

Act concerning the sustainable management of radioactive materials and waste

Adopted on 28 June 2006, the Act concerning the sustainable management of radioactive materials and waste prolongs and consolidates the structure established by the well-known “Bataille Act” of 1991, which set out a vast research programme on the possible solutions for managing long-lived, high-level radioactive waste in France. The 2006 Act confirms the continuity and the complementarity of the three axes already selected by the Bataille Act: partitioning and transmutation of long-lived radioactive elements; reversible waste disposal in a deep geological formation; and storage.

Research into the partitioning and transmutation of long-lived radioactive elements is to be conducted in conjunction with studies and investigations into the new generation of nuclear reactors and those concerning accelerator-driven reactors dedicated to the transmutation of waste; a pilot facility is to be commissioned before end 2020. As regards reversible waste disposal in a deep geological formation, licensing is to take place before

2015, and operations at the storage facility should commence in 2025.

The 2006 Act also establishes a national radioactive material and waste management plan, which shall “take stock of existing modes for managing radioactive materials and waste, list the foreseeable requirements of storage or disposal facilities, detail the required capacities of such facilities together with corresponding storage times and, in the case of radioactive waste for which no final management mode exists, determine the objectives to be achieved”. A decree shall specify the requirements of this national plan, to be established and updated every three years.

The Act provides for the establishment of a dedicated fund at ANDRA, the National Radioactive Waste Management Agency, in order to finance investigations and studies relating to the storage and deep geological disposal of radioactive waste. This fund shall be subsidised from an additional research tax on major nuclear installations (INB). A second fund is also established at ANDRA for the construction, operation, maintenance and shut-down of storage and disposal facilities for high-level and long-lived waste. ■

Multinational Design Evaluation Programme (MDEP) Stage 2

The NEA has been selected to perform the technical secretariat functions for Stage 2 of the Multinational Design Evaluation Programme (MDEP). The MDEP was set up to share the 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 the 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.

The initiative was first proposed in July 2005, by the Chairman of the US Nuclear Regulatory Commission, as a Multinational Design Approval Programme. He stated that, “The maturity of the nuclear power technical and regulatory bodies today provides us with an opportunity to enhance safety and security. I believe that the experienced nuclear safety regulators of the world should take this opportunity to share their nuclear safety and technical knowledge, and to participate in the development of better technical frameworks for addressing the safety and security of the anticipated new generations of nuclear reactors.”

Following a series of informal discussions among head regulators across the world, consensus was reached on a three-stage process to enhance co-operation among regulators facing the licensing of new reactors in the near future. The three stages are:

- Stage 1 – Enhanced multilateral co-operation within existing regulatory frameworks;
- Stage 2 – Multinational convergence of codes, standards and safety goals;
- Stage 3 – Implementation of MDEP Stage 2 products to facilitate the licensing of new reactors, including those being developed by the Generation IV International Forum (GIF).

In Stage 1, which began in 2005, nuclear regulators are using the technical data gathered during the certification of a reactor design in one country for its certification in another, thereby avoiding unnecessary duplication of work. The nuclear regulatory authorities of France and Finland are currently working with their American counterparts on the licensing of the European or evolutionary pressurised water reactor (EPR) design.

The Policy Group of MDEP Stage 2 met in September 2006 at NEA Headquarters and adopted its Terms of Reference (ToR). Mr. André-Claude Lacoste, Director-General of the French Nuclear Safety Authority, was elected Chairman of the Policy Group, the US Nuclear Regulatory Commission was selected to chair the Steering Technical Committee. The heads of the regulatory authorities of the ten participating countries¹ also agreed that the NEA should perform the technical secretariat functions for MDEP Stage 2.

The main objective of Stage 2 is to identify common regulatory practices and regulations that enhance the safety of new nuclear reactor designs. Ultimately this is expected to lead to a convergence of codes, standards and safety goals in the participating countries. To this end, two pilot projects have been launched. The first will investigate the licensing basis for new nuclear reactor designs, the scope of design safety reviews and overall safety goals. The second will examine regulatory oversight of components manufactured for nuclear reactors. Stage 2 has the ambitious goal to provide initial results within a year on sectors such as digital instrumentation and control, civil accident requirements and emergency core cooling system requirements.

The expected results of MDEP Stage 2 will be to:

- Allow knowledge transfer through the exchange of information on regulatory practices used

by the participating countries in their design reviews, covering *inter alia* technical evaluations, codes, standards and safety goals, inspection practices, licensing requirements, safety research and operating experience.

- Identify similarities and differences in regulatory practices and obtain insights in order to better understand the technical basis for the differences.
- Seek and achieve convergence on reference regulatory practices in order to facilitate more efficient and effective design reviews, if reasonably practicable.
- Implement the results on specific designs for new reactors.
- Further stakeholder understanding of regulatory practices on an international basis.

In accomplishing the above, it is anticipated that Stage 2 outcomes would constitute very useful input for upgrading IAEA Safety Standards.

Two key elements of NEA support will be to establish an effective communication plan and to ensure adequate interactions with other international initiatives. As part of this task, the NEA Secretariat will prepare a proposal to facilitate the exchange of information on the project, both internally and externally. Adequate interaction with other stakeholders, especially with industry, was considered to be important by the participating countries and will be addressed in the forthcoming meetings of the pilot projects and Policy Group. ■

Note

1. There are currently ten participating countries in the MDEP, including seven 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) will take part in the work of MDEP Stage 2.