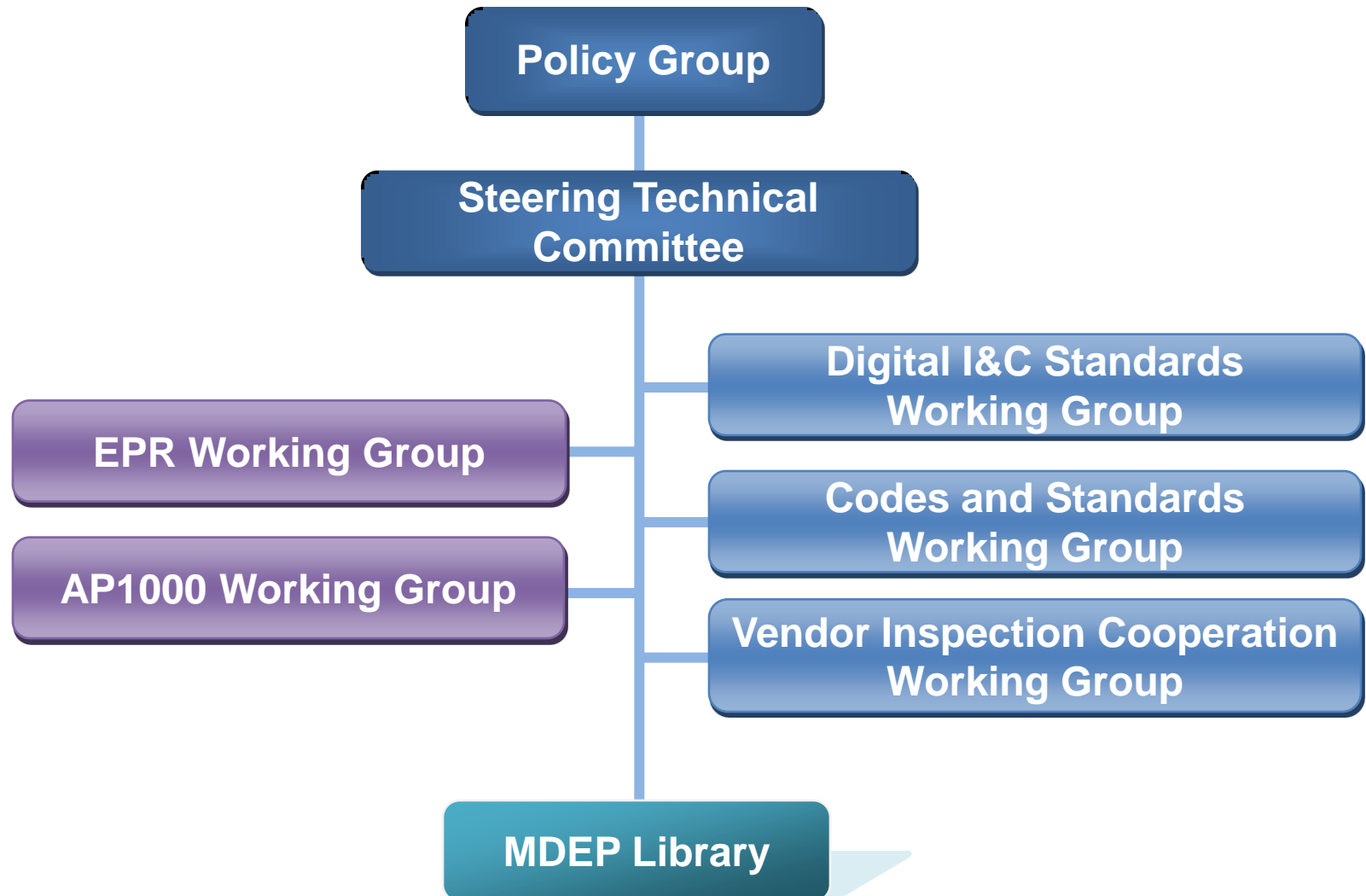
Setting up an enhanced cooperation among regulators :

- To improve the effectiveness and efficiency of regulatory design reviews
- To raise the safety assessment quality and the safety level
- To facilitate convergence of regulatory requirements

Background

- Initially proposed in 2005
- A one-year pilot project conducted in 2006 - 2007 to assess the feasibility of the programme
 - Focused on Severe Accidents, Digital Instrumentation and Controls and Emergency Core Cooling Systems
- Initial two year programme approved and Terms of Reference (ToR) signed in 2007
- Specific recommendations and structure identified and approved in 2008
- Converted into long-term programme in 2009

MDEP Organization



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

Vendor Inspection Cooperation Working Group

- Sharing national feedback and performing multinational inspections on the basis of common QA requirements.

Mechanical Codes and Standards Working Group

- Comparing mechanical Codes to identify areas of possible harmonization and convergence and to preclude further divergence.

Digital Instrumentation and Controls Working Group

- Compare electrical Codes to identify areas of possible harmonization, preclude further divergence, and to converge of approaches of safety requirements for digital I&C systems.

Design-Specific Working Groups

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

EPR WG: Canada, China, Finland, France, U.K. and U.S.

AP1000 WG: Canada, China, U.K. and U.S.

- General exchanges on project status, review and construction including exchanges of safety evaluations and insights
- **Specific Areas of cooperation** identified in each WG :
 - DI&C, PSA, Accidents and Transient analyses, Severe Accidents, Radiation Protection, Fire Protection, Human Factors Engineering, Civil Design issues, and other design areas

MDEP Achievements

- **Design Specific Working Groups (DSWG)**
 - Identification of EPR Technical Issues under evaluation
 - Definition of Design Specific Common Positions
 - Creation of expert subgroups interacting with ISWG
- **Issue Specific Working Groups (ISWG)**
 - Over 15 witnessed inspections performed of vendors in 5 different countries and involving 7 different national regulators
 - Development of common positions on Digital I&C
 - Agreements with standards development organizations
- **MDEP Library**
 - Synopsys of the issues, relevant documents, etc.

Communications

- **Keeping stakeholders informed about MDEP activities, progress, and results**
 - MDEP Conference – September 2009 / Next one in 2011
 - Annual Reports publicly available
 - Sharing products identified in WG Programme Plans
 - Inviting input from key stakeholders and involving them in WG meetings (Standards Development Organizations, vendors, utility groups, etc.)
- **Close relationship to other regulatory bodies and organizations**
 - IAEA
 - NEA / CNRA's Working Group for the Regulation of New Reactors (WGRNR)
 - Western European Nuclear Regulators' Association (WENRA)

MDEP Conference Feedback

- **MDEP is a key programme** for new build activities
- **MDEP is a mid and long-term programme, but short-term concrete results are necessary**
- To be efficient, MDEP needs to concentrate on **a limited number of pertinent topics**
- Each working group needs to have an **action plan**
- Convergence of regulatory practices will finally lead to convergence of regulatory requirements
- **MDEP needs the active involvement of all stakeholders**
 - Regular exchanges between Regulatory Bodies, Vendors and Operators

Main MDEP outputs during 2010-2011

→ Definition of comprehensive programme plans for each WG

- Identification and publication of **Generic Common Positions**
- **Technical reports** to identify and documents similarities and differences among designs, regulatory safety reviews approaches and resulting evaluations,
- **Experience feedback sharing** during construction and commissioning
- **Position on Fundamental Concepts of Codes and Standards harmonization and Strategy on Global Common Code Requirements**
- **Interactions with Standards Development Organizations and IAEA** concerning Digital I&C
- **Common QA Requirements** concerning Vendors

Closing – MDEP Key Messages

- A key goal of MDEP is to make each participating regulator stronger in its role in ensuring the safety of the new reactor fleet worldwide;
- To accomplish this goal, active participation of each MDEP member is essential;
- MDEP is looking for ways to transfer key information and products to those regulators who need it most, i.e., those faced with actual design reviews and inspecting construction of new reactors.

Closing – MDEP Key Messages

- MDEP is a unique initiative to leverage regulatory resources to make regulatory reviews more safety focused;
- Important efforts are provided by regulators to facilitate regulatory requirement convergence;
- MDEP encourages and supports the increasing Industry role to play in making standardization possible;

Cooperation between regulators and Industry has to be reinforced for both achieving standardization and convergence.