In 2000, the International Atomic Energy Agency (IAEA) continued to act as a catalyst for the development and transfer of peaceful nuclear technologies; to build and maintain a worldwide nuclear safety regime; and to assist in efforts to prevent the proliferation of nuclear weapons.

The forty-fourth session of the IAEA General Conference (Vienna, 18-22 September) adopted resolutions on: strengthening international cooperation in nuclear, radiation and waste safety, and IAEA's technical activities; the safety of radioactive waste management and nuclear research reactors; strengthening the effectiveness of the safeguards system and application of the 1997 Model Protocol Additional to Safeguards Agreements [YUN 1997, p. 1519]; application of IAEA safeguards in the Middle East; safeguards inspections in the Democratic People's Republic of Korea and Iraq; the safety of transport of radioactive materials; measures against illicit trafficking in nuclear and other radioactive sources; and the production of potable water.

In 2000, IAEA membership remained at 130.

Activities

Nuclear safety

IAEA continued to provide nuclear safety services and assistance worldwide. In 2000, the Agency published safety requirements and safety guides for the design and operation of nuclear power plants and provided safety services regarding their siting, design and operation, the safety of research reactors and the regulatory aspects of nuclear safety. Safety missions were undertaken to the Czech Republic, France, Spain, Switzerland, Ukraine and the United States. Safety review missions to research reactors under project and supply agreements were carried out in Colombia, the Democratic Republic of the Congo, Indonesia, Malaysia, Morocco, the Philippines, Thailand and Viet Nam. Overall, IAEA reviews indicated a general improvement in the operational safety of nuclear power plants throughout the world, but the safety of research reactors continued to cause concern, prompting an expanded range of IAEA activities in that area.

IAEA launched the Review of Accident Management Programmes service and developed guidelines for the Peer Review of Operating Safety Performance Experience service. During the year, countries participating in the Incident Reporting System, operated jointly with the Nuclear Energy Agency of the Organisation for Economic Cooperation and Development (OECD/NEA), submitted 68 reports concerning unusual events at nuclear power plants, as well as actual and potential safety problems.

In 2000, the European Atomic Energy Community (EURATOM) acceded to the 1994 Convention on Nuclear Safety [YUN 1994, pp. 925 & 1417], bringing the total number of parties to 53.

Radiation safety

IAEA's radiation safety programme continued to focus on the development of a unified set of safety standards and their application; implementation of the Agency's radiation protection rules; and the provision of advice and services to member States. Peer reviews of national radiation safety infrastructure were conducted in 24 member States during 2000. Through the technical cooperation Model Project on strengthening radiation and waste-safety infrastructures, IAEA provided technical support and assistance to more than 50 States. Implementation of the action plan on the safety of radiation sources and the security of radioactive materials continued. A system for categorizing radiation sources was established and a new international Code of Conduct on the Safety and Security of Radioactive Sources was developed. An international conference of national regulatory bodies was organized by the Agency in Buenos Aires, Argentina, in December. IAEA, with other UN agencies, received requests for assessments of areas with possible residues of radioactive material in the Balkans and in the Middle East.

Nuclear power

In 2000, the nuclear power programme reflected the growing economic competitiveness arising from the liberalization of electricity markets around the world. A number of documents were published and databases further expanded, containing guidance on engineering and management practices for achieving improved safety, reliability and economic cost-effectiveness of nu-
clear power plants. IAEA launched the project on Innovative Nuclear Reactors and Fuel Cycles, which would build upon programme activities on new technologies and applications, including small and medium-sized reactors, high temperature modular gas-cooled reactors and desalination applications. IAEA provided technical support for preparations for nuclear plant projects in Africa, Asia, Europe and Latin America; life management of power plants in Europe and Latin America; personnel training and qualification in the Commonwealth of Independent States; and modernization of instrumentation and control in Europe and Latin America. During the year, two large regional projects were completed in Europe on improving operations management and inspection of WWER-440/100 nuclear reactors.

**Nuclear fuel cycle**

In 2000, IAEA and OECD/NEA published Uranium 1999: Resources, Production and Demand, considered to be the foremost world reference on uranium. It provided substantial new information from all major uranium-producing centres throughout the world, and analysed industry statistics and worldwide projections of nuclear energy growth and uranium requirements and supply. During the year, IAEA activities focused on uranium resources and production, including environmental issues, and on spent fuel technologies. In October, an international symposium in Vienna addressed the uranium production cycle and its impact on the environment.

**Radioactive waste management**

The radioactive waste management programme in 2000 emphasized waste minimization and facility decommissioning; the implementation of waste management initiatives, with a greater focus on disposal issues; technology transfer and information exchange; and international cooperation in the geological disposal of high-level and long-lived wastes. A scientific forum on waste management, organized during IAEA’s General Conference in September, agreed that public acceptance of the technological solutions to the safe management of radioactive waste was critical. Other IAEA activities and documents focused on the application of waste management technologies and options for recycling waste.

**Marine environment and water resources**

Activities in the marine environment continued to focus on protection of the oceans and coastal seas through radioactivity monitoring and assessment, and the use of nuclear and isotopic techniques for understanding pollutant behaviour. The work programme emphasized capacity-building, quality assurance activities and education and training in marine environmental protection. The IAEA Marine Environment Laboratory in Monaco continued to serve as a focal point for training and research studies on the transfer of nuclear and non-nuclear contaminants in contrasting marine ecosystems. During the year, IAEA and the United Nations Educational, Scientific and Cultural Organization (UNESCO) launched the Joint International Isotopes in Hydrology Programme, designed to integrate isotope hydrology techniques into the water sector activities of member States.

**Food and agriculture**

Under its food and agriculture programme, IAEA transferred, through technical cooperation, techniques and strategies that resulted in a number of achievements in the area of food security. They included advances in controlling fruit flies through the use of the sterile insect technique (SIT); eradicating rinderpest with the help of immunoassay techniques; introducing better crop varieties developed through radiation and more efficient nitrogen-fixing tree species for improving soil fertility and crop production; and adopting food irradiation to improve food safety and securing plant health. Progress was also made in identifying new opportunities for harnessing nuclear techniques. A Food and Agriculture Organization of the United Nations (FAO)/IAEA symposium (Vienna, October) addressed the use of nuclear techniques in integrated plant nutrient, water and soil management. IAEA also continued research and training activities related to improved plant breeding, animal production, pest control, and food and environmental protection.

**Human health**

In 2000, IAEA’s human health programme focused on the prevention of malnutrition, detection of contaminant levels affecting humans, and diagnosis and management of cancer and nutritional, infectious and genetic disorders. In particular, it concentrated on the validation of new nuclear tools for diagnosing drug-resistant strains of malaria and tuberculosis and the use of nuclear techniques to screen newborns for thyroid deficiency. Radiotherapy techniques for the treatment of cancer were made more accessible, and the Agency assisted several member States in verifying the quality of radiation measurements.
Technical cooperation


IAEA’s technical cooperation activities included helping Ethiopia to create a 12-year groundwater assessment programme, using isotope hydrology applications; similar work was ongoing in other countries. The Agency signed an agreement with the Organization of African Unity to combat jointly the tsetse fly using SIT, and supported the World Health Organization (WHO) in its initiatives against tuberculosis and malaria. In collaboration with WHO and national disease control programmes, IAEA embarked on a three-year project in 11 African countries to evaluate new diagnostic tools for drug-resistant strains of tuberculosis and malaria. The Agency also supported new applications for nuclear and isotope technologies, such as a project in Europe on humanitarian demining.

Safeguards responsibilities

All information available to IAEA in 2000 led to the conclusion that nuclear material and other items placed under safeguards remained in peaceful nuclear activities or were otherwise accounted for. Over 900 facilities and locations were under Agency safeguards or contained safeguarded material. As at 31 December, 224 safeguard agreements with 140 States (and with Taiwan Province of China) were in force. Safeguards agreements that satisfied the requirements of the 1968 Treaty on the Non-Proliferation of Nuclear Weapons, adopted by the General Assembly in resolution 2373(XXII) [YUN 1968, p. 17], were in force in 128 States. Protocols Additional to safeguards agreements [YUN 1997, p. 1519] for 57 States were approved by the Board of Governors. Eighteen such Protocols were in force.

During the year, 2,467 safeguard inspections were performed. However, IAEA was unable to fulfil its safeguards mandates in the Democratic People's Republic of Korea and Iraq (see PART ONE, Chapter IV).

Nuclear information

In January 2000, the Agency convened an industry forum in Vienna with the aim of broadening and enhancing its contacts with non-traditional partners. The forum allowed private sector representatives to exchange views with the IAEA secretariat on the future prospects for nuclear power and related applications. IAEA continued to increase user access to information in electronic formats and posted a series of information pages on its WorldAtom web site. IAEA published some 163 books, reports, journal issues and leaflets and distributed some 800 video products. Regional public information seminars were held in Brazil, Finland, Hungary, Romania and Thailand.

The International Nuclear Information System, with 122 participating members (103 countries and 19 international organizations), continued to collect and distribute bibliographic information on nuclear literature published in member States, as well as on texts not readily available through commercial channels.

Secretariat

At the end of 2000, IAEA secretariat staff totalled 2,173, including 912 in the Professional and higher categories and 1,261 in the General Service category.

Budget

The 2000 regular budget amounted to $199.3 million, of which $191 million was from assessed contributions by member States, $4 million from income from reimbursable work and $4.3 million from miscellaneous income. Actual budget expenditure amounted to $196.4 million. A total of $38.7 million in extrabudgetary funds was provided by member States, the United Nations, international organizations and other sources.

NOTE: For further information, see Annual Report 2000, published by IAEA.