

# **Nuclear Non-proliferation : the Current Situation and Challenges<sup>1</sup>**

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## **Introduction**

It is a pleasure for me to be participating in this special symposium commemorating the 50<sup>th</sup> anniversary of the IAEA. Taking this opportunity, I would like to express, on behalf of Atomic Energy Commission of Japan, my heartfelt thanks to the IAEA for long-standing services that the IAEA has extended to Japan.

So long as nuclear weapons remain, there is a risk that they would be used by design or accident and any such use would be catastrophic. Recognizing this risk, international community had the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) enter into force in 1970 as the cornerstone of the global nuclear non-proliferation regime to anchor humanity's efforts to curb nuclear proliferation and move towards nuclear disarmament. For over 30 years, the NPT has been the center and foundation of an interlocking network of agreements, organizations, and international arrangements designed to slow down the further spread of nuclear weapons.

It is no secret, however, that the nuclear non-proliferation regime today faces a broad array of challenges such as a renewed will on the part of a few states and extremist groups to acquire nuclear weapons and the emergence of clandestine nuclear procurement networks. As we see the renewed interest in nuclear power on the part of many countries, it becomes even more important that we have strong mechanisms in place to minimize the risks of nuclear proliferation.

In my presentation this afternoon, I will offer a brief picture of current situation and challenges in global non-proliferation efforts such as nuclear disarmament, nuclear verification, and physical protection. I will finish my remarks by touching on some actions of the IAEA to be strengthened for the future of nuclear non-proliferation.

## **Nuclear Disarmament**

When the NPT Review and Extension Conference without vote extended the treaty indefinitely in 1995, it did so on certain conditions. One of the main conditions is that the Nuclear Weapon States (NWS) should give a pledge to speed up the implementation of

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their commitment to pursue nuclear disarmament, including the conclusion of the Comprehensive Nuclear-Test Ban Treaty (CTBT), which bans all nuclear explosions. The CTBT was concluded in 1996 but it has not entered into force yet because it still requires the ratification of 10 of the 44 states whose ratification is needed for the treaty to become effective.

A Fissile Material Cut-off Treaty aims to suppress the emergence of new NWS by banning the production of fissile materials and to restrict the production of nuclear weapons by NWS. It is regarded as a practical and substantial multilateral measure for nuclear disarmament and non-proliferation, which the international community should pursue following the conclusion of the CTBT in 1996. The negotiations, however, have not yet commenced.

Despite these deadlocks, the international community should work for a new momentum on nuclear disarmament, making the North Korean nuclear test explosion a wake-up call, as non-proliferation and disarmament are complementary, not separate, goals. At the same time, pending such time as the CTBT legally enters into force, a moratorium on nuclear-weapon-test explosions should be continuously affirmed and all NWS should proclaim their serious intention to diminish the role of the nuclear weapons in their security and foreign policies.

### **Nuclear Verification**

The IAEA is the competent authority responsible for verifying and assuring compliance with Non-Nuclear Weapon States' (NNWS's) commitments to renounce the acquisition and possession of nuclear weapons under the NPT. Therefore, all NNWS are required under the NPT to sign and bring into force safeguards agreements with the IAEA. Currently 154 NNWS have brought comprehensive safeguards agreements into force and the IAEA has continued to provide assurance to the effect that no nuclear material that has been declared and placed under its safeguards has been diverted for any explosive purposes or for purposes unknown.

Allegations of nuclear development by Iraq and North Korea in the early 1990s jolted the international community into urgently considering ways and means to strengthen the safeguards system. The Board of Governors of the IAEA approved the Model Additional Protocol to Safeguards Agreements in 1997.

Only when a state has both a comprehensive safeguards agreement and an additional protocol in force, the IAEA is in a position to reach a conclusion that there are no undeclared nuclear materials and nuclear activities in the state. By reaching this conclusion in a given state, the IAEA is able to use its resource more efficiently by implementing integrated safeguards in the state.

As of June 2006, integrated safeguards are being fully implemented in nine states,

including Japan. It is particularly significant in the case of Japan, as Japan has the largest and most complete nuclear fuel cycle activities among non nuclear weapon states.

The chief problem concerning the additional protocol is that it has not been universally applied. Today only about 80 countries have additional protocols in force. For the nuclear non-proliferation regime to be regarded as credible, comprehensive safeguards agreement together with the additional protocol must be regarded as the universal standard for nuclear non-proliferation commitments to be verified.

The world community has experienced three cases of non-compliance with the NPT safeguards agreements, namely, Iraq, Iran and the North Korea. In particular, the nuclear test by North Korea, which is a matter of grave concern, is a serious challenge to the NPT regime. Nevertheless, it can be said that the political reality of these cases have made clear the critical importance of the IAEA verification activities in deciding the course of action to be taken by international community.

### **Nuclear Security**

Effective systems are required to protect nuclear material in use, storage and transport and nuclear facilities from theft and sabotage both for non-proliferation and radiation safety purposes. The responsibility clearly rests with governments for ensuring that such systems are properly established and operated. Therefore the IAEA has developed for member states the recommendations for the physical protection of nuclear material and nuclear facilities, which was first published in 1972 and have been revised five times since then.

Regarding to international transport of nuclear material, the implementation of effective physical protection systems is of direct concern to the shipping, receiving, and transit states. This is the reason why the Convention on the Physical Protection of Nuclear Material (CPPNM), which entered into force in 1987, obliges States Parties to implement specific protection measures for nuclear material in international transport and to criminalize certain nuclear material related offenses. With the purpose of further strengthening these international efforts, the Convention was amended in 2005 to make it legally binding for States Parties to protect nuclear material in use, storage and transport and nuclear facilities against theft and sabotage and to criminalize an act of sabotage against nuclear facilities as a punishable offense.

Furthermore, deeply concerned about the growing risk of nuclear terrorism, many of the world nations have agreed to develop partnership against the spread of weapons of mass destruction, their delivery means and related materials. The United States initiated Proliferation Security Initiative (PSI) in 2003 to interdict illegal transfers and transportation of such weapons and materials. The UN Security Council adopted in 2004 Resolution 1540 requiring states to increase security for weapons and materials and enact strict export controls. International Convention for the Suppression of Acts of Nuclear Terrorism was adopted in 2005 based on the recognition of the urgent need to enhance international

cooperation between states in devising and adopting effective and practical measures for the prevention of such acts of terrorism and for the prosecution and punishment of their perpetrators.

### **Actions for Future**

I hope that despite quick and short, this overview of the some aspects of nuclear disarmament and non-proliferation efforts have clearly shown the important roles that the IAEA has been playing for the global non-proliferation regime. Taking this into consideration, I would like to point out, in the following, some actions to strengthen the IAEA as a guardian of nuclear non-proliferation.

**Multilateral approach to nuclear fuel cycle:** IAEA Director General ElBaradei appointed in 2004 an international group of experts to consider possible multilateral approaches to the nuclear fuel cycle, as such multilateral approaches have the potential to provide enhanced assurance to the international community that the most sensitive parts of the civilian nuclear fuel cycle are less vulnerable to misuse for weapons purposes, while removing the motivation and the justification for each country to have its own capability, through assured access to the resources, and with the benefits of cost-effectiveness and economies of scale, besides.

The Group identified a number of options in terms of policy, institutional and legal factors for those parts of the nuclear fuel cycle of greatest sensitivity from the point of view of proliferation risk. They considered, as a framework, assurances of services, conversion of existing national facilities to multinational facilities, and construction of new joint facilities.

It is rational for the IAEA to take up the work to develop a mechanism to assure the supply of nuclear fuel, as the first step. Six uranium enrichment service exporting nations jointly tabled at the IAEA a concept for a multilateral mechanism for reliable access to enrichment services for nuclear fuel. Japan also tabled a proposal to establish a system in which as many countries as practicable register their nuclear fuel supply capability in the various elements of the front-end of fuel cycle, starting from uranium ore supply to fuel fabrication to the IAEA, and the IAEA disseminates information on the market situation based on this report so as to increase the transparency of the market, as a complementary system to the six-nation proposal in which the IAEA plays the intermediary function should market fail in various juncture of fuel cycle activities. A special event was held during the last General Conference of the IAEA to facilitate discussion of these and other proposals and now the Secretariat is studying issues related to the modalities and criteria for possible assurance mechanisms acceptable to all users of nuclear energy.

**Research for non-proliferation:** New and changing challenges ask the IAEA to promote research and development for nuclear non-proliferation. For example, in order to implement safeguards for new facility types and new operating conditions, and to revise them for the introduction of integrated safeguards, development of novel technologies

including those for the detection of undeclared activities and those with enhanced capabilities in the area of environmental sampling are in need. It is also essential to develop new technologies for information collection and analysis as the information is at the heart of modern verification activities and the amount of information available is constantly increasing.

Furthermore, the development of more proliferation resistant nuclear energy systems, including relevant technologies of the nuclear fuel cycle is promoted inside and outside of the IAEA. As an issue in such efforts is how we can achieve significant advances in proliferation resistance of such systems by furnishing intrinsic characteristics like easiness of detection and extrinsic measures like easiness of safeguards in an optimal manner, the IAEA should be a partner of such efforts from the early stages of development to identify needs for innovation and clarify the issues to be resolved in a timely manner.

**Education on nuclear disarmament and non-proliferation:** The education on nuclear disarmament and non-proliferation is, I believe, one of the most important actions for future. The overall objective of the education is to impart knowledge to individuals to empower them to make their contribution, as national and world citizens, to the achievement of nuclear disarmament and non-proliferation. Each country should be encouraged to sponsor, in cooperation with the IAEA, training, fellowships, and awareness programs for researchers, engineers, scientists, and other academics in areas of sciences and technologies relevant but not limited to treaties and agreements on nuclear non-proliferation and nuclear disarmament.

I believe that these actions will strengthen the IAEA. And I believe that the strengthening of the IAEA is a must to the world community as its responsibility for the assurance of non-proliferation shared with the world community is surely increasing and this assurance is vital to ensure that the Atoms are used only for peace.