SAFEGUARDING THE ATOM

THE IAEA & INTERNATIONAL NUCLEAR AFFAIRS

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The end of the Cold War provided an historic opportunity to advance the cause of nuclear non-proliferation and disarmament. To an important degree, realizing this opportunity depends critically on effective systems of verification and safeguards. With the 6th Review Conference of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) imminent, I would like to reflect on progress attained in recent years in this area.

The IAEA safeguards system has been strengthened in myriad ways since 1991, when events in Iraq demonstrated the limitations of the system then in place. The coming to light of Iraq's clandestine weapons development activities provided many lessons to bear in mind for the future, perhaps the most important one being that no effort should be spared in enhancing the transparency of national nuclear programmes.

IAEA safeguards are generally acknowledged to be a credible means by which the international community can be assured that nuclear material and facilities are being used exclusively for peaceful purposes. At the same time, safeguards in themselves do not -- and cannot -- prevent States from acquiring nuclear material, facilities or technology. Neither can they alone assure the physical protection of nuclear material or facilities. They can function as an early warning mechanism, the trigger that sets in motion other responses by the international community. This basic principle brings into focus the reality that the safeguards system is merely one component, albeit an important one, of the global non-proliferation regime.

The essential elements of the non-proliferation regime have long been recognized to include:

- global, regional and bilateral agreements in accordance with which States commit themselves not to manufacture or possess nuclear weapons;
- export controls on the supply of nuclear and nuclear related materials, technology and equipment;
- the convention and guidelines aimed at ensuring the physical protection of nuclear material and facilities;
- accelerated steps towards nuclear disarmament; and
- appropriate arrangements for global and regional security.

While much has been achieved in putting in place these components, which together constitute the complex mosaic of the global non-proliferation regime, the forthcoming NPT Review Conference is likely to highlight where further progress is required. In particular, the Principles and Objectives for nuclear non-proliferation and disarmament, part of the package of decisions which accompanied the agreement on the NPT's indefinite extension in 1995, will certainly draw attention to commitments that need to be fulfilled.

Although safeguards have evolved progressively since their inception, until recently the IAEA safeguards system focused mainly on nuclear material and activities declared by the State. It is now widely recognized that an effective verification regime must also focus on possible undeclared material and activities.

In February 1992, the IAEA Board of Governors reaffirmed the Agency's right to verify both the correctness and completeness of the nuclear material declarations made by States. Some strengthening measures were introduced within existing IAEA authority but other key elements

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envisaged for the strengthened system required additional legal authority. Thus, in May 1997, the IAEA Board approved the Model Additional Protocol, which conferred upon the Agency additional legal authority to implement further strengthening measures.

The Additional Protocol is integral to the strengthened safeguards system. Its principle aim is to enable the safeguards system to provide assurance about both declared and possible undeclared activities. For that purpose, the system must provide as complete a picture as possible of nuclear activities and not limit itself to the confines of nuclear material. And it must allow the Agency adequate rights of access and enable it to use the most advanced technology.

Under the Additional Protocol, States are required to provide the Agency with an expanded declaration that contains information covering all aspects of their nuclear and nuclear fuel cycle activities. With this broadened foundation of information at its disposal, which also includes open source information, the Agency has a far better vantage point from which to develop a comprehensive picture of all nuclear activities in a State.

The Agency's broader access rights are to a large extent linked to confirming or clarifying particular aspects of the information provided. Whereas previously, access was generally limited to specific "strategic points" in declared facilities, under the Additional Protocol a State is required to provide access to any place on a nuclear site and to other locations where nuclear material is, or may be, present. The State is required to provide access to all locations that are, or could be, engaged in nuclear fuel cycle related activities and, in cases where this may not be possible, to make every reasonable effort to satisfy Agency requirements without delay through other means.

An important influence on the effectiveness of safeguards is technology. The Agency today has the right to collect environmental samples anywhere it has a right of access. Results to date have demonstrated that these techniques are powerful tools for detecting undeclared activities. The Agency is also preparing for extensive use of remote monitoring technology, which will further enhance the efficiency of the safeguards system.

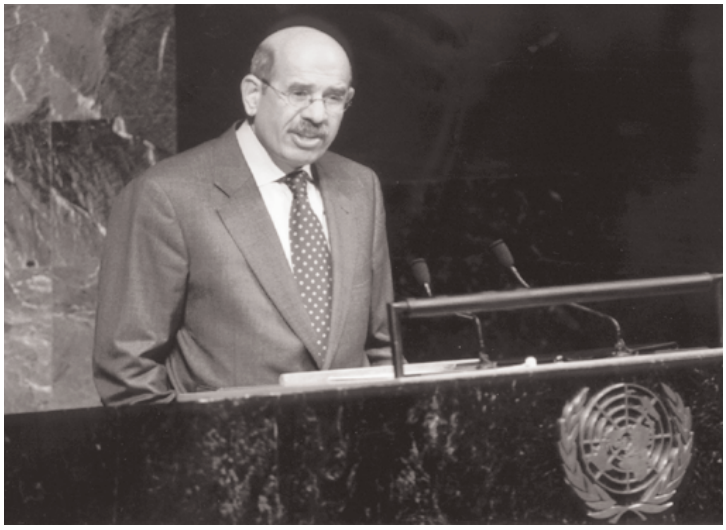
The strengthened system is technically a major leap forward. It is based on a political commitment to support an "intelligent" verification system -- one where qualitative assessment takes place alongside quantitative accounting measures. States have recognized and committed themselves to a common, societal objective; bound themselves to certain material obligations in pursuit of that objective; and granted an impartial inspectorate the necessary authority to verify compliance with the commitments made.

CHALLENGES AHEAD

But many challenges remain. For one, many States Party to the NPT have yet to conclude safeguards agreements with the Agency. It would be a welcome development indeed if some of the 52 NPT States without safeguards agreements in force were to view the run-up to the April 2000 Review Conference as an opportunity to conclude and bring such agreements into force.

The full potential of the strengthened safeguards system can be realized only through universal adherence to the Additional Protocol. That, in turn, requires all relevant safeguards agreements to be in force. As of early December 1999, Additional Protocols with 46 States were approved by the IAEA Board of Governors. As more Additional Protocols enter into force, the IAEA will be able to provide credible assurance not only about declared nuclear material in a State but also about the absence of undeclared material and activities.

Another challenge is posed by international terrorism and crime. Never before has the physical protection of nuclear material, which is closely associated with the Agency's safeguards and verification mission, been as important or as relevant to the times. The Agency's Illicit Trafficking Database records 138 incidents involving nuclear material and 124 involving other radioactive sources which have been officially reported by States. The number of Member States providing information to this database, at present 61, is steadily growing. The IAEA will



continue to assist States in their efforts to prevent, detect and respond to illegal uses of nuclear and radioactive material.

Another challenge is that of facilitating the disarmament process through effective and credible verification of weapon-origin fissile material. In the area of nuclear arms control, the Agency is working on a joint initiative with the Russian Federation and the USA, focusing on Agency verification of weapon-origin fissile material designated by the two States as no longer required for military purposes.

During the past year, work has continued on the development of a proposed prototype verification system that might allow Agency inspectors to carry out their verification duties without access to classified weapons information. Discussions with the Russian Federation and the USA have also continued on the drafting of a model verification agreement that will, *inter alia,* ensure that fissile material of weapon origin submitted to Agency verification will permanently be removed from weapons programmes.

Although the Conference on Disarmament (CD) held discussions in the past year, this period has been marked with disappointment insofar as progress on a key agreement seeking a ban on fissile material production. The treaty would ban the production of nuclear material for nuclear weapons and other nuclear explosive devices, and in so doing, significantly advance the cause of nuclear non-proliferation and disarmament.

In furtherance of a request from the United Nations General Assembly, I have written to the President of the Conference on Disarmament to offer the assistance of the Agency in developing the technical verification arrangements for the treaty.

To my mind, a sustained reduction in military stockpiles of fissile material, together with the proposed production ban, could usher in the beginning of a new era in nuclear disarmament. This would be no small achievement, and certainly one worth striving for in the near term.

RENEWING THE COMMITMENT

As we prepare for the forthcoming NPT Review Conference, we are reminded of a fundamental characteristic of the nuclear field. Though nuclear power has tremendous potential to meet the energy needs of the future, as well as to combat the greenhouse effect, it also brings with it significant risks that require the utmost vigilance.

While there is good reason to be encouraged by the sustained strengthening of the non-proliferation regime, a process that has been particularly in evidence this past decade, hidden beneath the record of achievement is the risk of complacency. The setbacks which the global non-proliferation regime has suffered -- notably the nuclear explosions in Asia in 1998 as well as more recent events surrounding the Comprehensive Nuclear-Test Ban Treaty -- make clear that progress needs to be sustained on all fronts, and with regard to all components of the non-proliferation regime; they are symbiotic in nature.

In a world that is changing rapidly in economic, social and political terms, we would thus do well to remain alert to the need for renewed political commitment to the basic aims that undergird the non-proliferation regime, namely: arrest the proliferation of nuclear weapons; ensure access by all to the peaceful applications of nuclear energy; and take concrete steps towards nuclear disarmament. ❐

Photo: Dr. ElBaradei, addressing the UN General Assembly in November 1999 on the work of the IAEA.