Introduction

I begin today by congratulating the International Atomic Energy Agency (IAEA) for organizing this symposium -- one can scarcely imagine a more timely and important subject to address than contemporary and future controls over nuclear materials.

The terrorist attacks of 11 September have -- in the words of Director General ElBaradei -- provided a "wake up call to us all." The problem, however, with governments and large bureaucracies -- fallible human creations that they are -- is that they often respond to wake-up calls as individuals who hear their morning alarm clocks: they roll over and turn off the alarm, preferring the warm comforts of familiar surroundings to the harsh realities of the outside world.

The IAEA, however -- like the United Nations -- does not have this luxury, and has been
responding to new challenges virtually throughout its existence. Its most solemn responsibility is to verify the peaceful uses of nuclear material at over a thousand installations worldwide -- facilities containing over 111,000 "significant quantities" of safeguarded material. The theft or diversion of even a fraction of one percent of this material could prove to be utterly catastrophic not only for the Agency and its safeguards system, but also for the future of humankind.

The Agency now has the opportunity to re-examine the adequacy of safeguards and physical security controls without the prior occurrence of a nuclear detonation, a new attack on a nuclear facility, the acquisition of sensitive nuclear material by a terrorist group, or the use of a radiological weapon. It must also re-examine closely its own past assumptions about the likely motivations of terrorists and their willingness and capabilities to "do the unthinkable."

In rising to this challenge, the IAEA must work proactively -- it must have the vision of knowing where to go, the wisdom to understand the importance of getting there, and the knowledge of how to navigate the treacherous terrain that lies ahead. I have every confidence that the IAEA has the leadership and professional expertise to rise to this challenge. Fortunately, many of the tools needed to achieve these goals are found in a unique international legal instrument, the Treaty on the Non-Proliferation of Nuclear Weapons (NPT).

**The NPT as a Cornerstone**

The NPT is often called the cornerstone of the global nuclear non-proliferation regime. Yet this is only partly correct -- partly, because the treaty serves many more functions than its title suggests.

- It contains the only formal legal commitment by the nuclear-weapon states to global nuclear disarmament, a commitment that the states parties review through a series of Preparatory Committee sessions and regular five-year Review Conferences.
- It contains a legal obligation to assist in the peaceful uses of atomic energy without jeopardizing non-proliferation goals -- this is especially important to developing countries, where the peaceful uses of nuclear energy can serve the cause of reducing poverty, hunger, and disease.
- It contains a highly-intrusive system of safeguards that covers not only the "full scope" of nuclear activities and materials in non-nuclear-weapons states, but also applies to increasing amounts of materials in nuclear-weapon states as well.
- Its preamble even contains the goal of eliminating the means of delivering nuclear weapons pursuant to a treaty on general and complete disarmament under strict and effective international control.

For all these reasons, one may with little exaggeration call the NPT not just a cornerstone of the nuclear non-proliferation regime, but also a cornerstone of international peace and security itself.

**The Road Travelled**
By virtually any measure, the treaty has already served this key function rather well, surely better than one might expect given the complexity of the issues it addresses and the political and technical obstacles it faces in the real world of implementation. In terms of universality, its only rival among treaties is the Charter of the United Nations.

The treaty's system of full-scope safeguards has placed virtually all of the world's fissionable nuclear materials under international monitoring and control. Only three states with unsafeguarded nuclear programmes remain outside the treaty. One state party -- the Democratic Peoples' Republic of Korea -- is not currently in compliance with its full-scope safeguards obligation. In 1991, the UN Security Council condemned the non-compliance by another state party -- Iraq -- with its IAEA safeguards agreement and that country remains in non-compliance with its obligations under relevant Security Council resolutions. Yet compared to a time not so long ago when President Kennedy was warning of the dangers of a future world with over twenty nuclear-weapons states, we must all be grateful that there are still only five nuclear-weapons states and three additional states that have reportedly acquired various nuclear weapons capabilities.

We also have today four nuclear weapon-free zones in populated areas -- in Latin America and the Caribbean; Africa; Southeast Asia; and the South Pacific -- each of which requires its members to agree to full-scope IAEA safeguards. Together, these zones cover virtually the entire southern hemisphere. Mongolia has declared its nuclear weapons-free status and additional efforts are underway to establish a nuclear-weapons-free zone in Central Asia.

While some non-nuclear-weapon states have voiced their discontent over the extent to which the treaty has enabled them to exploit the peaceful uses of nuclear energy, the fact remains that the global outlook for nuclear power remains mixed, as the IAEA Director General stated in his speech last week to the General Assembly. Though nuclear power offers an energy source that does not contribute to greenhouse gas emissions, all states have encountered economic, technical, or political difficulties in expanding the peaceful uses of nuclear energy, and lingering questions remain in the area of safety, safeguards effectiveness, and economic competitiveness -- questions that will be the focus of the Agency's newly-established International Project on Innovative Nuclear Reactors and Fuel Cycles. The NPT review process provides an opportunity for its member states to consider carefully all aspects of the global nuclear market, from the perspectives of both supply and demand. This is a particularly important forum for developing countries to voice their concerns and expectations.

It is difficult to judge the extent to which the NPT has advanced the goal of global nuclear disarmament. The nuclear-weapons states -- while accusing each other of a lack of transparency -- do not inform the world of the precise size of their nuclear arsenals and their holdings of special fissionable materials, so we must rely upon secondary estimates based on available published data. These estimates suggest that there were a little over 39,000 nuclear weapons when the NPT entered into force in 1970, compared to the 31,000 that reportedly existed in the year 2000. While these reductions -- which average only about 266 weapons per year -- are
disappointing, they do reveal that global nuclear arsenals declined to more than half of their peak in the mid-1980s.

Other progress has been registered in the placement of additional nuclear-weapons materials under safeguards, significant reductions in nuclear-weapons delivery systems, and the negotiation of the Comprehensive Nuclear-Test-Ban Treaty (CTBT) and the START II treaty. Recent proposals by the Russian Federation to reduce the U.S. and Russian nuclear stockpiles to 1,500 each have been matched by the Bush Administration's stated goal of substantial unilateral reductions. The numbers, in short, appear at least to be heading in the right direction. At the 2000 NPT Review Conference, the nuclear-weapon states made -- as one of thirteen agreed steps leading toward disarmament -- an "unequivocal undertaking" to accomplish the total elimination of their nuclear arsenals.

The NPT Regime at a Crossroads

The full promise of the NPT, however, will be achieved only if the promises of its parties are fully kept. Unfortunately, there are many warning signs that the future of the "NPT regime" -- despite the indefinite extension of the treaty in 1995 -- is by no means secure. The "progress" of this treaty in the years ahead will depend heavily upon answers to three fundamental questions:

- Will the States parties fully implement their disarmament, safeguards, and non-proliferation commitments?
- Will the treaty achieve fully universal membership?
- Will the NPT regime show its capacity to adapt to new challenges?

A short-term test for the treaty will come early next year during the first Preparatory Committee meeting for the 2005 Review Conference. The non-nuclear-weapon states will want to see some hard evidence of progress on nuclear disarmament, along the lines prescribed in the thirteen "practical steps" agreed at the last Review Conference. These benchmarks owe much of their existence to the New Agenda Initiative, a collective effort by Mexico, Brazil, Ireland, Sweden, Egypt, South Africa, and New Zealand to add some urgency, direction, and accountability to the process of global nuclear disarmament.

Yet this progress must be weighed against other troubling developments, including: uncertainties over the future of the ABM Treaty; the failure of START II and the CTBT to enter into force; the inability of the Conference on Disarmament to engage in substantive work on nuclear disarmament, fissile material, and outer space weapons issues; continued qualitative improvements in nuclear weapons; hints that nuclear testing may one day resume; and the persistence of doctrines of first-use, pre-emptive use, and use against states that use chemical or biological weapons.

Other questions will arise over safeguards -- including, for example, the chronic inability of the IAEA to implement safeguards in the DPRK; and troubling signs of a breakdown of the norm of
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full-scope IAEA safeguards, specifically in South Asia. There are also concerns over the implementation of non-proliferation commitments, as seen in persisting allegations -- still undocumented -- about nuclear weapon programmes in some NPT non-nuclear-weapon states.

The terrorist attacks on 11 September should serve as a reminder of new dangers relating to the possible use of weapons of mass destruction and unorthodox delivery systems. Considered in light of the many well-documented cases of illicit trafficking in various radioactive substances -- and the recent, repeated uses of a biological weapon (anthrax) in the United States -- the possibility can by no means be excluded that the world may yet witness the appearance and use of radiological weapons by an individual or a non-state group, a risk that in the worst case may even include the use or threatened use of a nuclear explosive device.

While not coming under the jurisdiction of IAEA safeguards, many such radiological materials, if diverted and used for terrorist purposes, would inevitably damage international confidence in global controls over nuclear materials, while further setting back hopes for an early revival of nuclear power. Many environmental concerns also remain to be addressed. During the general debate of the UN General Assembly's First Committee earlier this month, a large number of Latin American states belonging to the Rio Group and to Mercosur voiced their concerns over the maritime shipment of radioactive waste, citing the potential environmental effects of accidents involving such materials. The Caribbean Community (CARICOM) and the South Pacific Group (SOPAC) voiced similar concerns at the 2000 NPT Review Conference. These voices too constitute a wake-up call for the world community.

The regime is facing other challenges as well. In speeches made during the treaty's review process concerns have been voiced repeatedly over some apparent selectivity in the enforcement of NPT norms -- in particular the demand for rigorous compliance with non-proliferation norms compared to more relaxed standards for gauging compliance with disarmament goals, particularly with respect to transparency.

Other concerns will arise over the temptation of certain states parties to address non-proliferation through primarily unilateral means -- up to and including the use of military force -- rather than through close international cooperation. One must add to this list the perennial problem of ensuring that the IAEA receives the funding it needs -- and this also applies to other international organizations with important disarmament responsibilities, including the OPCW, the CTBTO Preparatory Commission, and even the UN's Department of Disarmament Affairs. Disarmament advocates in civil society are also suffering some financial difficulties in the face of recent signs of declining support for disarmament from private foundations.

There will no doubt be very difficult problems in bringing the NPT to universal membership, as India, Pakistan, and Israel will likely continue for the foreseeable future to maintain unsafeguarded nuclear facilities and to refuse to abandon their nuclear weapons options. The proliferation of "minimum nuclear deterrence" doctrines to South Asia makes it even more difficult to de-legitimize globally the possession of nuclear weapons. This problem will grow
worse if existing nuclear-weapon states -- despite their unambiguous obligations under the NPT -- one day decide to provide various forms of technical assistance to the nuclear-weapons programmes in the region, ostensibly for safety and security. The goals of disarmament and non-proliferation have become so deeply rooted as a foundation of international peace and security that they have now become fundamental norms from which there must be no derogation. They are all-weather norms -- not to be compromised for short-term expediency.

Moving to Future Challenges

It is not yet time to rule out the possibility of major progress on nuclear disarmament, as unilateral, bilateral, or plurilateral initiatives among the nuclear-weapon states may still occur. The likelihood of such progress would grow if the non-nuclear-weapon states and the people of all states increase their efforts to promote this goal. Without such encouragement -- and at times, pressure -- there is less incentive for progress and hence less grounds for optimism.

Progress on non-proliferation is also essential, recognizing its close linkage with disarmament. The norm of full-scope IAEA safeguards must be reaffirmed or it will falter and disappear in a scramble for nuclear markets -- a pernicious, competitive race to the proverbial bottom of global non-proliferation standards. The other key safeguards challenge is to encourage all NPT states parties that have not yet done so to bring into force comprehensive safeguards agreements and the commitments under the Model Additional Protocol. The IAEA Director General's recent expressions of concern over what he has gently termed "the lack of progress" in this area are absolutely justified. A useful way to encourage wider adherence to this Protocol is found in the convening of regional seminars, such as the one the IAEA is holding next December in Peru with the support of OPANAL and the UN disarmament center in Lima.

Yet despite the support the it receives from the IAEA in safeguards and in promoting the peaceful uses of nuclear energy, the NPT -- a 31-year-old treaty with 187 states parties -- still lacks institutional support: it has no permanent secretariat or executive body, nor have the states parties shown much interest in creating such bodies. The world community might consider exploring such institutional issues -- along with the interdependence of the NPT with other disarmament instruments and arrangements -- in a Fourth Special Session of the General Assembly on Disarmament, but there is as yet no global consensus to hold such an event. The re-invigoration of the UN's existing disarmament machinery, along with efforts to create new norms in such fields as missiles, missile proliferation, missile defence, and space weapons, are also desirable paths for the world community to pursue.

With respect to terrorism, there is an urgent need for new international efforts to eliminate all weapons of mass destruction and for increased global cooperation to tighten the security of the production, storage, and transportation of hazardous nuclear materials. Closest attention must continue to be paid to weapons-usable nuclear materials -- mainly plutonium and highly-enriched uranium. The terrorist threat also demands greater vigilance against the theft and illicit commerce in other dangerous radiological materials.
Several months before the 11 September attacks, the IAEA showed its readiness to confront the danger of nuclear thefts by organizing a major international conference in Stockholm on the "Security of Material, Measures to Prevent, Intercept and Respond to Illicit Uses of Nuclear Material and Radioactive Sources." On 21 September, as a new step in the direction of combating nuclear terrorism, the IAEA General Conference adopted a resolution on the physical protection of nuclear materials and facilities.

These are all healthy signs, signs of an institution that is trying diligently to adapt to the changing world around it. The cooperation that was evident at these recent gatherings -- both between states and among diverse international institutions -- is inspiring indeed, as is the fact that many of these deliberations were also open to the press to promote public understanding. I hope not only to see more such conferences in the future, but also to see the fruits of those conferences increasingly integrated into national laws and regulations and, ultimately, binding new international obligations.

Last September's "wake up call" applies especially to the need to strengthen of the Convention on the Physical Protection of Nuclear Material. This convention, whose membership of 69 states parties falls well short of the universality it should have, provides an indispensable framework for international co-operation in the protection, recovery and return of stolen nuclear material. We must remember -- as UN Secretary-General Kofi Annan warned earlier this month -- that the tragedy could have been much worse.

Concerning the NPT's goals for the peaceful uses of nuclear energy, few initiatives would better promote this goal than new progress in alleviating the public's justifiable concerns over the lack of a solution to the problem of radioactive waste disposal -- and new advancements in meeting the public's demand for the highest standards of nuclear safety. Until the world finally and wisely decides to ban outright the production of highly-enriched uranium and the separation of plutonium for any purpose whatsoever, it is now more apparent than ever that controls over these specific materials must be continually improved. The future of peaceful uses of the atom will not be advanced if the public lives in continual fear that the next terrorist incident could lay entire cities to waste.

In the years ahead, the IAEA may acquire new safeguards responsibilities under strategic arms reduction agreements. The world must set its sights on preparing for the day when the IAEA will implement full-scope safeguards in all countries that possess nuclear material.

We are left, however, with a lingering uncertainty over exactly the size of the problem we collectively face. At the 2000 NPT Review Conference, for example, the United Kingdom distributed a report prepared by its Ministry of Defence entitled, "Historical Accounting and Plutonium." The report reached the following disturbing conclusion, and I quote:

> It is an unfortunate reality that in the early days of nuclear programmes records...
were not kept to the standards required today, nor have all the records that were kept survived . . . the Government does not believe that it will ever be possible for any of the relevant States to be able to account with absolute accuracy and without possibility of error or doubt for all the fissile material they have produced for national security purposes.

This quotation begs an important question -- while the risk of terrorists acquiring weapons usable nuclear material will remain for some time to come, how will the continued manufacture, possession, or threats of use of nuclear weapons serve to solve the problem of nuclear terrorism? To the contrary -- by postponing the final elimination of weapons usable nuclear materials, by legitimising the possession of nuclear weapons, and inspiring new proliferation threats -- nuclear weapons programmes are part of this problem, not its solution.

It is, therefore, more clear than ever that nothing offers greater hope for minimizing the threat of nuclear terrorism than the achievement of global nuclear disarmament, and -- short of a nuclear disarmament convention -- no path is more appropriate in leading us to this destination than the full implementation of the NPT.

Conclusion

On this note, I would like to wish you well in your deliberations over one of the most important items -- if not the most important item -- on the agenda of international peace and security. The problems before you will not be solved in any one symposium, but only by the determined collective efforts of all countries to achieve a safer world for our fellow citizens and generations to come.

Mahatma Gandhi once wrote:

Generally there are previous warnings of coming storms. Where these are known, the peace brigade will not wait till the conflagration breaks out, but will try to handle the situation in anticipation.

Each of us has heard the thunder and witnessed the lightning from coming storms -- let us together prepare now to avert the hazards to come. This is the task of this symposium. This is the challenge for all humankind.