

IAEA 2000 CHALLENGES OF NEW FRONTIERS

During the last ten years, members of the IAEA have been persistent in taking action on two vital fronts: verification to help halt the spread of nuclear weapons and measures to ensure the safe use of nuclear energy in a sustainable global energy mix. At the same time, the approaches to the transfer of beneficial nuclear techniques for development were reinvigorated. The outlook now is for further reliance on the Agency as the single institution through which governments can consult, negotiate and conduct global action in the nuclear field.

The recent strengthening of the Agency's safeguards system to verify non-proliferation undertakings — involving greater access to information and locations and the use of new and advanced techniques — responds to the need of the international community for improved global and regional security. It will also provide an improved basis for future collaboration in the peaceful uses of nuclear energy. It underpins the nuclear-weapon-free status of Latin America, Africa, South East Asia and the South Pacific, all of which have called on the Agency to provide verification services. While the chief mandate remains verification to help limit the further spread of nuclear weapons, the Agency has already been requested to verify the dismantling of South Africa's former nuclear-weapon programme and to enforce Security Council measures for the destruction of Iraq's

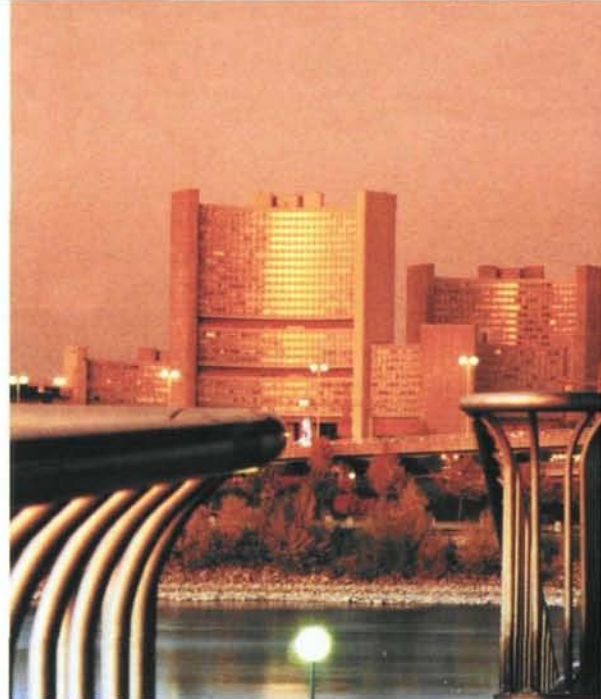
clandestine efforts to acquire nuclear weapons.

Looking ahead, the safeguards system of verification stands ready to perform other vital functions for international security — for example, that of facilitating the reduction of nuclear weapons worldwide. Even the vision of a nuclear-weapon-free world is deserving of practical consideration and preparation. As nuclear weapon stocks are reduced there will be a need for assurance that nuclear material from dismantled weapons does not go into new weapons. At the same time, the assurance that new countries are not acquiring such weapons will be even more important than it is today. In the nuclear disarmament process, international verification is likely to have a role. Under a tri-lateral arrangement between the Russian Federation, the USA and the IAEA, a study is being made of one new verification task that may be undertaken by the Agency.

Although individual countries bear the full responsibility for safety of nuclear activities under their jurisdiction and control, confidence in matters of nuclear safety depends greatly on a record of safe operation worldwide. The IAEA has played an increasingly important role in developing global international norms for nuclear safety which, together, now form an international legal infrastructure for nuclear activities. The Agency can take pride in this brisk development — a sizeable and solid body of standards and guidelines and, indeed, a

number of binding conventions: the "Chernobyl" conventions on early notification of nuclear accidents and emergency assistance, the convention on the safety of nuclear power plant operation, the convention on the safe management of radioactive waste and spent fuel, which we hope will soon be in force, and the agreement to improve the regime for liability in the event of accidents. Concurrently with this normative development, States are increasingly cooperating — often through the Agency — to provide practical assistance and advice on the maintenance of high safety standards. The Agency will be called upon to facilitate the implementation of the new international arrangements and, no doubt, will be the centre for further evolution of international law in the safety area. The growing evidence of a record of high safety and efficient operation of nuclear facilities demonstrates the progress that has been made, while shortcomings which have been identified point to the further agenda of work.

The dramatic global political developments of the last ten years have allowed the international community to give renewed attention to the fundamental issues of human welfare — devel-



opment and the environment. This new situation enhances the role of the Agency in the fields of energy and technology transfer. It is evident that with populations still increasing and with unequalled rates of economic growth in many parts of the world, the global demand for energy will continue to rise. At the same time there is a greater awareness of the need to preserve healthy local environments and to avoid further global environmental damage — through climate change, desertification and the loss of bio-diversity. There are only a limited range of economically viable options currently available for the large-scale generation of electricity and other forms of energy which are needed. Nuclear power is one of these. It is a potential major contributor to an environmentally sound, carbon-free global energy supply. A sustained nuclear safety record — in operation as well as waste disposal — and sustained objective information is needed for the potential to be fully used. The IAEA has an important role in both regards.

In the area of nuclear techniques, the Agency is now focusing on the transfer of technology in ways that bring maximum benefit to the countries concerned, in particular the end-users. This involves the Agency working, for example, with medical and agricultural institutes, and with doctors and farmers — those best able to make direct use of the techniques. There are many tangible benefits — some rather spectacular, like the eradication of insect pests from large areas; some less visible but equally impressive, such as the identification of new water resources using isotope techniques and the reduction of atmospheric pollution through the use of accelerator technology.

Although much nuclear technology transfer can be left to the all powerful market, much remains, especially at the introductory stage, where Agency assistance will make a big difference.

In an era of rapidly growing interaction among States, it is not surprising that governments are relying increasingly on multilateral mechanisms to meet new needs. This leads to three considerations. First, how do we best use the various multilateral mechanisms to meet these new needs.

Collaboration and coordination are clearly a key. The Agency has much good experience here — for example, in hosting a joint programme with the FAO in using nuclear techniques to increase food production, in conducting marine environmental research in joint projects with UNEP, and in radiation safety in our close collaboration with UNSCEAR. New areas of cooperation have also opened up in recent years: in arms control, with the Secretariats charged with implementing the bans on chemical weapons and nuclear testing; in the evaluation and remediation of radiation contamination, where the Agency has worked with the WHO and others; and in the efforts to prevent the illegal trafficking of nuclear and radioactive materials, where we have worked with the World Customs Council. These interactions are essential and require constant attention to ensure effectiveness and efficiency.

Secondly, some important questions arise about the overall structure of the multilateral system. Decisions will need to be made about the assignment of new responsibilities among its various elements. For example, it has been widely observed that the system has no one centre for the consideration of energy issues. The consid-

erable expertise that exists in the IAEA in the general field of energy must be fully used in any system-wide forum.

Third is the question of resources. The international system has been increasingly under pressure to improve efficiency and effectiveness, and the Agency has played its full part. The strengthening of the safeguards system is accompanied by an emphasis on increased efficiency. New approaches to technology transfer have the same twin objectives. Administrative systems are constantly under review and new technologies offer promise of further efficiencies. Voluntary contributions will continue to finance some of the new activities Member States want the IAEA to pursue but they cannot be a substitute for regular funding of core activities. To do more with less will remain a challenge!

It is my conviction that the legal and technical foundations that have been laid and the services that have been developed over the past decade through the Agency will help lead the world to safer and more secure use of nuclear energy and nuclear techniques. Major challenges have been encountered and the Agency has emerged stronger from successfully meeting them. Major new roles have been assigned and are being performed. With the continued active engagement of Member States, the Agency and its staff can confidently look to the challenges over the horizon.

— Dr. Hans Blix,
IAEA Director
General.



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The IAEA is facing new realities and challenges as the world approaches the next century. Three fundamental challenges have emerged:

The first concerns the role of nuclear energy for sustainable development — an issue that embraces nuclear and radiation safety, waste disposal, the physical protection of nuclear materials, and measures against illegal nuclear trafficking. The second concerns the IAEA's ability to credibly verify States' non-proliferation pledges, and its role in verifying future arms-control measures. The third concerns the role of multilateralism, a challenge accentuated by the end of the Cold War, and one witnessed in the declining financial resources of the UN system and other inter-governmental organizations. These challenges point to dual needs — for continuity and for adjustment.

Nuclear power is regarded by many States as having an important role to play in the energy mix over the next few decades. With the growing demand for energy and electricity, and under the shadow of the greenhouse effect and acid rain, the nuclear power option will continue to be explored or followed in many parts of the world. The choice to make use of it is a national decision, and the Agency's cooperative role will be adjusted to focus on key areas of energy assessments and nuclear power development with those countries who want to make use of it.

Outside the electric power area as well, other applications of nuclear energy are essential in many fields, including health, agriculture, and hydrology. The IAEA will need to focus on those applications where the nuclear techniques offer a comparative advantage over other available

techniques — in other words, where they have found a demonstrated "niche". The transfer of technology for social and economic development is a major function of the IAEA in its own right. New directions of the Agency's technical cooperation programmes now put them on the path of becoming an even more important vehicle for sustainable social and economic development.

The key to the use of nuclear energy in all its forms is safety. New safety-related conventions are in place, raising the need of implementing them. Important in this respect is the need to accelerate practical assistance to States in areas of nuclear legislation; setting up infrastructures for radiation protection and for waste management and disposal; and advisory safety services for nuclear operations and radiation and waste practices.

The verification of nuclear energy's peaceful uses contributes to international security in many parts of the world. It has become an important component of the national security profile in more than 180 States, and essential for nuclear trade. States have therefore supported efforts for strengthening the IAEA's safeguards to provide more comprehensive assurances and a more cost-effective system. It is to be hoped that they would become party to the new protocol to strengthen safeguards at the earliest possible date. Other developments in the verification field, including the emergence of regional nuclear-weapon-free-zones and the Agency's possible verification of nuclear disarmament, signal ways in which the IAEA is challenged to contribute further to the world's security goals.

In the coming years, no dramatic increase in financial

resources to the Agency is expected. This reality calls for more focused IAEA programmes and more clearly defined priorities where the Agency's core competencies and comparative advantages are clearly established. The IAEA will have to shed itself of activities that are obsolete or could be more efficiently implemented by others in and outside the UN system. Better and new financing arrangements, particularly for technical cooperation and for new verification tasks, will be required. Further steps will be needed to streamline the Agency's structure, and to continue the process of other reforms. The aim will be to save resources that can go into programme activities, and to provide governments with even better return on their investment.

As we move ahead, an overriding challenge will be to make the IAEA more effective, efficient, and responsive to the needs of its Member States. This could be achieved by avoiding a North-South divide, or other divides, and by equal commitment by all to the Agency's twin objectives: international cooperation for progress and consolidation of international security. These are aims that are worth pursuing in earnest. There are many opportunities, and much work, ahead in our common efforts to achieve them. —Dr. Mohamed

ElBaradei, the Agency's Assistant Director General for External Relations, & IAEA Director General-Designate.



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