

MDEP

Multinational Design Evaluation Programme

C. Viktorsson

IAEA Representative in MDEP Policy Group



IAEA

International Atomic Energy Agency

General

- MDEP (10 countries) is an initiative to develop an approach to leverage the resources and knowledge of the national regulatory authorities who will be tasked with the review of new reactor power plants design.
- The programme is implemented under Terms of Reference for MDEP approved in June 2008 by the MDEP Policy Group.
- The Approval was based on the results of a pilot project concluded early this year.
- The technical programme is overseen by the Technical Steering Committee.
- Secretariat for MDEP is OECD/NEA.
- IAEA takes part in MDEP .

Pilot Project

- **MDEP pilot project was run October 2006 – February 2008, focused on the broad issues of the scope of design review and the use of safety goals.**

Technical areas covered:

1. Severe Accidents Analysis requirements;
 2. Design Basis Accidents (Primary Circuit (LOCA analysis)) requirements;
 3. Digital Instrumentation and Control Systems requirements;
 4. Component manufacturing oversight.
- The insight from the pilot project provided a better understanding of regulatory approaches regarding the areas above and allowed the drafting of an MDEP Programme.

Pilot Project Conclusions

- The pilot project concluded that significant benefits would be gained for all Members by continuing with this effort.
 - Increase cooperation between regulators would encourage and facilitate eventual convergence.
 - Full convergence of regulatory requirements is not feasible in the short term (for reactor designs currently under review).
 - Progress towards convergence of regulatory practices and requirements for Generation IV will be a natural outgrowth.

Pilot Project Conclusions

- With respect to harmonization, MDEP pilot project concluded that:

“In many aspects there is already a significant degree of harmonization at a general level in the form of the IAEA safety standards: further harmonization will be assisted by building on these internationally agreed documents.”

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- The expected results of MDEP will be to:
 - Increase knowledge transfer of regulatory practices in design reviews, including technical evaluations, codes, standards and safety goals, inspection practices, licensing requirements, operating experience..
 - Identify similarities and differences in the regulatory practices and obtain better understanding of technical basis behind;
 - Move towards convergence on reference regulatory practices;
 - Increase stakeholder understanding of regulatory practices on an international basis
 - Enhance the ability of regulatory bodies to cooperate in reactor design reviews, vendor inspections, and construction oversight;
 - Provide input to enhance the IAEA safety standards.
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- Two lines of activities
 - Design specific activities. Working groups open to countries fully engaged in regulatory activities related to specific designs
 - EPR Working Group – France, Finland, USA. Other countries may join later.
 - AP1000 Working Group – China, UK, USA. Other countries may join later.
 - Issue specific activities open to all members
 - Vendor inspection cooperation (FRA)
 - Pressure Boundary Codes and Standards (Can)
 - Digital I&C (USA)
 - Other activities
 - Severe accidents – regulatory review and analysis (UK)
 - Top level safety goals – review ongoing of work of IAEA/NEA
 - Operating experience/construction feedback – consideration of establishing a WG
- Work has started in all areas.

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The IAEA takes active part in the work of MDEP in order to

- Ensure effective communication and alignment with activities in similar areas;
- Provide viewpoints from the IAEA safety standards (SS), which provide a general level of harmonization;
- Enhance further the safety standards based on feedback from its use in MDEP

MDEP Country Participation

- Nuclear regulatory agencies from:

Canada, China, Finland, France, Japan, the Republic of Korea, the Russian Federation, South Africa, the United Kingdom, and the United States.