

Progress in the Multinational Design Evaluation Programme (MDEP)

As previously reported in *NEA News*,¹ the NEA was selected to perform the technical secretariat functions for Stage 2 of the Multinational Design Evaluation Programme (MDEP). The MDEP was set up to enable the sharing of resources and knowledge accumulated by national nuclear regulatory authorities during their assessment of new reactor designs, with the aim of improving both the efficiency and effectiveness of the process. Although its multinational dimension is part of its strength, a key concept of the MDEP is that national regulators will retain sovereign authority over all licensing and regulatory decisions.

Stage 2 of the MDEP focuses on enhanced multinational co-operation and convergence of codes, standards and safety goals. This includes trying to more closely align differing national regulatory frameworks in consideration of new reactor designs. The work was initiated by an MDEP2 Policy Group, chaired by Mr. André-Claude Lacoste, Director-General of the French Nuclear Safety Authority, at the end of 2006. Ten countries² are participating in the first phase of Stage 2, which is soon to be completed.

A one-year pilot project was undertaken at the beginning of MDEP Stage 2 to identify areas for potential convergence of regulatory requirements and enhanced co-operation among regulators. Two aspects were addressed: one broadly based on the licensing basis and safety goals, and another more specific one on component manufacturing oversight. The first was carried out by the MDEP Steering Technical Committee (STC), while a working group was formed to carry out the second.

To work effectively, the Steering Technical Committee focused its attention on the regulatory requirements, programmes and practices in three selected areas: severe accidents, emergency core cooling systems (ECCS) performance, and digital instrumentation and control (I&C). The working group limited the scope of its studies to the highest safety class pressure boundary components (e.g., pumps, valves, piping and pressure vessels). At the start, each of the groups followed similar approaches in that they used surveys and analysed the results to develop a better understanding of the current state of affairs.

Based on initial survey results, the STC concluded that additional meetings of technical experts in each of the three specific areas were necessary to provide more complete information on the regulatory policies and practices in each country and to pinpoint similarities and differences. In addition, a separate expert group met to look at generic issues across the three areas. Each of the expert groups looked at a number of specific aspects and categorised the existing level of similarity (high, moderate or low), and performed a cost-benefit analysis to determine the feasibility of convergence.

For its part, the working group focused on the use of codes and standards, quality assurance/management programmes, inspection programmes by the manufacturer, designated third-party inspection agencies and the regulatory authority. In addition to the survey and group discussions, the group communicated with, and met with, other interested and affected parties including vendors and codes and standards organisations. Group members were also in contact with manufacturers.

The results from the expert groups and the working group were discussed at a fall meeting of the STC, and were used to develop a broad understanding of the regulatory activities in each country and to begin establishing a revised programme that will focus on enhanced co-operation on design evaluations and related inspections. The Steering Technical Committee is currently compiling this information into a final pilot project report, to be completed by January 2008. The Policy Group will then meet to review the report and determine the feasibility of initiating the next step, the MDEP Stage 2 Implementation Phase, during which it is envisaged that additional topics will be pursued. ■

Notes

1. NEA (2006), *NEA News*, No. 24.2, OECD/NEA, Paris.
2. Ten countries are participating in the first phase of MDEP Stage 2, of which seven are NEA members (*): Canada*, China, Finland*, France*, Japan*, the Republic of Korea*, the Russian Federation, South Africa, the United Kingdom* and the United States*. The International Atomic Energy Agency (IAEA) also takes part in the work of MDEP Stage 2.