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The 2001 Annual Report of the OECD Nuclear Energy Agency (NEA)

A pivotal year for nuclear energy at the international level

In its *2001 Annual Report* published today, the Nuclear Energy Agency (NEA) notes that several substantive developments in the nuclear field, taken in the wider context of energy and the environment, have helped make 2001 a pivotal year in the development of nuclear energy at the international level. Several Member countries reviewed their energy policies, including Belgium, Finland, the United Kingdom and the United States. In addition, the European Commission issued a Green Paper on security of energy supply. The role of nuclear energy was closely examined on this occasion.

Renewed interest in nuclear energy in several Member and non-member countries has led to new initiatives in 2001 regarding the development of innovative reactors and associated fuel cycles. The Generation IV International Forum (GIF), initiated by the US and now carried out by ten countries, aims at identifying nuclear systems meeting the sustainability, safety, reliability and economic goals of the 21st century and the R&D challenges for their deployment by 2030. During the "roadmap" phase of the project, the NEA is providing support to GIF, drawing from its expertise and authoritative knowledge.

Along similar lines, a report was published on *Trends in the Nuclear Fuel Cycle: Economic, Environmental and Social Aspects*, which reviews developments in the nuclear fuel cycle that may further improve the competitiveness and sustainability of nuclear energy systems. Also completed was the "Three Agency Study" on innovative reactor development, undertaken jointly by the International Energy Agency (IEA), the International Atomic Energy Agency (IAEA) and the NEA.

Trends towards electricity market deregulation were confirmed, inciting producers to emphasise economic efficiency and cost reduction in their business strategies. The NEA organised jointly with the International Energy Agency (IEA) a workshop on "Externalities and Energy Policy: The Life Cycle Analysis Approach", during which it was agreed that incorporating external costs, or externalities, into energy prices was an important step towards "getting the prices right".

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At the end of 2001, 360 nuclear power units were connected to the grid in OECD countries, generating approximately 24% of total electricity supply. Eleven units were under construction: one in the Czech Republic, four in Japan, four in Korea and two in the Slovak Republic. Plant lifetime extensions were authorised or being planned in several countries. In the next decade, total electricity generation in the OECD area is projected to increase.

Steady improvement in the operational safety performance of nuclear power plants in OECD countries continued in 2001, with no safety-related events having been identified as directly associated with the introduction of competition in the electricity market. However, regulatory bodies in OECD countries continued to be concerned with maintaining an adequate level of competence and research capability in the long run. In 2001, the NEA continued to compare national experiences with a view to identifying international solutions. In many countries, regulatory bodies are also seeking ways to increase their effectiveness and their contacts with stakeholders.

In the field of radiation protection, the most significant challenge at hand is to better integrate radiation protection within current approaches to risk governance. International principles of radiation protection are therefore in the process of being reviewed. The NEA has contributed to this effort by producing a discussion document addressing several specific areas in which the system of radiological protection could be adjusted to better meet governmental and social needs. Participants at an international NEA workshop reflected on ways to involve various stakeholders in national and international decision making, particularly in areas concerning public health and environmental protection. In the latter area, a series of international fora was developed so that future policies represent international consensus, address national-level needs and can be practically implemented.

In the field of radioactive waste management, important steps took place in 2001 in a number of OECD countries in respect of geologic disposal programmes, among them Finland, Sweden, the United States, Canada and Germany. The NEA focused its attention on policy issues and public confidence in this field. A meeting was held on the step-wise decision-making process and several publications reviewed the concepts of reversibility and retrievability of waste as they may apply to the planning and development of engineered disposal facilities, as well as the role of underground laboratories within national programmes.

Another focus for the NEA in this field was the need for establishing and communicating technical confidence in the safety of deep geologic disposal. A study on this topic was finalised for publication. In addition, a workshop was organised in Finland on stakeholder involvement and confidence in the process of decision making for the disposal of spent nuclear fuel, as part of the NEA Forum on Stakeholder Confidence. Finally, an international peer review was organised by the NEA, in co-operation with the IAEA, of the US Department of Energy performance assessment concerning the proposed site of Yucca Mountain (Nevada) for an underground repository for spent nuclear fuel and high-level waste.

The 2001 Annual Report of the Nuclear Energy Agency is available free online at http://www.nea.fr or in paper format on request from the OECD/NEA Publications Office, Le Seine St. Germain, 12 boulevard des Iles, 92130 Issy-les-Moulineaux, France (nea@nea.fr).