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NUCLEAR-WEAPON-FREE WORLD: WAYS OF MOVING AHEAD

There has recently been growing interest in the issue of nuclear disarmament, nuclear-free world, but world open towards peaceful nuclear energy uses for the benefit of mankind. Such interest is to a large extent caused by the immediate task of strengthening the nuclear non-proliferation regime, especially on the eve of the 2010 NPT Review Conference.

Nuclear disarmament, elimination of nuclear weapons has been a long dream of human beings, at least, of the vast majority of mankind. Since the invention of the A-bomb and even before its development, the best minds have been thinking about elimination of such terrible weapon of mass destruction under international control. The fathers of the bomb – Niels Bohr, Leo Szilard, Robert Oppenheimer and others – set forth the idea of international control of nuclear energy back in 1943–1945. They defined it as a system of multilateral measures designated to rule out the use of nuclear energy as a tool of war and to the detriment of humanity. By its first resolution in January 1946 the UN General Assembly established the UN Atomic Energy Commission which was charged with the elaboration of proposals on «the elimination from national armaments of atomic weapons and of all other major weapons adaptable to mass destruction.»¹

Since then many specific plans on elimination of nuclear weapons with international verification mechanisms have been developed, but none of them has been implemented for this or that reason. The major factor, however, was the lack of sincere desire of nuclear-weapon states to get rid of such arms and the willingness of some non-nuclear weapon states to join the nuclear club. The theory has emerged that nuclear weapons are the means of deterrence necessary to maintain international and regional stability. We will get back to this point below.

Let me remind the reader of the most famous nuclear disarmament initiatives: the Acheson-Lilienthal Plan of March 1946;² the Baruch Plan of June 1946; Soviet proposals on banning the nuclear weapons of June 1946 and on international verification of June 1947; the Khrushchev initiative on total and complete disarmament of September 1960; the statement by the U.S.S.R and the United States on agreed principles for the negotiations on disarmament (the Zorin-McCloy Accords) of September 1961; Final Document of the UN GA special session on disarmament of June 1978; the disarmament program by the Olof Palme Commission of April 1982; the Gorbachev statement on the program of complete elimination of nuclear weapons of January 1986; the decision on the principles and objectives of nuclear nonproliferation and disarmament approved at the NPT Review and Extension Conference in May 1995; the Canberra Commission report on nuclear weapons elimination of August 1996; the decision of the 2000 NPT Review Conference on 13 practical steps for disarmament; the Hans Blix commission on WMD report of June 2006, etc.

Among the most recent proposals, one can name the appeals for nuclear-weapon-free world mentioned in the articles by U.S. politicians – George Shultz, Henry Kissinger, William Perry and Sam Nunn – published in the *Wall Street Journal* in January 2007 and in January 2008. In



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September 2008 the governments of Australia and Japan initiated the establishment of the international commission on nuclear nonproliferation and disarmament chaired by ex-Foreign Ministers Gareth Evans and Yoriko Kawaguchi, which is formulating its proposals in the context of preparation for the 2010 NPT Review Conference. In December 2008 the *Nuclear Zero* campaign was launched worldwide and was supported by political and public figures in many countries.

Despite the lack of significant real progress in achieving the aforementioned declared goals and many other disarmament plans, launch of such initiatives and debate on them at various intergovernmental and nongovernmental forums have generally positive impact. First of all, such plans mark to the governments and general public the need to undertake measures leading to the elimination of nuclear weapons; and they also facilitate the mobilization of public opinion in favor of such steps. The mankind should know that there are opportunities and intentions to deprive it of nuclear threat forever. Secondly, such initiatives create favorable environment and stimuli for achieving provisional agreements on nuclear arms control and, hence, bring the humanity closer to the nuclear-weapon-free world.

In the recent decades, a few initial steps in this direction – arms reduction and limitation – have been taken, even though they required some effort. Among them is the 1963 Limited Test-Ban Treaty; the 1968 Nuclear Non-Proliferation Treaty (NPT); the 1972 U.S.-Soviet ABM Treaty (ceased to exist after Washington's withdrawal from it); the 1974 and 1976 Threshold Treaties between the Soviet Union and the United States restricting the underground tests and peaceful nuclear explosions; the 1987 INF Treaty; the 1991 START Treaty; the 1996 CTBT (not in force, but the moratorium on nuclear tests is being complied with); and the 2002 SORT Treaty. France and the United Kingdom have lately undertaken unilateral nuclear arms reductions beyond their international commitments (under Article VI of the NPT).

In general, what is the outcome of these long-term and laborious efforts guided by the two major nuclear powers – the U.S.S.R/Russia and the United States? An entire class of delivery systems, i.e. the medium- and shorter-range missiles (500–5,500 km), has been eliminated under reciprocal verification. So far this progress relates only to Moscow and Washington, while some other states possess such missiles and develop new types of them. However, nuclear arsenals have substantially been reduced – at the peak of the Cold War in the mid-1980s, experts assessed their number at 70,000; by now this figure has gone down to 25,500 nuclear explosive devices³. By 2012 when the SORT Treaty expires, the number of nuclear warheads belonging to Russia and the United States may further decrease. Since the mid-1990s there exists a moratorium on nuclear tests and, therefore, natural tests of new types of nuclear weapons are not conducted. Nonetheless, there are no restrictions on the modification of delivery systems (at least, for Russia and the United States in conformity with the existing agreements).

On the other hand, a serious blow against the further disarmament prospects was made by the Bush administration and its decisions to withdraw from the ABM Treaty and to deploy the missile defense system elements in Eastern Europe. There emerged some difficulties with maintaining the international nuclear nonproliferation regime. The NPT is based on the clear assumption that there is a strong and unbreakable link between nonproliferation and disarmament and this norm is fixed in the treaty itself. The lack of real measures in the area of nuclear reductions impedes the process of further strengthening of the regime, provokes new challenges to its existence. If there is no significant progress, the 2010 NPT Review Conference may fail just as its predecessor in 2005.

A legitimate and inevitable question poses how to move towards the nuclear-weapon-free world, what the prospects of the progress are, what the key problems are and how to resolve them. This paper contains a number of ideas and should not be regarded as a comprehensive set of proposals aimed at achieving such a far-reaching goal.

PRIORITY MEASURES

Further strategic offensive arms reduction by Russia and the United States. In accordance with the existing arrangements, December 2009 will mark the end of START I signed in 1991 and containing the agreed system of transparency measures and reciprocal inspections. These mechanisms have ensured appropriate predictability of the parties' actions with respect to strategic nuclear weapons. Thus, after 2009 the Moscow Treaty of 2002 will no longer be under verification and this will call into question the possibility of comprehensive, irreversible and transparent functioning of this agreement until its expiration in 2012. Moreover, the very prospect of nuclear disarmament may become doubtful.

In the last few years the parties have been conducting quite sluggish consultations on the further steps in this area and have even made a number of promising statements, exchanged specific projects, but have not reached any specific results. Taking into account that the expiry date of START I is a few months away, what should and can be done in the foreseeable future?

Presumably the best solution would be to prepare a new treaty on further strategic offensive arms reductions, if possible, by December 2009. Much will depend on the readiness of the Obama administration to such decision. At least, the parties could elaborate and agree upon the key parameters (or the framework) of the new agreement and announce them before the 2010 NPT Review Conference.

The new treaty should not only contain the transparency measures (perhaps, in a lighter version, since both parties have been overburdened with them and with the excessive intrusiveness of some of the existing rules. From the point of persistent progress in further reductions, it would be important to provide for new ceilings in the draft new treaty even before the expiry of the Moscow Treaty. While the latter provides for 1,700–2,200 operationally deployed strategic warheads, the new agreement could reduce this number, perhaps, to 1,300–1,500.

Such arrangements would not introduce principle changes to the current geostrategic stability and balance, but would demonstrate to the rest of the world the intention of the both nuclear powers to follow the course of reductions. The very fact of resumption of serious talks on some basic parameters of the future treaty would be a good message before the 2010 NPT Review Conference.

Obviously, the parties should come to a mutually beneficial solution concerning the U.S. plans on the deployment of missile defense in Eastern Europe. Perhaps, one of the ways out would be to form a global missile defense system involving not only Russia and the United States, but also some other countries. This would create favorable conditions for more successful global nuclear disarmament.

Entry into force of the CTBT. Another significant step which cannot be further delayed is the entry into force of the CTBT signed back in 1996. The current moratorium on nuclear tests, despite its positive effect, is not a reliable and sustainable barrier for the emergence of new types of nuclear explosive devices. The treaty does not rule out the option of maintaining safety and reliability of existing warheads and this is only logical, since nuclear weapons would continue to exist. But the United States from time to time faces the pressure of military-industrial lobby and national nuclear laboratories that suggest that new types of weapons, such as RNEP (robust nuclear earth penetrator) and RRW (reliable replacement warhead), be developed.

The entry into force of the treaty, the number of states parties to which is amounting 150 (including Russia, the U.K., and France), depends on the accession of only nine countries – the United States, China, India, Pakistan, Israel, the D.P.R.K., Iran, Indonesia, and Egypt. The first nation to undertake such a step should be the United States, which was one of the sponsors of CTBT's elaboration; the other positive example for non-signatories would be China. Those two powers signed the treaty long time ago, but have so far failed to ratify it.

In the course of debate in the U.S. Senate in the late 1990s, the major argument against the treaty was the lack of adequate verification measures. However, competent and independent expert panels (headed by Gen. John Shalikashvili and the other one appointed by the



National Academy of Sciences) have proved the reliability of the CTBT verification system (in fact, it already functions successfully on a significant scale). The practice of maintenance of the existing moratorium on nuclear explosions is yet another argument in favor of the fact that verification can hardly hamper the effectiveness of the functioning of the treaty.⁴

CTBT's entry into force will mainly depend on the position of the Obama administration (during his campaign the new president demonstrated positive attitude towards the treaty) and Democratic majority in the Senate. China presumably is waiting for the decision of Washington and as soon as it ratifies the CTBT, Beijing will hardly be able to delay further the process of accession. It would be helpful for China to go for it even earlier, so that it may encourage the Americans to speed up the ratification process.

There are some other states named in the CTBT, which are crucial for its entry into force. Hopefully the Indian government may sign and ratify the CTBT – the country concluded the agreement with the United States on peaceful nuclear uses and got favorable terms from the Nuclear Suppliers Group on cooperation in this area (including potential cooperation with Russia, France, etc.). If so, Pakistan may also join the treaty. Hence, a few aforementioned countries will remain beyond the CTBT framework and it will be difficult for them to justify their non-accession facing the challenge of complete isolation from the international community.

MEASURES TO STRENGTHEN THE NONPROLIFERATION REGIME

In order to strengthen the international nuclear nonproliferation regime it would be reasonable to draw the line beneath all the concerns related to Iran's and North Korea's nuclear programs.

As far as North Korea is concerned, the dialogue between Washington and Pyongyang goes on and, according to IAEA Director General Mohamed ElBaradei, the parties have reached an agreement on a verification protocol enabling the IAEA inspectors to check the nuclear plants in Nyongbyong. Dr. ElBaradei in his recent speech at the UN General Assembly also raised a hope that the conditions for D.P.R.K's prompt return to the NPT would be set and the Agency would be able to apply comprehensive safeguards with respect to North Korea.⁵

As far as Iran is concerned, this country is a state party to the NPT, so the IAEA has all capabilities to inspect its declared nuclear material. However, the Agency is not able to get a full picture of undeclared nuclear materials and undeclared nuclear activities of Iran. According to ElBaradei, the Agency has not achieved substantial progress concerning the issues pertaining to possible military aspects of Iran's nuclear program. He urged Tehran to implement all transparency measures to ensure the international community of the peaceful character of its nuclear program.⁶

Iran signed the Additional Protocol to the Safeguards Agreement with the IAEA enabling the Agency to verify its undeclared nuclear activities. For some time the country complied with the provisions of the document, even though it was not ratified. Some time ago Iran refused to implement it further.

It would be important to have Iran ratified and joined the Additional Protocol. Nonetheless, the essence of the problem is different – Iran is setting up the uranium enrichment production facilities in Natanz and this step causes legitimate concerns of many nations. The NPT (in its Article IV) recognizes the right of all states to peaceful nuclear energy uses. But many of them call into question the peaceful character of Iran's enrichment efforts and the UN Security Council has taken numerous decisions urging Tehran to suspend such activities. However, the Iranian authorities reject such resolutions and apply to their right to peaceful nuclear energy uses. The Agency has a number of other unresolved issues related to Iran – Dr. ElBaradei pointed them out at the IAEA Board of Governors meeting on November 27, 2008. How could some progress be achieved in those areas?

Would Iran agree to abandon or to impose verified restrictions on its enrichment program? It is doubtful, but one cannot rule out such option. Much will depend on the position of con-

cerned parties, notably the United States, to strike a deal with Tehran on the entire set of issues urgent for Iran and other countries of the region, including regional security matters. Due to the low efficiency of the current negotiations, one may assume that it would be useful to form a new multilateral forum for negotiations and consultations. Within such framework, Washington and Tehran would have a chance to get into direct dialogue. Such forum could bring together P-5 of the UN Security Council, Germany, the EU, Iran, and a host country that would facilitate such negotiation process. It would be preferable if one of the regional states accept this role, e.g. Azerbaijan, if its leadership would be ready to assume the mission.

FISSILE MATERIAL CUT-OFF ARRANGEMENTS

The ban on production of fissile material for nuclear weapons would be a stride forward towards strengthening nuclear nonproliferation regime and a tangible step towards nuclear-weapon-free world. Taking into account the complexity of this problem, the negotiation process can and should be commenced without delay and without waiting for the implementation of the aforementioned priorities.

According to the International Panel on Fissile Materials (IPFM), in mid-2008 the world stock of highly enriched uranium reached 1,670 tons (plus-minus 300 tons); the amount of plutonium was about 500 tons. Half of it is designated for civilian use and this figure will only grow in the future as it does now.⁷

Back in the 1990s four out of five nuclear weapon states (except China) stopped in the act of good will the fissile material production for nuclear weapons and made an appropriate declaration.

In 1993 the UN General Assembly approved unanimously the resolution in favor of non-discriminatory, multilateral and internationally and effectively verifiable Fissile Material Cut-Off Treaty,⁸ and the Conference on Disarmament adopted the mandate for negotiations and established the corresponding special committee for such negotiations. However, until now the committee cannot start its work, since some countries, China among them, stipulate the commencement of talks with the demand for simultaneous start of negotiations on other disarmament issues. The situation is aggravated with the fact that in 2006 George Bush's administration refused to support the need for a verifiable ban, while other nations (Egypt, Pakistan) call for considering the elimination of existing fissile material stock in parallel with the debate on production issues.

As far as verification is concerned, the aforementioned 1993 UN General Assembly resolution (sponsored, in fact, by the Clinton administration) did not only specify the need for verification, but also appealed to the IAEA for assistance on this matter.

IPFM studied the problem and published a report in October 2008. The document concludes that the verification should not become the responsibility of a new body, but would rather be the prerogative of the IAEA. «The IAEA's Safeguards Division would have to grow substantially, and funding for such an expansion would have to be arranged. The costs would be negligible, however, in comparison, for example, with the production costs of nuclear energy.» As far as, technical FMCT verification issues, they can be resolved as well.⁹

An issue that will inevitably emerge in the course of negotiations is the level of enrichment appropriate to introduce the ban. Obviously, the production of weapon-grade fissile material should be totally prohibited. But what should be done with the lower enriched fissile materials used not only in military vessels (submarines, cruisers, aircraft carriers), but also for civilian purposes (for instance, ice breakers)? Besides, different states use fissile materials with different grade of enrichment.

Despite the aforementioned difficulties, such ban deserves immediate and profound negotiation – it is important to launch the talks as soon as possible, preferably before the 2010 NPT Review Conference.



INTERNATIONALIZING NUCLEAR REDUCTIONS

Moving towards nuclear-weapon-free world one should take into account the pace of all parties to the process. Article VI of the NPT obliges all (not just some) states parties to the treaty to pursue negotiations that would prevent nuclear arms race and lead to nuclear disarmament.

In comparison to thousands of warheads available to Russia or the United States, other nuclear weapon states have modest arsenals. According to some expert estimates, France possesses 300 nuclear explosive devices, China – 240, the United Kingdom – 185, Israel – 80, Pakistan – 60, and India – 50. North Korea might have about a dozen of charges, but it is not clear to what extent they are ready for use.¹⁰ However, all these nations will have to take part in shaping the nuclear-weapon-free world.

Small, if such term applies, nuclear weapon states, above all, China, normally refer to the fact that the two major powers should be the first to cut down their arsenals. But to which ceilings? France and Great Britain have undertaken some reductions, but conducted them without common and multilateral arrangements and without verification.

Public opinion in the U.K. shows grave concern over the government plans to shift to the new generation of Trident SLBMs and to upgrade nearly the entire existing arsenal of warheads for these missiles without adequate transparency.¹¹

France does not demonstrate great transparency in nuclear matters either. President Sarkozy announced in March 2008 the decision to commission a new M51 ICBM and pledged that France «could and should be more transparent with respect to its nuclear arsenal than anyone ever has been.»¹²

The question is when these states will eventually be ready for negotiations, as the NPT requires them to do.

Even though India, Pakistan, and Israel are not parties to the NPT and have no formal commitments to negotiate nuclear disarmament issues, they bear moral responsibility and any nuclear-weapon-free world would be impossible without their involvement.

As we have mentioned above, it would be important to have India and Pakistan join the CTBT and demonstrate proactive approach in fissile material cut-off talks. After all, according to the IPFM, only India, Pakistan, and perhaps Israel continue to manufacture weapon-grade nuclear materials.¹³ Even though Israel officially denies the possession of nuclear weapons, it is a known fact that she is a NWS. It is significant that beside the aforesaid measures, Israel should be more proactive about the establishment of the WMD-free zone in the Middle East.

The United States and Russia do not have a magic bullet solution concerning the intermediate ceilings leading to a nuclear weapon – free world – be it the first stages of reductions or any further steps. Two mighty nuclear weapon states should carry the major burden of reductions, especially at the initial phase. But other nations should also join later as well.

The reductions will not only affect strategic, but also substrategic nuclear weapons. Russia and the United States have already carried out serious measures within the framework of the 1991–1992 unilateral initiatives.¹⁴ Russia's entire nuclear arsenal is based within its national territory, while the United States still keeps several hundred nuclear gravity bombs in Western Europe.

Naturally the reductions should cover the delivery means of all states. One of the pillars for such agreement could be the 1987 INF Treaty between Russia and the United States – it was an adequate mechanism to eliminate the entire class of missiles under appropriate verification. The treaty was successfully implemented in full, but it is still effective indefinitely, in order to prevent the resumption of production of banned missiles. The rules of missile disposition, verification, inspections could be applied to other states and other nuclear disarmament processes in the future.

The international community should encourage further efforts to establish nuclear-weapon-free zones in different regions of the world. Such zones do not only provide a legal nuclear-weapon-free status to appropriate regions, but also ensure that such status will not be

breached – the territories will be free from a nuclear attack or threat of such attack. The zones already exist in Latin America, South Pacific, Africa, Southeast Asia, and Central Asia. Unfortunately, not all those treaties have entered into force in full. Besides, Mongolia declared its territory free from nuclear weapons. There is also the Antarctic Treaty, which prohibits any military activities on this uninhabited continent.

ABOUT NUCLEAR DETERRENCE

At the certain stage of our movement towards nuclear-weapon-free world one will have to think about the issue of nuclear deterrence. Many individuals, mostly dealing with nuclear weapons and military strategy, assume that such arms make an essential element of deterrence and help to maintain global and regional stability, hence playing generally positive role in the world. Even though the deterrence, as everyone agrees, is based on mutually assured destruction (MAD), it has become an important part of modern politics and politico-military strategy of some states, so many look at it as an appropriate form of existence of the civilization.

Would one agree submissively with such an approach? No, especially when we speak about potential progress towards nuclear-weapon-free world.

These doubts are based on the assumption that firstly, weapons seem to be recognized as the pillar for global stability; and not simple weapons, but weapons with the huge destructive power capable of ruining the planet. Does the mankind deserve such deplorable plight? Secondly, one can hardly guarantee 100 percent that nuclear weapons will never be used. Thirdly, the history knows and will know numerous conflicts (and armed conflicts) between the states inflicting thousands and even millions of casualties. How can such conflicts be deterred? Finally, there is a threat of use of nuclear weapons by terrorists, even in the form of the so called dirty bomb.

One may argue that nuclear weapons have existed for over 60 years, they have not ever been used and there were no large-scale *hot* wars. Yes, that's true, but despite the existence of a so called nuclear deterrent there occurred many, too many *small* wars, they are going now and they have led to multimillion civilian casualties.

There is another factor pushing us towards nuclear-weapon-free world – it is the so called human factor. Potentially dangerous incidents happen from time to time, – and quite often by the way, – and they are related to safety and security of nuclear weapons. Numerous media reports on this matter are common place.

After all it's a human being who eventually decides on the employment of nuclear weapons. Will someone take the responsibility to use these lethal weapons even in the most dramatic moment? Perhaps the role of the weapons is a myth and its influence on conflict resolution is not as important as it is believed to be.¹⁵

The mankind should exist and develop, it should not rest on the barrel of gunpowder but should rather have a better, more reliable basis for its further evolution. This historic mission is not a mission impossible.

NUCLEAR VS CONVENTIONAL

The issue of total and complete disarmament was raised many times in the past. And it was connected with both nuclear and conventional weapons. Nonetheless, one cannot really expect the solution to the problem of conventional weapons to be found in parallel with the elimination of nukes.

At the same time, one will have to take into account the development of some conventional arms, notably high-precision strategic delivery systems, designated to carry non-nuclear warheads so far.

The United States is quite serious about developing and testing conventional warheads for Trident SLBMs that would provide the president with the alternative to nuclear weapons and



the ability to make a quick strike against any facility in the world. According to the U.S. press, the Congress delays the funding for this program, albeit it has allocated \$200 million to study the concept. Some Congressmen maintain that other nations, such as Russia or China, will not be able to distinguish nuclear and non-nuclear Trident missiles and may take such launches for the beginning of nuclear warfare. A group of renowned experts, including former Commander in Chief, United States Strategic Command (USCINCPAC) Eugene Habiger, former Director of the Lawrence Livermore Laboratory John Foster, Prof. Richard Garwin et al. conducted research on the matter and argued that the benefits outweighed the risks.¹⁶

Former U.S. Secretary of Defense Harold Brown believes that the ability of the United States to project conventional force and the concerns of other nations on this matter (fear of attack, threat or forced replacement of the regime) only raise the interest in nuclear weapons as the means to balance the positions and to deter the U.S. supremacy in non-nuclear arms.¹⁷

To solve the potential problems, George Perkovic from the Carnegie Endowment for International Peace and a British physicist James Acton maintain that «an eventual nuclear-abolition project could only succeed if it were accompanied by changes in broader military relations that convinced states that now rely on nuclear deterrence that nuclear weapons would not be necessary to deter large-scale military interventions».¹⁸

As far as Russia is concerned, it will have to increase sharply the readiness of its conventional forces, above all, to introduce qualitative changes. The same issue is true for a number of other states. At the same time, there is an issue of encouraging the United States to undertake certain self-restrictions on its military development programs, especially with respect to re-arming its intercontinental ballistic missiles with conventional warheads.

These matters are not easy to resolve. They have not been faced in the recent past – but after all, the very problem of progressing towards nuclear-weapon-free world is a new task itself and it requires a generally appropriate response and a good will of all the parties.

TOWARDS THE NUCLEAR-WEAPON-FREE WORLD

This must be the most complicated issue. The nations, including nuclear weapon states and large states as such, will have to start thinking anew. They will have to get rid of some obsolete but convenient stereotypes, to find new ways of meeting their demand for raw materials, markets, etc., without resorting to force, especially nuclear force. Now it is not clear how it will happen, but the process may be long and painful, for the most powerful states in particular.

However, it is necessary to make a try right now and to identify some general ways of progressing towards nuclear-weapon-free world.

One of the problems is that the number of nuclear weapons differs from state to state. While Russia and the United States possess about 95–97 percent of the global nuclear arsenal, other nations have only hundreds or even dozens of nuclear explosives. How, by what principles and in what stages should planned, deliberate and step-by-step reductions be conducted, so that they may satisfy all the concerned parties and do not violate international and regional stability during the implementation process and beyond?

The states enjoy a legitimate right to have assurances of full compliance from other parties to the process. Evidently even the minimal amount of nuclear weapons hidden from elimination may radically change the global power balance and have negative and unpredictable implications. Hence, there is a need to hedge such risks.

It is even more difficult to elaborate a system of international control of nuclear arms and delivery systems reduction. The mankind has such experience – START I and the INF Treaty with their system of bilateral monitoring; multilateral verification mechanisms of the CTBT; comprehensive safeguards of the IAEA, including the 1997 Additional Protocol.

A number of states are able to use the so called national technical means, mainly by using satellites, the efficiency of which is high and will only continue to increase. One may think about

the ways of using the available satellite data for the sake of the international verification system. The IAEA already uses space surveillance data (supplied by individual states) in its safeguards implementation.

Nonetheless, this will not be enough. It will be necessary to develop the entire system of disarmament verification and it is advisable to use the existing IAEA safeguards. The latter have proved their effectiveness, have a legitimate basis in the form the IAEA Statute and decisions of its main bodies. The system could be supported with additional measures, including the expansion of the inspection staff and provision of international observers with the access to all appropriate sites.

The safeguards are also advantageous, as they help to prevent the diversion of nuclear materials from peaceful to unauthorized uses. The creation of nuclear-weapon-free world does not impede further progress of nuclear energy – to keep the energy balance, to use it for health-care and other civilian purposes, to maintain the environmental balance on the planet. In fact, in the early 1990s the IAEA ensured nuclear disarmament of South Africa and monitored the entire process – so it has all the capabilities for control.

Another additional measure would be to set up special UN forces (with proper geographical balance) under the aegis of the Security Council, in order to verify the implementation of the agreement, especially in key regions where nuclear weapons are produced, stored and dismantled.

These are only a few problems that can be predicted today. Naturally, as the mankind moves to the nuclear-weapon-free world, more issues will emerge and they may even be more complicated. However, there is a need to move towards such world, world without nuclear weapons. Today many criticize the NPT for the difficulties with its implementation. But believe us, such matters will continue to pop up, unless the mankind undertakes serious efforts to progress towards the nuclear-weapon-free world.

Notes

¹ UN General Assembly Resolution 1 (I), January 24, 1946.

² There is an evidence that the major author of the plan was Robert Oppenheimer, the father of the U.S. A-bomb.

³ <http://www.fas.org/programs/ssp/nukes/nukestatus.html>.

⁴ Arguments in favor of the CTBT are mentioned in the article by a leading U.S. expert on nuclear weapons, Richard Garwin (Richard L. Garwin, "A Different Kind of Complex: The Future of U.S. Nuclear Weapons and the Nuclear Weapons Enterprise," *Arms Control Today*, December 2008).

⁵ <http://www.iaea.org>. Statement to the Sixty-Third Regular Session of the United Nations General Assembly by IAEA Director General Dr. Mohamed ElBaradei on October 28, 2008.

⁶ Ibid.

⁷ *Global Fissile Material Report 2008*, <http://www.fissilematerials.org> (last updated January 19, 2009).

⁸ UN General Assembly Resolution, A/RES/48/75L, December 16, 1993.

⁹ *Global Fissile Material Report 2008...*

¹⁰ <http://www.fas.org/programs/ssp/nukes/nukestatus.html>.

¹¹ *Disarmament Diplomacy*, No. 88, Summer 2008, pp. 27–39.

¹² *Disarmament Diplomacy*, No. 87, Spring 2008, pp. 12–13.

¹³ *Global Fissile Material Report 2008...*

¹⁴ According to the Federation of American Scientists, Russia reduced the number of substrategic nuclear weapons to 2,000, while the United States to 500 warheads (<http://www.fas.org/programs/ssp/nukes/nukestatus.html>).



¹⁵ In this connection, it would make sense to look at the report issued by U.S. experts in 1996 – it reviews the cases when Washington was considering the possibility of nuclear weapons use, but refrained from such step (Korean War 1950-1953, conflict between China and Taiwan in 1958, the Cuban crisis of 1962, the 1973 Middle East war, the Soviet invasion in Afghanistan in 1979-1987, etc.). (William Yengst, Stephen Lukasik, and Mark Jensen, Nuclear Weapons that Went to War (NWTWTW), DNA-TR-96-25, draft final report sponsored by the U.S. Defense Special Weapons Agency and Science Applications International Corp., October 1996, unclassified – <http://www.npec-web.org/NWTWTW>). See also “The Myth of Nuclear Deterrence,” *The Nonproliferation Review*, Vol. 15, No. 3, November 2008, pp. 421–439.

¹⁶ *Washington Post*, August 16, 2008.

¹⁷ Harold Brown, “New Nuclear Realities,” *Washington Quarterly*, Winter 2008, pp. 7–22.

¹⁸ George Perkovich and James M. Acton, “Abolishing Nuclear Weapons,” *Adelphi Paper* 396, 2008, pp. 24–26.