



PREVENTING NUCLEAR CATASTROPHE

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PREVENTING NUCLEAR CATASTROPHE

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Through a complete overall analysis of the existing nuclear non-proliferation regime and an investigation of specific ways to resolve local nuclear crises, the book provides recommendations aimed at increasing the effectiveness of states' and international organizations' policies to prevent further nuclear proliferation. The Declaration, a unique roadmap offering practical solutions to prevent a nuclear catastrophe, gives a summary of the said recommendations.

The book is intended for a wide audience and contains primary documents on the issue.

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INTRODUCTION

The Luxembourg International Conference on Preventing Nuclear Catastrophe, which took place May 24-25, 2007, became a truly significant world-class event. Its thematic urgency is underpinned by growing challenges and threats of nuclear proliferation, a genuine emerging danger of nuclear terrorism, and the recognition of the limited effectiveness of traditional approaches to security.

Contrary to what many had expected, the end of the Cold War and strained nuclear confrontation failed to make the world more secure. Even worse, in the new geopolitical conditions the threat of conflict involving the use of nuclear weapons has become relevant again.

In the first decade of the 21st century the international community and politicians in most countries are becoming increasingly more concerned about the prospects of non-proliferation. In 2004 at the behest of former UN Secretary General Kofi Annan a group of eminent experts and public figures from 15 nations produced a report on international security, emphasizing that ".... the nuclear non-proliferation regime is now at risk because of lack of compliance with existing commitments, withdrawal or threats of withdrawal from the Treaty on the Non-Proliferation of Nuclear Weapons to escape those commitments, a changing international security environment and the proliferation of technology. We are approaching a point at which the erosion of the non-proliferation

regime could become irreversible and result in a cascade of proliferation."¹

The causes of this disturbing situation can be classified as follows:

First, the countries that have not yet joined the NPT are located in the most unstable regions of the world. They are engaged in conflicts that are ripe for war with a relatively high probability of the combat use of nuclear weapons — for the first time since August 1945 and with unpredictable consequences for global politics.

Second, the cases of Iraq, Iran, the DPRK, Libya and a number of other countries have demonstrated the limited effectiveness of international control over the circulation of nuclear materials and technologies under the NPT framework (Article III) and the safeguards of the International Atomic Energy Agency (IAEA), in particular. As surprising as it may be thirty years after the NPT came into force, 42 of the 189 state parties have not concluded agreements with the IAEA for the application of full-scale safeguards. The 1997 Additional Protocol to the IAEA Agreements has not been signed or ratified by more than 90 states, 16 of which possess substantial nuclear programs. The nuclear powers that are NPT parties have agreements with the IAEA only for selective control at specific facilities.

Third, it became public knowledge that a black market in nuclear materials, technologies and expertise had emerged, involving in the past a number of NPT parties (specifically, Libya, Iran, Iraq, the DPRK, Saudi Arabia, Algeria, Egypt, and Indonesia), along with individuals and organizations from countries not bound either by the Treaty or by related export limitations and control mechanisms (Pakistan).

Fourth, the global market in nuclear materials and technologies with its promise of billions in profits has become a stage for tough competition between exporters rather than importers. As they fight for markets, the supplier nations (primarily the USA, the USSR/Russia, Canada, France, the PRC, Brazil, Argentina, Portugal, the FRG, Italy, Belgium, Norway, etc.) tend not to be too scrupulous about compliance with IAEA safeguards, or concerned about the limitations of the safeguards or even about the importer nations

¹ A more secure world: Our common responsibility: Report of the Secretary General's High-level Panel on Threats, Challenges and Change, 2004// <http://www.un.org/secureworld>

(Israel, India, and Pakistan) not being parties to the NPT. Even evidence of military projects underway in a number of countries could not deter the exporters from dealing with them. The existing informal export control mechanisms (the Zangger Committee, Nuclear Suppliers Group — NSG, Wassenaar Agreements, etc.) are largely insufficient to eliminate this and related problems.

Fifth, following a series of attacks with a tremendous loss of civilian lives, starting from the tragedy in America on September 11, 2001, the factor of international terrorism has come to the forefront of security concerns, fueled by terrorist organizations openly declaring their aspiration to acquire access to nuclear weapons and other weapons of mass destruction (WMD). Moreover, there is no confidence that accumulated stockpiles of nuclear materials and, in some cases, nuclear munitions are sufficiently secure and will not fall into the hands of terrorists through theft or corruption, or as a result of political destabilization or civil war. Being illegal by definition and beyond the control of the IAEA and national internal mechanisms and laws, the expanding black market poses a special danger as a source of nuclear materials, technologies and expertise for terrorists.

Sixth, as the experience of North Korea has demonstrated, the almost complete universality of the NPT — its late 1960s founders' dream come true — can by no means prevent further nuclear proliferation. The case of the DPRK has revealed a new threat, potentially setting an example for other states to follow, namely: enjoy the benefits of international cooperation in peaceful nuclear energy and science as party to the NPT under Article IV and openly withdraw from the Treaty with a three-month advance notice under Article X and build your own nuclear weapons. First and foremost, Iran, as well as Algeria, Egypt, Brazil, Turkey, South Korea and even Japan, drew suspicion as potential NPT "refuseniks".

Finally, the seventh factor is the current policies of the nuclear powers that are party to the NPT, primarily the USA and Russia. Relevant aspects of these policies include their course to upgrade their national nuclear arsenals, their relations to each other in this area, their stand on non-proliferation with respect to the countries outside the Big Five and nuclear export issues. While reducing the enormous "excess" nuclear weapons stockpiles,

which are a legacy of the Cold War, these powers continue developing their nuclear weapons into the foreseeable future, reaffirming the nuclear deterrence strategy and thereby essentially violating the spirit of the NPT (Article VI), which requires nuclear powers to pursue nuclear disarmament in exchange for other nations' rejection of nuclear weapons. This factor was numbered last, but it is certainly not least in terms of importance. In a sense, if one were to view the Big Five powers as the subjects or initiators of the non-proliferation policy with a vested interest in its success, then the nuclear states that are not party to the NPT, threshold countries and other NPT parties, along with non-state actors, could all be seen as objects to varying degrees of the impact of non-proliferation regimes and policy. In light of this circumstance, as well as the tremendous military might and scientific, technical and economic capabilities and political influence of the five nuclear powers, the prospects for nuclear weapons non-proliferation largely depend on them.

The Luxembourg Conference mentioned above subjected all these factors to deep and comprehensive analysis. It brought together an "all-star team" of the most eminent experts from all over the world. It was initiated and organized by Alexei Arbatov, Corresponding Member (RAS), Head of the Center for International Security of the IMEMO; Vladimir Dvorkin, Principal researcher of the IMEMO (RAS), Professor, Full Member of the Russian Academy of Rocket and Artillery Sciences, Major-General, ret.; Viatcheslav Kantor, Ph.D., Chairman of the Conference Organizing Committee, President of the European Jewish Congress; Sergey Oznobishchev, Ph.D., Director of the Institute for Strategic Assessments; Roald Sagdeev, Academician (RAS), Distinguished Professor of Physics and Director of the "East-West" Center at the University of Maryland.

The importance of the conference's agenda and the authority of its participants received recognition in personal written welcome addresses from Russian President Vladimir Putin and from Deputy Prime Minister and Minister of Strategic Affairs of Israel Avigdor Lieberman. Prominent political figures and experts, such as Mohamed ElBaradei, Ph.D., Director General of the IAEA; Sergey Kirienko, Head of the Russian Federal Agency for Atomic Energy; J. Asselborn, Deputy Prime Minister, Minister for Foreign

Affairs and Immigration of Luxembourg; Hans Blix, Ph.D., former Director General of the IAEA, Chairman of the WMDC; Nikolay Laverov, Academician (RAS), Vice-President of the Russian Academy of Sciences; William Perry, former U.S. Secretary of Defense; and Rolf Ekeus, Ambassador, High Commissioner on National Minorities at the OSCE, addressed the conference and delivered presentations.

The Conference resulted in a Declaration (see Appendix 1), developed and signed by over forty of the most prominent and highly qualified experts, brought together from various countries. The Luxembourg Conference Declaration is not merely another general document; on the contrary, it is a unique road map offering practical solutions for the prevention of a nuclear catastrophe and may be in demand in all political venues. It provides a basis for working within both the intergovernmental and the nongovernmental community frameworks, using the "global expert dialogue" to achieve the stated aim. This document is a part of "the positive agenda," laying a foundation for building a more secure and stable world in the future.

Given the extreme importance of issues associated with countering the nuclear threat, it was decided to establish the Luxembourg Forum as a permanently functioning international nongovernmental organization. The intent is to create a unique platform for eminent experts from various countries to regularly exchange their views, develop practical recommendations for real policies and tackle current challenges and threats.



PARTICIPANTS IN THE CONFERENCE ON THE NUCLEAR THREAT AND THE CONFERENCE'S GOALS

Viatcheslav KANTOR, Ph.D.

Chairman of the Conference

Organizing Committee

We can and must share our concerns with the world. The voices of our respected participants will be heard. We must tell people that the nuclear threat is not a bugaboo or a publicity stunt. This threat is absolutely relevant for humanity as a whole and for each and every one of us. We must say it — and say it aloud to be heard — and repeat it as many times as it takes until people understand. There is traditionally no trust on the state level. This mistrust is quite logical and there is a long history behind it. In the meantime, since the nuclear holocaust threatens all countries, it is the mission of all of humanity to oppose this danger. This is a challenge for people who are, alas, disengaged, while being equally vulnerable.

We need to focus public attention on the dangers associated with the proliferation of nuclear weapons, including their availability to terrorists or rogue states. Furthermore, we need to establish a vehicle by which civil society in democratic countries can prod their governments to continue their efforts in the field of strengthening international legal frameworks for disarmament. Governments need to be encouraged to

take measures to reduce the number of intermediate-range and long-range ballistic missiles and further eliminate them.

Within the scope of the global expert and scientific community we can — and we must — take measures to impose a voluntary moratorium on the development of a new generation of high-tech weapons, including the militarization of outer space.

There are moments in human history when a single step, a single word said aloud can change the world, or, at least, our perceptions of it. I do hope that our message will make people take a new look at the worrisome world around them.

Mohamed ELBARADEI, Ph.D.

Director General of the IAEA

With new times come new challenges. While “Atoms for Peace” continues to express the IAEA vision in the 21st century, it is worth considering how our approach has evolved, in response to these new challenges, as we seek to implement various aspects of this vision.

The most visible challenges in recent years have come in the area of safeguards. The Agency, in its role of verifying nuclear non-proliferation, has been much in the public view, often referred to as ‘the world’s nuclear watchdog.’ Since the discovery of Iraq’s clandestine nuclear weapons programme in the early 1990s, the Agency has devoted extensive effort towards strengthening the nuclear safeguards regime — so as to provide credible assurance to the international community that nuclear material and facilities are being used exclusively for peaceful purposes.

In specific cases, such as in Iraq and in the Islamic Republic of Iran — we have been able to demonstrate how effective Agency verification can be, even under difficult conditions, provided that we are

granted the required authority and access to relevant information. Other factors — including new verification tools and approaches, such as satellite imagery and environmental sampling — have made the Agency better equipped than ever to carry out its 'watchdog' role. However, no strengthened safeguards measures can be fully effective in providing 'global' assurances as long as the regime itself is less than universally accepted.

Looking forward, it is clear that the international community must work harder to make the non-proliferation regime universal. But work is needed on many other fronts as well — to address new challenges and to find fresh ways of solving long-standing issues.

The 'big picture' of global security relates directly to nuclear arms control. The international community must be more assertive in resolving the root causes of global instability and insecurity — such as longstanding regional conflicts, poverty, and the suppression of human rights — which provide incentives for the proliferation of nuclear weapons and other weapons of mass destruction. We must also begin working together to develop and establish a system of collective security that does not depend on nuclear weapons. Concrete dialogue on this issue should begin immediately; because until such an alternative system is developed, we are less likely to move away from the doctrine of reliance on nuclear weapons for their deterrent effect.

In addition, information and expertise on how to produce nuclear weapons has become far much more accessible. This places extra emphasis on the importance of controlling access to weapon-usable nuclear material.

Given the increasing threat of proliferation, both by States and by terrorists, one idea that may now be worth serious consideration is the advisability of limiting the processing of weapon-usable material (separated plutonium and high enriched uranium) in civilian nuclear programmes — as well as the production of new material through re-processing and enrichment — by agreeing to restrict these operations exclusively to facilities under multinational control. These limitations would naturally need to be accompanied by appropriate rules of assur-

ance of supply for would-be users. We should also continue to promote technological innovation that would make future nuclear energy systems more proliferation-resistant.

Taken together, this array of non-proliferation and disarmament efforts will do much to advance the cause of "Atoms for Peace."

*(Extracted from an earlier article
by Dr. Mohamed ElBaradei)*

William J. PERRY, Professor, Stanford University
(former Secretary
of the U.S. Department of Defense)

The reality of a world free of nuclear weapons may not be accomplished for some time. In the meantime, nuclear weapons continue to pose an existential threat to civilization. Until nuclear weapons are eliminated, we should focus on steps to reduce their danger, or to use the words of Sakharov, to reduce the risk of annihilating humanity.

Hans BLIX, Ph.D.
Former Director General of the IAEA,
Chairman of the WMDC

Questions about the need for nuclear weapons still seem to be often discussed in the same way now as when the states of the world were less integrated and less interdependent than they are today, at a time when strategic thinking, strategies, preemption and trials dominated the discussion. I think it is time that we more fully recognize the good reality that inter-state wars are becoming rarer. But most foreign policy experts find wars between major powers even more unlikely today than before. Why? Wars between states used to be about borders, about territory, ide-

ology or religion in the past. These grounds are really gone between most states, including the great powers. The past rationales for war have disappeared in large measure, and interdependence has accelerated, making armed conflicts unlikely, while rogue states and terrorists may still provoke, and in some situations perhaps even require armed reaction under the authority of the Security Council. It is hard to see that it would have to be nuclear.

Rolf EKEUS, Ambassador
High Commissioner
on National Minorities at the OSCE

Even if during the Cold War era, the major powers managed successfully to avoid the use of nuclear weapons, inter alia, by applying varieties of deterrence doctrines, it is questionable that contemporary and future security constellations would permit the stable nuclear relationships of earlier times.

In our different times of potentials for a growing number of nuclear weapon states, some on the brink of becoming failed states, and in times of proliferation of nuclear technology (witness A. Q. Khan's operations) deterrence doctrines will not easily be translated into strategic stability.

The convergence of the search by terrorist networks for ever more destructive means with the growing accessibility of nuclear technology is radically increasing the risk of nuclear catastrophe. Defense breaks down when it comes to dealing with failed states or terrorist networks. Terrorists willing to die in a suicide attack cannot be deterred from using nuclear weapons.

The security concerns of all states in politically sensitive areas should be respected and addressed. We now begin to rediscover what the immediate postwar generation was painfully aware of, namely that a nuclear catastrophe can become a reality. Therefore the goal set by the NPT of a Nuclear Weapon-free world should no longer be a distant one.

Nikolay LAVEROV, Academician (RAS)**Vice President of the Russian Academy of Sciences**

The accelerated and uncontrolled development of global nuclear power may cause a crisis in the global community's ability to control the nuclear materials and technologies required to build nuclear weapons.

This new nuclear era is much more dangerous than the previous era, when there was a system of nuclear deterrence between the United States and the Soviet Union. That system no longer exists, and tremendous efforts are required to create a new system of security. The most important approach to preventing the dangerous proliferation of nuclear weapons and materials is an expansion of Global Partnership programs aimed at ensuring the maximum safeguarding of fissionable materials at all stages of the life cycle and providing for complex recycling of weapons-grade plutonium, nuclear submarines and missiles of various classes.

Since growth in non-military applications of nuclear power is inevitable, the world needs consistent internationalization of a network of uranium enrichment centers for nuclear power stations, as well as centers to recycle spent nuclear fuel under the aegis of the IAEA.

Vladimir DVORKIN, Professor**Principal researcher of the IMEMO (RAS);****Major-General, ret.**

We can state with a higher degree of confidence that the issue of nuclear-weapon states' performance of their respective obligations under Article VI of the NPT, pursuant to which all of them have undertaken to implement effective measures relating to the cessation of the nuclear arms race and nuclear disarmament under international control, is crucial in maintaining the most important treaty in human history with the potential to ensure global and regional security.

One of the key reasons that India, Pakistan and Israel have acquired

nuclear weapons is the insufficient attention paid to this issue. This is also true of the Iranian nuclear crisis, North Korea's de facto withdrawal from the NPT and the nuclear test following it.

We can reasonably assert that another obvious factor underlying the nuclear non-proliferation crisis is the failure by official members of the "nuclear club" to set forth coordinated and approved negative safeguards for NPT non-nuclear-weapon states.

Alexei ARBATOV, Corresponding Member (RAS)

Head of the Center for International Security, IMEMO;

Scholar-in-Residence of the Carnegie Moscow Center

A multi-polar world without nuclear disarmament is a world beset by further proliferation of nuclear weapons, with the escalating threat that such weapons may be used by states or terrorist organizations. In a multi-polar world, a new form of nuclear disarmament involves strengthening the non-proliferation regime and abandoning the nuclear deterrence strategy and methods by the nuclear-weapon states.

Roald SAGDEEV, Academician (RAS)

Distinguished Professor of Physics and Director of the "East-West"

Center at the University of Maryland;

Director Emeritus of the Russian Space Research Institute

Without the goal of the complete elimination of nuclear weapons, non-proliferation is doomed. The timing of the Luxembourg conference could not be more appropriate: the growing risk of nuclear proliferation at the same time as the emerging crisis in energy security and the challenge of global warming require that the use of nuclear energy be vastly expanded.

Sergey OZNOBISHCHEV, Ph.D.

Director of the Institute for Strategic Assessments;

**Professor of the Moscow State Institute for International Relations
(MGIMO) and the Higher School of Economics**

At present, the nuclear weapons non-proliferation regime is held back not by technical issues, but by a lack of joint determination and political will on the part of nuclear-weapon states. The escalating threat of nuclear weapons falling into the hands of new countries and terrorist organizations makes the task of erecting a barrier against nuclear proliferation all the more pressing.

All of this demonstrates the lack of intensive joint efforts on behalf of the expert community throughout the world to work out feasible and theoretically supported proposals for political leaders. The Luxembourg conference is designed to bridge this gap and initiate a new level of international cooperation aimed at preventing nuclear weapons proliferation.



OFFICIAL ADDRESSES TO THE CONFERENCE



VLADIMIR PUTIN

President of the Russian Federation

Your authoritative Forum is devoted to one of the most essential issues today — strengthening the nuclear non-proliferation regime.

The end of the Cold War significantly mitigated the nuclear threat; however, the world has not become a safer place. There are new unprecedented challenges we have to face; there are new but not less complex threats we have to oppose. Among them, key are international terrorism and the threat associated with increasing accessibility to terrorists of nuclear weapons and related materials.

Yet another destabilizing element is the trend towards an increasing importance of force in global affairs. As a result, some countries are tempted to choose a nuclear scenario. These adverse trends must be turned around by means of multilateral diplomacy and the available international legal framework.

The Non-Proliferation Treaty is the core component of the global security and stability system. It should be the primary platform for neutralizing emerging threats to the non-proliferation regime. We believe that the crucial components for success are the naturally interrelated processes of disarmament, non-proliferation and the use of nuclear energy for peaceful purposes.

Russia upholds its non-proliferation commitments. We are successfully implementing non-proliferation agreements and are ready to continue these constructive efforts. We expect that our measures to ensure stability

and security will find support with other nations and with the global community.

In parallel, we must create the political and economic conditions for non-nuclear-weapon states to fully exercise their right to use nuclear energy for peaceful purposes, subject to strict compliance with the NPT. To this end, we have developed an initiative creating the model of a global infrastructure for nuclear power generation. We have already taken the first step in this direction by establishing an international centre for uranium enrichment in Russia.

Broad support for the International Atomic Energy Agency's efforts and enhanced efficiency of its monitoring role is a top priority for strengthening the nuclear non-proliferation regime.

I am confident that this forum will carry out an unbiased analysis of the current situation in nuclear non-proliferation developments and formulate recommendations to strengthen the nuclear non-proliferation regime.



JEAN ASSELBORN

**Deputy Prime Minister
of the Grand Duchy of Luxembourg,
Minister for Foreign Affairs and Immigration**

Mr. Chairman, Dear Honorary Participants, Dear Participants,

It is a great honor for me to be able to welcome you in Luxembourg today at the occasion of this Conference on Preventing Nuclear Catastrophe organized by the European Jewish Fund. I want to welcome very heartily my friend Mohamed ElBaradei. I had an opportunity to receive him in Luxembourg a few weeks ago, and I told him, and I think you agree with me, that he has one of the most difficult and the most important tasks in the international organizations today. Rarely a meeting on this subject has been attended by so many high ranking experts, and I welcome the fact that this event takes place here in Luxembourg, in the heart of the European district.

More than fifty years ago, Luxembourg was one of the founding members of the European Coal and Steel Community, predecessor of the European Union. This historical step, which resulted in the creation of a supranational institution - this was a revolution in itself - , was taken only few years after Luxembourg's population had suffered from the war and devastation. But despite the fact that many resentments had not yet disappeared, a vast majority was supportive of this decisive move to insure peace and stability for the European continent.

But as peace was consolidated between past enemies, tensions grew on a wider scale. During the Cold War, the two superpowers were point-

ing tens of thousands of nuclear warheads and missiles at each other, and humankind had to face the risk of mutually assured destruction. The end of this era, more than fifteen years ago, raised the hope that nuclear weapons would soon completely disappear, but this kind of optimism may have been premature.

Of course, we are not confronted anymore with the perspective of total annihilation of humankind as in the past, but new threats have arisen. Nowadays some state and non-state actors try to acquire nuclear military capabilities, mostly under the cover of peaceful use of nuclear energy or through illicit procurement networks, thereby constituting a major challenge to the global non-proliferation regime. Moreover, the continued presence of thousands of warheads in the arsenals of the major powers represents a preoccupying situation in the context of nuclear disarmament.

Major steps have certainly been taken in tackling these issues. A considerable reduction of strategic and non-strategic nuclear weapons has taken place since the end of the Cold War and the international community is acting resolutely to address the serious nuclear proliferation events that have occurred in the last years.

But more needs to be done. Efforts in the nuclear arms control and disarmament process, including non-strategic nuclear weapons, are essential if we want to send the right signals to the States which are critical of the current disarmament efforts, as well as of our calls for the strengthening of non-proliferation standards. The strengthening of these standards is essential in order to prevent the further spread of nuclear weapons while, at the same time, we need to assure developing States that these non-proliferation measures will not limit their legitimate right to the peaceful use of nuclear energy as long as they act in accordance with the non-proliferation commitments foreseen by the NPT.

Indeed, the global non-proliferation regime results from a delicate balance between the three mutually reinforcing pillars of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT): disarmament, non-prolif-

eration and peaceful use of nuclear energy. Lately, this Treaty, which during decades has prevented the spread of nuclear weapons, has come under pressure, and we need to find solutions in order to save this regime and the delicate balance it establishes. Discussions like the one on nuclear fuel assurances indicate, I believe, new ways for us to explore; Austria has recently issued an interesting paper on this subject. At the same time, we urgently need to overcome the deadlock in the work of the Conference on Disarmament in Geneva.

Moreover, we need to re-establish confidence in the global non-proliferation regime and trust between States. I am deeply convinced that the multilateral approach to these questions, as well as to security issues in general, is the only way to preserve peace and stability. Multilateralism is based on the concept of shared commitments and obligations, and I firmly believe that once all the States have reaffirmed this concept, worldwide tensions will diminish.

Furthermore, I don't consider it as too idealistic to say that all the money we are spending to maintain, modernize or increase our arsenals would be better spent in humanitarian cooperation efforts or development aid, which are also - and probably better - tools designed to achieve international peace and stability.

Mr.Chairman, Dear Honorary Participants, Dear Participants,

Let me come back to my introductory remarks. The creation of the European Coal and Steel Community was a courageous step undertaken by six countries, which were past enemies, at a time where it was not evident for States to abandon sovereign rights. This was the right choice. Today, in the area of nuclear weapons, this equation is still valid: if we manage to make the right concessions, the global gain will largely outweigh the individual losses.

Initiatives like this conference, reflecting on ways and means to strengthen the non-proliferation regime and move forward on nuclear disarmament, will help to bring us closer to our ultimate goal: a world free of nuclear weapons.

I wish you the best of success for your discussions.



AVIGDOR LIBERMAN

**Deputy Prime Minister of the State of Israel,
Minister of Strategic Affairs**

On behalf of the Government of the State of Israel I would like to extend a warm welcome to all the participants and organizers of the International Conference on Preventing Nuclear Catastrophe.

This Forum has gathered the most authoritative and globally recognized experts to discuss the key challenge that the international community is facing today — the ways to prevent a nuclear catastrophe, so its importance and significance can hardly be overestimated.

Life has proved that, given advanced technologies and globalization, we are becoming close to each other, and evil tends to spread fast over our small planet.

The world must remain united in the face of the pending nuclear threat posed by extremist regimes and terrorist organizations, which are capable of obtaining weapons of mass destruction.

That is why it is of utmost importance that representatives of many countries are gathered here, in the heart of Europe, to elaborate joint decisions to prevent a nuclear catastrophe.

I wish all participants and organizers of the Conference the best of luck and hope you will achieve the objectives set forth!



WELCOME ADDRESSES



Viatcheslav KANTOR, Ph.D.

Chairman of the Conference Organizing Committee

Facing the Challenge

Dear guests and participants of the Conference! I am glad to welcome you to the Luxembourg International Conference on Preventing Nuclear Catastrophe.

We have gathered here today because we share the same concerns and the same understanding. Our concern is that at the turn of the Millennium people have almost lost sight of the values that guided them through the second half of the 20th century. In those days — a mere twenty-something years ago — mutual nuclear deterrence and control over nuclear weapon non-proliferation held, beyond a doubt, the leading position on the global agenda. However, the great shocks that followed — the collapse of the bipolar system, the end of the superpower nuclear confrontation, a new emerging global world order, environmental challenges, the clash of principles of civilizations and many others — have changed our perception. Of course, no one is going to deny the importance of issues related to nuclear weapons. However, neither our personal perception nor our public opinion can focus on a wide range of problems at one time. Something has to be the top priority, while other issues remain on the periphery.

So the first message that our Conference is to announce to the world

(and I hope you will agree) is that the existing list of priorities is misleading. What I mean is that nuclear safety issues are low on today's agenda and are regarded as being less important.

This situation is all the more startling when you consider that combating international terrorism is the key item on the agenda for heads of state. It is perfectly clear to everyone that there is nothing scarier and more insane than international nuclear terrorism; yet somehow this topic escapes global attention.

We must share our concerns with the world, for there are more than enough reasons to be concerned. We must ask people to imagine what a nuclear weapon is like in the hands of terrorists or rogue states. It is that simple! Just imagine that Hitler had had an atomic bomb and try to speculate what could have happened to humankind! That would be a burnt sacrifice that would threaten all of humankind!

This danger is quite real today. I am not talking about Ian Fleming's fantasies about crazy people, about some "Doctor No," creating his own nuclear bomb on his island. No. Technological advances and relaxed vigilance are a terrible combination. This combination could allow nuclear weapons to fall into the hands of criminals or maniacs — whether it be al-Qaeda's leaders or the deranged heads of certain states.

There is an old saying "G-d, grant me the serenity to accept the things I cannot change; the courage to change the things I can; and the wisdom to know the difference."

What can we do? What must we do?

First, I repeat that we can and must share our concerns with the world. The voices of our respected participants will be heard. You are the leading international experts in this field, so we must tell people that the nuclear threat is not a bugaboo or a publicity stunt. This threat is absolutely relevant for humanity as a whole and for each and every one of us. We must say it — and say it aloud to be heard — and repeat it as many times as it takes until people understand. We can do this and we must do it.

Second, there is traditionally no trust on the state level. This mistrust is quite logical and there is a long history behind it. In the meantime, since the nuclear holocaust threatens all countries, it is the mission of all of humanity

to oppose this danger. This is a challenge for people who are, alas, disengaged, while being equally vulnerable.

Still, we who are gathered here today do not represent official authorities. We speak on behalf of the global expert community. Paying tribute to IAEA efforts, I think we could elaborate a vehicle for monitoring and analysis in the field of nuclear technology and weapon non-proliferation. Unbiased monitoring and analysis can become a core element of the international non-proliferation regime.

Third, unbiased monitoring and analysis are not sufficient by themselves. We need to draw the attention of the global community and mass media to this issue.

The purposes of such efforts are obvious. We need to focus public attention on the dangers associated with the proliferation of nuclear weapons, including their availability to terrorists or rogue states. Furthermore, we need to establish a vehicle by which civil society in democratic countries can prod their governments to continue their efforts in the field of strengthening international legal frameworks for disarmament. Governments need to be encouraged to take measures to reduce the number of intermediate-range and long-range ballistic missiles and further eliminate them.

Finally, within the scope of the global expert and scientific community we can — and we must — take measures to impose a voluntary moratorium on the development of a new generation of high-tech weapons, including the militarization of outer space.

Dear Colleagues, I have outlined those areas for our possible joint efforts that seem particularly important to me. Undoubtedly, our Conference will reveal other areas and propose detailed ideas for their exploration.

The most important thing for me is that we are all here because we share the same concerns and the same understanding. We are all working for the same cause.

There are moments in human history when a single step, a single word said aloud can change the world, or, at least, our perceptions of it. I do hope that our message will make people take a new look at the worrisome world around them.

I have the honor of announcing that our Conference is open.



Mohamed ELBARADEI, Ph.D.
Director General of the IAEA

Preventing Nuclear Catastrophe: Where Do We Go from Here?

Earlier this year, four American *éminences grises*, Henry Kissinger, William Perry, George Shultz and Sam Nunn — representing a wealth of experience in defense and security strategies — declared that reliance on nuclear weapons as a deterrent is becoming “increasingly hazardous and decreasingly effective.”

They called for urgent international cooperation to move towards a world free from nuclear weapons. The following week, the Bulletin of the Atomic Scientists announced that they were moving the hands of their famous Doomsday Clock two minutes closer to midnight. “Not since the first atomic bombs were dropped on Hiroshima and Nagasaki,” they reported, “has the world faced such perilous choices.”

Introduction: The Evolving Nuclear Threats

In recent years, it is clear that nuclear threats have become more dangerous and more complex. A new phenomenon of illicit trade in nuclear technology has emerged. Countries have managed to develop clandestine nuclear programs. Sophisticated extremist groups have shown keen

interest in acquiring nuclear weapons.

In parallel, nuclear material and nuclear material production have become more difficult to control. Energy security and climate change are driving many countries to revisit the nuclear power option. But with that, there is also an increasing interest in mastering the nuclear fuel cycle to ensure a supply of the necessary nuclear fuel. The concern is that by mastering the fuel cycle, countries move dangerously close to nuclear weapons capability.

Add to that the threat of the nuclear weapons that already exist. Roughly 27 000 nuclear warheads remain in the arsenals of nine countries. Strategic reliance on these weapons by these countries and their allies undoubtedly motivates others to emulate them. And of course, plans to replenish and modernize these weapons create a pervasive sense of cynicism among many non-nuclear-weapon States — who perceive a “do as I say, not as I do” attitude.

Today, I would like to share with you some ideas that may help to prevent a nuclear catastrophe.

Strengthening the Nuclear Non-Proliferation Regime: Four Critical Aspects

First, we must secure existing nuclear material stockpiles and tighten controls over the transfer and production of nuclear material. Effective control of nuclear material is the “choke point” for preventing the production of additional nuclear weapons.

There are currently over 1800 tons of plutonium and high enriched uranium in civil stocks. Many initiatives are in progress to help countries improve physical protection of this nuclear material. Good progress has been made in the past few years, but hard work still lies ahead. Efforts in that direction should be redoubled.

Controlling the export of nuclear materials and technology has, in the past, proven a weak link in the non-proliferation chain. Information on exports should be systematically shared with the IAEA, to assist in verifying their end use. In addition, to increase their effectiveness, export control

mechanisms should be expanded to include all nuclear suppliers.

We should also work to minimize and eventually eliminate the civilian use of high enriched uranium (HEU) — particularly uranium enriched to 90 percent or greater. Nearly 100 civilian facilities around the world, mainly research reactors, operate with small amounts of HEU. But most of their functions could be achieved using low enriched uranium (LEU). Research should continue to address the remaining technical hurdles in order to enable research reactors to perform all required functions using LEU.

It is also crucial that we improve control over nuclear material production: that is, uranium enrichment and plutonium separation activities. More than three years ago, I raised this issue in an article in *The Economist*.

I am encouraged by the range of ideas and proposals that continue to come forth as a result. Some have proposed the creation of an actual or virtual reserve fuel bank of last resort, under IAEA auspices, for the assurance of supply of nuclear fuel. This bank would operate on the basis of apolitical and non-discriminatory non-proliferation criteria. Russia has proposed converting a national facility into an international enrichment center. And Germany has recently proposed the construction of a new, multinational enrichment facility under IAEA control.

At the IAEA, we have been examining these and other ideas and their associated legal, technical, financial and institutional aspects, with a view to presenting a progress report to our Member States in the next few weeks. Controlling nuclear material is quite a complex process; yet if we fail to act, it could be the Achilles' Heel of the nuclear non-proliferation regime. And it is clear that an incremental approach, with multiple assurances in place, is the way to move forward. The ultimate goal, in my view, should be to bring all such operations under multinational control, so that no one country has the exclusive capability to produce the material for nuclear weapons.

Technological innovation is also essential. We should support R&D on proliferation resistant fuel cycles, as well as technological innovation to enhance nuclear safety, security and waste management.

Second, we must strengthen the verification authority and capability of the IAEA.

Effective verification has four elements: adequate legal authority; state-of-the-art technology; access to all relevant information; and sufficient human and financial resources.

The additional protocol to comprehensive safeguards agreements has proven its value since its adoption in 1997. With better access to relevant information and locations, the IAEA provides better assurance. Without the additional protocol, we cannot credibly verify the absence of undeclared nuclear material or activity. But regrettably, we have this mechanism in force in less than half the countries party to the NPT. In fact, we have more than 30 NPT member countries that have not even concluded a safeguards agreement — and for which we cannot perform any verification activities. For a credible verification system, a safeguards agreement and an additional protocol should be the universal standard.

In 2004, a UN High Level Panel singled out the IAEA's work as "an extraordinary bargain". For \$130 million per year, we verify the nuclear programs of all non-nuclear weapon States, which amounts to more than 900 declared nuclear facilities in 70 countries. Our presence on the ground, combined with our technical expertise, provides unique information and assurance. We are the eyes and ears of the international community.

Yet the Agency constantly risks lagging behind in the technology race, because we are forced to make do on a shoestring budget. As new facilities and countries come under safeguards, our portfolio is constantly expanding, without corresponding increases in funding or personnel. Even now, with every other world leader highlighting nuclear proliferation and nuclear terrorism as the number one global security threat, we continue to struggle to secure a modest budget supplement of \$15 – 20 million dollars.

Given the threats we face, given that IAEA verification, as we have learned, can be crucial for decisions on war and peace, it is obvious that support for the Agency is key to a viable system of non-proliferation and of international security.

Third, the nuclear non-proliferation regime must develop a more effective approach for dealing with proliferation threats. The NPT and the IAEA Statute make clear our reliance on the United Nations Security Council to ensure compliance with non-proliferation obligations. The present system offers an array of measures ranging from dialogue to sanctions to enforcement actions. But judging by our record in recent years, these measures — rather than being applied in a systematic manner to deal effectively with proliferation issues — are employed haphazardly, and too often with political overtones.

Dialogue is withheld as a reward for good behavior, rather than as a means to change behavior and reconcile differences. Public rhetoric substitutes for effective diplomacy. The lesson should be obvious by now: we cannot bomb our way to security. Rather, we should focus on addressing the underlying causes of insecurity.

For nuclear non-proliferation to be enforced effectively, we need a more agile and more systematic approach for responding to cases of proliferation. Dialogue, incentives and sanctions — and, in extreme cases, enforcement measures — all have their place in such a system; but the system itself must be drastically reformed. The Security Council will have clear moral authority and full public acceptance if the non-proliferation and arms control regime it is aiming to enforce is universal, with one clear commitment by all parties, including the nuclear-weapon states: the establishment of a nuclear-weapon free world. Short of this, the Council's ability to deal with proliferation issues will continue to be of limited effectiveness — as past experiences have clearly shown.

Equally important, for the Security Council to be effective in dealing with proliferation threats, it must recognize the inextricable linkage between different threats to our security. Poverty in many cases leads to human rights abuses and lack of good governance. This in turn results in a deep sense of disempowerment and humiliation, which creates the ideal breeding ground for extremism and violence. And it is in regions of long-standing conflicts that countries are most frequently driven to pursue nuclear weapons and other weapons of mass destruction.

The Council, therefore, must operate in a framework that recognizes

the indivisible nature of security, and the symbiotic relation of all its aspects.

This brings me to the urgent need to revive disarmament efforts. We must find a way for disarmament to be taken seriously. Article VI of the NPT requires parties to the Treaty to pursue disarmament negotiations in good faith, as well as negotiations "on effective measures relating to cessation of the nuclear arms race at an early date." Thirty-seven years after the Treaty came into force, we are well past the date when party states should be developing new nuclear weapons.

Yet that is precisely what is happening.

Virtually all nuclear-weapon states are extending and modernizing their nuclear weapon arsenals well into the 21st Century, with some making statements about the possible use of nuclear weapons, or the development of more "usable" nuclear weapons. Some have even started to question their legal obligation to disarm under the Nuclear Non-Proliferation Treaty — despite the agreed interpretation by all NPT Parties, including the nuclear-weapon states, at the 2000 NPT Review Conference, of the "unequivocal undertaking by the nuclear-weapon states to accomplish the total elimination of their nuclear arsenals."

It should be no surprise that many states have started to question the credibility of the commitment of the weapon states to disarm.

And consider some of the justifications that have been recently put forward by some of the nuclear-weapon states. No major power is getting rid of its nuclear weapons, so why should we?... Despite the current lack of a nuclear threat, we cannot be sure that one will not re-emerge over the next 50 years... Our country (or region) must be protected by a nuclear deterrence capability... We can be trusted to use restraint with our nuclear weapons.

The flaws in these arguments are painfully obvious. The very same logic could be used by every country to justify developing its own nuclear deterrent. Why, some ask, should the nuclear-weapon states be trusted, but not others — and who is qualified to make that judgment? Why, others ask, is it okay for some to live under a nuclear threat, but not others, who continue to be protected by a "nuclear umbrella"?

What the weapon states consistently fail to take into account is the impact of their actions. Whether they choose to continue their reliance on nuclear weapons, as the centerpiece of their security strategy, or to abandon that reliance, their choice will undoubtedly influence the actions of others.

Conclusion: A New Security Paradigm

It is therefore clear that a security strategy rooted in "Us versus Them" is no longer sustainable. Every country, irrespective of its ideology or orientation, will do what it takes to feel secure, including seeking to acquire nuclear weapons. This is the stark reality, moral equivalence aside. What makes this more dangerous is that, in an era of globalization and interdependence, the insecurity of some will inevitably lead to the insecurity of all. The solution, therefore, in my view, lies in creating an environment in which nuclear weapons are universally banned and morally abhorred, and their futility is unmasked.

The prospects for progress in preventing a nuclear catastrophe will remain grim unless we begin working on a new security paradigm. A security paradigm in which no country relies on nuclear weapons for its security. A system with effective mechanisms for resolving conflicts. A system in which longstanding regional tensions, like those in the Middle East, are given the priority and attention they deserve. A system that is equitable, inclusive and effective.

Last month, the International Campaign to Abolish Nuclear Weapons was launched in Melbourne, Australia. The campaign calls for a Nuclear Weapons Convention — a convention to outlaw nuclear weapons worldwide, much like the conventions on biological and chemical weapons.

In July 1996, the International Court of Justice (ICJ) declared that "the threat or use of nuclear weapons would generally be contrary to the rules of international law applicable in armed conflict, and in particular the principles and rules of humanitarian law."

As with the convention on anti-personnel landmines, public involve-

ment could provide the momentum to make the Nuclear Weapons Convention a reality. Christopher Weeramantry, a former judge of the International Court of Justice who took part in its landmark 1996 advisory opinion on nuclear weapons, has written that "if we want more than the kind of snail's pace action of the past 50 years, we need a public campaign worldwide that is vocal enough to force swift action."

We are at a crucial juncture. The system is faltering. We need serious commitments on nuclear disarmament, with clear milestones and accountability. We need an effective approach for dealing with proliferation threats. We need to develop a multinational approach to the nuclear fuel cycle. We need a universally robust verification system. We need an effective system for the security of nuclear material. And above all, we need to start serious work towards a new collective security paradigm. If we want to prevent a nuclear catastrophe, the deadline for action is now.



Sergey KIRIENKO

Head of the Russian Federal Agency
for Atomic Energy

I would like to start off by reading at the request of the President of the Russian Federation his address to the participants of the International Conference on Preventing Nuclear Catastrophe:

Greeting Address of the President of the Russian Federation Vladimir PUTIN

Dear Chairman and Conference Participants!

It is a great honor for me to be here with you and to take part in the opening of this conference. I would like to share a few brief remarks with you on the core theme of the conference.

In order to identify the measures that the world community should promote today to improve security and strengthen non-proliferation internationally, we need to understand what makes today's situation different. The challenge of non-proliferation safeguards has been with us for as long as nuclear weapons have existed. However, the situation is significantly different today. This difference stems from the fact that ten, fifteen or twenty years ago the pressures on the non-proliferation regime that Mr. ElBaradei has commented on primarily came from malign intent. In other words, at that time you could confidently argue that any person attempting to initiate

a revision of the safeguards or any nation claiming that existing safeguards restricted its actions was obviously pursuing a malign intent. "Malign intent" means the intent to access or create weapons of mass destruction. That was absolutely obvious. It did not require any proof.

That environment has changed dramatically. Given the current shortage of energy supplies and the fact that access to sustainable, reliable and affordable energy resources is becoming fundamental to sustainable development, many developed and developing nations are beginning to recognize that they should pursue peaceful domestic nuclear power generation to overcome poverty and create equal opportunities for economic development. In other words, the very issue of access to the benefits of nuclear energy is now an objective process and an objective task. Consequently, the key factor is not simply to strengthen restrictions, enforcement or prohibitive measures in the non-proliferation framework. The primary objective is to exercise and balance two unconditional rights: the right to access the benefits of nuclear energy on one hand, and the right of the international community to insist on unconditional compliance with international security and non-proliferation safeguards on the other hand. This has dramatically changed the legal and economic environment. In fact, the ethical environment has also changed. Bans are no longer tenable, whether in economic, political, social or moral terms.

The need to find a balance between these two rights requires us to pursue a multilateral approach, where the IAEA should continue to be the key instrument. We are confident that all international efforts must operate under the auspices and leadership of the IAEA.

I would like to take this opportunity to thank the Director General for his active role and the active role of the IAEA in dealing with all these issues. Additionally, I would like to emphasize that the position adopted by the nations in control of all applicable nuclear-cycle technologies, the members of the so-called "nuclear club," is of paramount importance in this respect. We believe that the responsibility of these nations today should primarily be to assume responsibility for assuring equal and open access to the benefits of nuclear energy for all nations of the world on the one hand, while taking responsibility for creating and operating security and non-prolifera-

tion compliance mechanisms on the other hand.

In this context, I want to briefly comment on Russia's efforts in this area. Please notice that I said "efforts." I will not be talking about discussions, proposals or reviews. We are actively involved in such discussions and open to cooperation, but we believe it should be incumbent on all the nuclear-fuel-cycle nations to do more than talk. We must become proactive.

This fact may have been forgotten, but Russia has destroyed the largest quantity of weapons-grade fissile materials to date. You are aware that Russia allocated 500 metric tons of 90% enriched HEU for downblending to energy grade; more than a half of this material has already been destroyed or converted into nuclear fuel. We are committed to pursuing this program and downblending the entire volume by 2013, meaning that the material will cease to exist for military purposes.

My second theme is confidence-building measures, transparency and openness. Russia is currently restructuring its nuclear energy industry, and the President signed a new law and decree in late April requiring the Russian civilian nuclear industry to operate under internationally accepted standards of openness and transparency. We see this as the most important precondition for confidence-building, predictability and transparency.

The third theme is what President Vladimir Putin commented on in his welcome address, namely, the Russian initiative to build an international uranium enrichment center in Russia. This is a logical conclusion from the assumption that every nation has a right to access the benefits of nuclear energy. However, there are two sensitive elements in the nuclear energy process — uranium enrichment and spent fuel processing and disposal. The distinction between civilian and military applications in these elements is very narrow and extremely difficult to monitor and control, which is illustrated by the developments around the Iranian nuclear program.

Consequently, Russia is committed to making this contribution. The Angarsk uranium enrichment facility has been earmarked to take part in this program. This is definitely a milestone in the history of both Russia and the Soviet Union because it is the first time that a closed nuclear facility has been removed from the so-called high security facility list, providing direct

access to experts and inspectors, first and foremost from the IAEA.

The Russian Government informed the IAEA that it was ready to subject the Angarsk facility to IAEA safeguards. A bilateral treaty was signed with Kazakhstan to make the Angarsk facility the basis for an international uranium enrichment center. These two cofounders, Russia with its huge industrial uranium enrichment assets, and Kazakhstan, as a nation in control of some of the largest natural uranium reserves, will guarantee all other participants in this center a predictable and reliable supply of natural uranium and enrichment services. Any nation joining the operations of the center will enjoy assured services, fuel supplies for nuclear power plants, and, last but not least, a share in the revenues from this extremely profitable business.

I hope that today Mr. ElBaradei and I will also be able to discuss the possibility of using this international center to implement an IAEA initiative to create a guaranteed stock of low enriched uranium under the control of the IAEA Board of Governors. This would offer an assured supply to all countries, regardless of politics.

Another very important issue is the creation of a new generation of nuclear fuel cycle technologies in which the two vulnerable links, enrichment and reprocessing of spent fuel, would be addressed not on a political or organizational level, but with the help of technology to remove these vulnerabilities from the nuclear fuel cycle and make it inherently secure. These will certainly have to be multilateral international projects, for example, on thermal nuclear energy and on fast reactors to burn the most dangerous nuclear materials. Our next speaker, Dr. Laverov, is better qualified than I am to talk about the joint projects we are currently implementing in this area.

To conclude, let me say once again that we are convinced that the most important challenge facing the international community is how to solve the problem of security guarantees in the world while guaranteeing compliance with the non-proliferation regime and the unconditional right of every country to the benefits of nuclear energy. This issue can only be addressed on a multilateral basis. That is why we believe that this conference is not only a very timely forum, but it is the only way to go if we are to find the necessary solutions. Since we have been speaking about enrichment, I want

to say that the group of people here in this room has an intellectual enrichment level close to 100%. That guarantees that the solutions proposed by this Conference will take us one step closer to addressing this important international task.



Hans BLIX, Ph.D.

Former Director General of the IAEA,
Chairman of the WMDC (Sweden)

I welcome the opportunity to share some thoughts with so many eminent thinkers and experts. As you know and as you have mentioned, I chaired in the Independent 14-Member International Weapons of Mass Destruction Commission, that presented 60 recommendations a year ago. I am happy to sit next to one of the prominent members, Mr. Perry, and I know that Mr. Arbatov is here. I can see that Mrs. Lewis is here, and I understand that also Mr. Dhanapala will be here, so the commission will be strongly representative.

Half of the report and half of the recommendations have regard to nuclear weapons. I do not propose to discuss or explain these proposals, since you are familiar with many of them. Rather, I want to say that the report, which I have here, and which I think we can make available, is an overview of problems and arguments and possible solutions to nuclear, biological, chemical weapons threats. There is also a discussion of missiles, export controls, the UN role and the NGO roles.

It seeks to offer a broad and balanced orientation. The reception, I can tell you, has been so far rather positive in many governments and NGOs. The nuclear weapons States' governments have not, however, given any signs of approval, nor did we actually expect that to happen. They are cautious and certainly not "jumping" at the proposals of nuclear disarmament. The Report is now appearing in translations: in Russian, Chinese, Japanese,

Spanish, Arabic and Finnish.

I agree with Mr. ElBaradei who said that it's time to wake up and it's time for public discussion, and I would echo what Mr. Kofi Annan, whom I met last night in Oslo, has said about the world at the present time "sleep-walking" into rearmament. We need to wake up from that, and we need to wake up public opinion. I'm often asked what our priority issues and proposals are, so let me mention at least a few of my priorities. I think some of them would be priorities for the other members as well. The first would be the entry into force of the Comprehensive Test Ban Treaty.

This should not be an unrealistic goal, at least if there is a democratic administration in Washington. I think if the United States were to ratify the Comprehensive Test Ban Treaty — for which there is even bi-partisan support in Washington — then there would be a positive domino effect. Egypt and the DPRK party might pose special problems. Egypt has said that they will not accept a CTBT unless Israel accepts the NPT. I think it is an unrealistic position, and I think they will be brought around.

The DPRK would probably also ask for some concessions, but if the negotiations in Beijing succeed then I think this must be part of it, even though it might pose special problems for the United States and China, who have not ratified the CTBT, to demand ratification by North Korea. In my view, no other agreement in the field of arms control could be more helpful to change the climate towards peace and towards disarmament, than the CTBT.

My second priority would be a verified cut-off agreement regarding highly enriched uranium and plutonium for weapons purposes. As you know, discussions are taking place about that. My commission felt that negotiations could be started without placing verification in the mandate. However, it is clear that verification can and must be a part of the Treaty. Absent verification, the Treaty may lead to suspicions and accusations about secret breaches. It might be worse than having no Treaty at all. Very different from the moratorium on nuclear tests, this Treaty could be subject to breaches in secret. Tests can not be carried out without being noticed.

I think discussions and agreements preventing the placing of weapons in space would be my third priority. It is urgent to start world public discus-

sions of the issue. The public is highly dependent every minute on peace in outer space. And I think the public would be shocked to learn about how engineers and military experts are preparing for war in space; war that might make a junkyard of outer space and destroy an asset that belongs to the whole World. The space war preparations need to be ended and to be relegated to the level of computer game activities.

Lastly, let me mention the proposal that NATO nuclear weapons in Europe should be withdrawn to the U.S. and that Russian nuclear weapons be withdrawn to central storages deeper into Russia. In the cold peace that we have now, moving nuclear weapons out of Europe would help improve the atmosphere. The weapons are not needed and the public in Europe would approve of such removal.

Now let me present some thoughts of a different kind. Counter-proliferation is a special concept of action including armed action against the perceived risk that an adversary might possess or acquire nuclear weapons. It is not a new idea. The British made a commando raid, as you might remember, in Norway during WWII to blow up heavy water installations with the view of preventing Germany from going nuclear. And the best known case is, of course, the Israeli attack destroying the OSIRAK research reactor in Iraq. It was condemned by the Security Council. Today, such armed actions are being discussed regarding Iranian nuclear installations and less often regarding North Korean installations. Quite apart from the legality of such actions, how wise are they? The Israeli Iraq attack did not stop Iraq; rather it led Iraq to build duplicates of some installations. And missiles on the Iranian installations would not stop Iran's bomb ambitions. They might encourage such ambitions, if there are any. Attacks, whether on Iran or North Korea, might have horrendous consequences. I think there is no doubt about that. Would retarding a nuclear program that is suspected to be aiming at weapons be worth these risks? For a reliable effect there would need to be an occupation or a durable regime change, and how can you guarantee such changes? Iraq was not attacked by the UN in 1991 to be deprived of weapons of mass destruction. It was attacked to be driven out of Kuwait. And that was accomplished. The weapons of mass destruction inspection and monitoring were left in place. In fact that worked. The weapons of mass de-

struction were destroyed and new ones were not produced. The war in 2003 was unnecessary to eliminate any weapons of mass destruction. However, inspections, backed up if need be by a bombing campaign (which worked in Iraq), would hardly be a more realistic long-term solution than occupation. For long-term reliability you need genuine consent and cooperation. If threat or use of force are not viable solutions to prevent proliferation, then what? My answer would be diplomacy, achieving acceptable accommodation without force. I think that is what the European security strategy of 2003 actually states. It says that the principal approach to non-proliferation must be to create such conditions that states like the DPRK or Iran do not feel the need for nuclear weapons.

My last point is a little bit more philosophical. Questions about the need for nuclear weapons still seem to be discussed in the same way as they were when the states of the world were less integrated, less interdependent than they are today. In fact, the discussion reflects an era when strategic thinking, strategic succession and triads dominated the discussion. I think it is time that we discover that interstate wars have become rarer. Most foreign policy experts find wars between major powers even more unlikely. Why? In the past, wars between states used to be about borders, about territory, ideology or religion. These grounds have disappeared between most states, including the Great Powers. You can no longer have wars between the European states, where so many wars were fought in the past. Or between Scandinavian states, or between Latin America states, or between the U.S. and Mexico, where there were also wars in the past. Nor, it is believed, between major states like the U.S., Russia and China. There are no longer any major ideological clashes. Could there be future wars? Over what? Over emissions of carbon-dioxide or exchange rates or access to oil? The past rationales for war have disappeared in large measure and the interdependence has accelerated, making conflicts unlikely.

While rogue states and terrorists may still provoke and, in some situations, perhaps even require armed reaction under the authority of the Security Council, it is hard to see that this reaction would have to be nuclear. This, I think, is part of the background for the interesting and sensational article which was published by Mr. Kissinger, my neighbour Mr. Perry, Mr.

Shultz and Senator Nunn. They feel that initiatives should now be taken to ensure nuclear disarmament. We hope that these initiatives will be taken by the U.S. as proposed by the authors of the article and that Russia and other nuclear weapon states will support it. I am sure that the world at large would enthusiastically support such initiatives.



Nikolay LAVEROV, Academician (RAS)

Vice President of the Russian
Academy of Sciences

First of all, allow me on behalf of the large group of Russian scientists working on the issue at hand and also on behalf of our Russian-U.S. Joint Committee to cordially greet all of you and thank the Organizing Committee for inviting me to participate in this conference.

Since we have heard a number of comprehensive and well-founded points on the conference subject, naturally, I will not discuss the same points again. I would rather focus on the most acute problems that have been addressed by many international conferences and workshops in recent years.

The first issue is concerned with the possibility that existing conflicts between major powers possessing nuclear weapons and delivery vehicles may be "resolved" by the use of these arsenals in the near future.

Analysis shows that there are no grounds to expect such a scenario. Nevertheless, we certainly should continue to undertake our efforts to decrease stockpiles of nuclear weapons.

The second issue is nuclear terrorism. I think that nuclear terror attacks can be expected, both in the near-term and, more likely, in the distant future.

I believe that discussion of this issue at various conferences, workshops, round tables and meetings of scientists and politicians in the context of the non-proliferation of sensitive nuclear technologies and materials has given

us deeper insight into the problem and enabled us to design and implement certain measures to ensure the physical security of nuclear sites and materials, tighter customs controls and an improved accountability system thereof. New methods aimed at managing the expanding use of nuclear energy throughout the world have been designed under the aegis of the IAEA.

But this is not enough. Analysis shows that nuclear terrorism does become a possible means of resolving longstanding conflicts in certain regions of the world with which we are all very familiar. In the long run, traditional means of settling these conflicts, i.e. negotiations and local wars using conventional weapons, eventually may escalate into a nuclear catastrophe, employing improvised nuclear devices and products made in undeveloped countries.

The essence of these concerns was expressed by Mr. Kofi Annan, Secretary General of the United Nations, when he reviewed the results of the May 27, 2005 Conference discussing the efficiency of the Treaty on Non-proliferation of Nuclear Weapons (NPT). He expressed the idea perfectly when he said that the world had sleepwalked into a nuclear dead-end. "Sleepwalked" is a very precise word. Indeed, the world is slowly and imperceptibly approaching a nuclear deadlock.

In his welcome remarks during the opening of the conference, Mr. K. Annan underscored that success would depend on the recognition of all nuclear threats, not just dangers related to implementation of the NPT. I agree with that view. Humanity is facing multiple and diverse nuclear threats today. To address them, we should first of all resolve our political issues by strengthening the treaty on non-proliferation of nuclear weapons, materials and technologies, as well as improving accountability, physical security systems and trafficking control.

I prefer dealing with technical issues related to the undeveloped nations' growing interest in the peaceful use of nuclear energy, particularly in addressing energy matters. Many countries that are fairly undeveloped in terms of science and technology actively seek access to nuclear technologies. As it has been emphasized here, this process is irreversible. In countries where nuclear infrastructure is already available, the number of

nuclear power units is increasing. Some countries that already have nuclear infrastructure are multiplying their nuclear units, and countries that lack nuclear capabilities are showing a growing desire to independently produce nuclear materials and build nuclear power stations. We believe it is important to realize that in the future these countries may not confine themselves to creating a peaceful nuclear infrastructure. Accelerated and uncontrolled development of nuclear power can obviously lead to a very dangerous situation in the area of nuclear materials and nuclear technologies, up to the production of nuclear weapons. We think that this has already led the world to a new phase where we will see wide-ranging use of nuclear energy. This new phase will be more dangerous than the previous one, where there was a system of nuclear deterrence created by the Soviet Union and the United States. Today, that system has collapsed, and tremendous efforts are required to develop a new security system. I think an important step towards doing so would be to design a system of incentives for states joining the nuclear club, aimed at voluntarily renouncing the possibility of producing enriched uranium and processing spent nuclear fuel.

The IAEA and Mr. Mohamed ElBaradei as Director General have been actively promoting this idea throughout the world, particularly in Russia, as was mentioned today by Mr. Sergey Kirienko, Head of the Russian Federal Atomic Agency. Therefore, I will not be speaking about this issue, as it has been discussed more than once in connection with the Angarsk nuclear fuel center set-up in Russia to supply enriched uranium. The first steps that have been already taken to involve more countries in creating this center are supported by scientists and specialists in Russia. The general public reacted to this decision unenthusiastically, though without protests, which is very important for Russia. It is good that the overall attitude is not negative, since such decisions can sometimes be blocked by public opinion. I think that Russia has responded positively because of extensive prior preparations.

Let me also remind you that Russia and the United States have directed considerable efforts to the non-proliferation of special nuclear materials and technologies. After the tragedy of September 11, 2001, the presidents of both countries proposed an initiative to broaden cooperation between

Russian and U.S. scientists in the area of international security and counter-terrorism. Joint committees have been established linking RosAtom, the U.S. Department of Energy, the U.S. Department of Defense and the Russian Ministry of Defense. The two countries jointly implemented major projects to decommission Russian nuclear submarines, reduce the amount of highly enriched nuclear fuel in nuclear submarines and research reactors, improve the physical security of nuclear sites, provide scientists and specialists of the Russian nuclear complex with employment opportunities in the civilian sector, and resolve other issues covering accountability and control over transportation of sensitive nuclear materials. We are well aware that this program has been sponsored by the European Union, the United States and Japan.

We believe that right now the most important thing is to carry out joint multifaceted research work on possible means to protect key nuclear technologies: uranium enrichment for fuel production and processing spent nuclear fuel assemblies in their countries of origin, internationalizing the nuclear fuel cycle. Russia and the United States are working on this in cooperation with the IAEA. The disputes that have arisen indicate that it will be a long time before we have reached unanimous decisions. One of the most difficult issues is the siting of international centers to provide enriched uranium services to countries that want to develop nuclear power but lack the technological capabilities to do so.

A number of countries have taken an aggressive stance in reference to the creation of such centers or accepting such services. Therefore, I believe we should be thorough and tactful, but always persistent, in making this idea, which is supported by the IAEA and its Director General, more acceptable, credible and convincing to those countries that currently oppose it.

Obviously, this project entails significant technical and engineering challenges, such as development of new nuclear power technologies that will be attractive for countries interested in nuclear energy production for peaceful purposes. I will not go into detail on those technical issues. However, I will say that considerable progress has been made in this area. In 2008 we will present a detailed report by a number of scientific communi-

ties around the world, including Russia and the United States.

Thank you for your attention, and let me wish all of you success in your efforts to eradicate the threat of nuclear catastrophe.



Rolf EKEUS, Ambassador

High Commissioner on National Minorities at the OSCE

The International Panel on Climate Change has again stated that Global Warming is a fact and that it has been caused by human activities, specifically burning of fossils - coal, oil and gas.

Awaiting ways to effectively exploit solar power and other sustainable energy sources, nuclear power for electricity appears to be subject to something of a comeback. It is therefore to be expected that new nuclear reactors will be constructed both in countries with longstanding experience of nuclear energy and in developing countries. The question we have to ask ourselves is whether the renewed interest in civil nuclear energy brings growing risks for proliferation of nuclear energy for military use. Looking back on the history of the application of nuclear energy, it is obvious that civil nuclear energy is the child of nuclear weapons. Nuclear fission was detected and deployed for weapons purposes; its civilian application was something of a spillover phenomenon which appeared more than a decade later with the first commercial reactors in the mid fifties.

The link between military and civilian nuclear technology is absolute and definitive. For the sake of developing nuclear energy production capability, without at the same time creating new nuclear weapons opportunities, a wall has to be kept up between the application of nuclear energy for civil and for military purposes.

That wall is manifest in the Nuclear Non Proliferation Treaty, the NPT. If the civil nuclear industry is to experience a renaissance, the non-proliferation regime must be restored, repaired and renewed.

As experienced at the most recent NPT Review Conference in 2005, there are deep-seated resentments among the Non-nuclear Weapon States Parties to the Treaty against the perceived lack of implementation by the five Nuclear Weapon States of their Treaty obligations under Article VI. This critique must be taken seriously. Although the two major nuclear weapon States can rightly point to the considerable numerical reductions of respective strategic weapon arsenals in implementation of their bilateral Arms Control Treaties and Agreements, none of the two — or the three other recognized nuclear weapon states — have managed to present a programme, even less a strategy, for a systematic and structured implementation of undertakings generated out of Article VI.

Furthermore, the two major nuclear powers do not set an example though their nuclear posture upheld from the Cold War era, by maintaining their strategic weapons on high alert and launch-on-warning, an accident-prone posture.

What instead should be required of them is cooperation, coordination and integration leading to transparency, joint early warning and the end of launch-on-warning, taking their strategic forces off alert and divorcing warheads from carriers.

A commendable agreement during the fading years of the Cold War era banning intermediate range nuclear weapons, the INF Treaty has still not been followed by any tangible steps as regards the elimination of tactical nuclear weapons. The numbers, storage or deployment of these weapons has not been accounted for in a reliable way. Considering their potential for terrorist acquisition, this raises concerns.

The struggle to preserve the strength of and respect for the non-proliferation regime has not been made easier by the surprising move of the United States in 2005 to enter into an agreement with India on nuclear cooperation. Under this agreement, India would be provided with all the privileges of a nuclear weapon State under the NPT without shouldering the obligations and responsibilities of the State Parties under Article I

and VI, other provisions of the Treaty, including the important principles of the Preamble of the Treaty and the political commitments made at the Review Conferences in 1985, 1995 and 2000, a nuclear test ban, negative security assurances to NPT State Parties and negotiation of a Fissile material Cut-off Treaty among them. Furthermore, India would not be bound by the commitments of Participants of the Nuclear Suppliers Group. The U.S.-India deal would not only signify a major shift in the U.S. policy of non-proliferation up to now, one of steadfast support for the NPT, but would destabilize the whole edifice of NPT, Nuclear Suppliers Group solidarity and the non-proliferation support arrangements.

The implication of the questionable implementation of Article VI has been a sinking moral and weakening trust in the NPT among many non-nuclear weapon States, especially those living in politically tense regions. If the authority of the non-proliferation regime were eroded, so would be the security it was supposed to provide. States may feel tempted to rush towards the nuclear weapons option, not necessarily towards the acquisition of weapons but towards a nuclear weapon capability, as a sort of insurance against the weakening of the commitments to the NPT.

The case of North Korea demonstrates a loophole, whereby a state can acquire proliferation-related technologies under the guise of peaceful intent and then withdraw from the Treaty after 60 or 90 days. This dysfunctional element of the NPT should be addressed and corrected. We don't know if Iran's intentions are to follow the example of DPRK, but the fact that Iran has violated its obligations under its safeguard agreement with the IAEA has raised widespread concern, not only among the major NW States and the Europeans, but first and foremost among its neighbours in the Gulf region and on the Arabian Peninsula.

If Iran were to acquire nuclear weapons, one or more States would most definitely ensure that Iran was not alone in obtaining nuclear weapons. The non-proliferation regime would be history. Chances for a nuclear conflagration would be high.

How to deal with the case of Iran is a challenge for the international community. If we presume that the acquisition of nuclear weapons is not a matter of prestige or political pride, but of security, the approach to the

Iran question would be through a dialogue with Iran, which would demonstrate that only a comprehensive solution would be enough to stabilize the situation. Security guarantees for Iran by the U.S. and an effective international verification and inspection regime (of a UNSCOM type) would be the two major components in such a solution, which should also contain Iranian support for stability and the end of sectarian violence in Iraq.

Iran claims that the reason for its efforts to develop an independent capability for enrichment of uranium for a civilian nuclear energy project is the need of safe provisions of reactor quality uranium. The proposals for a bank of reactor fuel under IAEA control as a guaranteed and last resort should be rapidly explored and implemented as a part of a comprehensive solution. The lessons of Iran and North Korea should encourage serious considerations of legal and practical steps to manage access to the full nuclear fuel cycle. This would obviously require supporting measures to provide reliable deliveries of reactor fuel for the civil nuclear industry, preferably linked to IAEA control and under full-scope safeguards.

An urgent supporting measure would be an early move by the Conference on Disarmament, CD, in Geneva towards elaboration of a Treaty on Fissile Material Cut-off.

Security for all stocks of weapons-usable plutonium and HEU worldwide should be assured, including removing HEU from research facilities around the world.

The Comprehensive Threat Reduction initiatives in all their dimensions should be reliably financed, and the export control mechanism of all NSG-members streamlined and strengthened.

Even if, during the Cold War era, the major powers managed successfully to avoid the use of nuclear weapons, inter alia, by applying varieties of deterrence doctrines, it is questionable if contemporary and future security constellations would permit the stable nuclear relationships of earlier times.

In our different times of potentials for a growing number of nuclear weapon states, some on the brink of becoming failed States, and in times

of proliferation of nuclear technology (witness A.Q. Khan's operations), deterrence doctrines will not easily be translated into strategic stability.

The convergence of the search by terrorist networks for ever more destructive means and the growing accessibility of nuclear technology is radically increasing the risk of nuclear catastrophe. Defence breaks down when it comes to dealing with failed States or terrorist networks.

Terrorists willing to die in a suicide attack cannot be deterred from using nuclear weapons.

The international economic and political trends point towards a snowball effect on demand for nuclear technology and a corresponding pressure on the non-proliferation regime. To this effect, a number of steps must be taken. Nuclear weapons must be even more difficult to acquire, which implies stronger control of existing fissile material and capability to produce them, including a cut-off on production of fissile material.

Security concerns of all States in politically sensitive areas should be respected and addressed. We now begin to rediscover what the immediate post-war generation was painfully aware of, namely that a nuclear catastrophe can become a reality.

Therefore, the goal set by the NPT of a Nuclear Weapon-free world should not be a distant one any more.

Let this meeting in peaceful and prosperous Luxembourg become the founding event for renewed engagement towards this goal.



SESSION 1



Chairman –
Roald SAGDEEV,
Academician (RAS)

Distinguished Professor of Physics,
Director of the “East-West” Center,
University of Maryland;
Director Emeritus
of the Russian Space
Research Institute
(Russia/USA)

New Challenges and Threats to NPT Regime and Mechanisms

Joseph CIRINCIONE

Senior Vice President for National Security and International Affairs at the Center for American Progress (USA)

I will discuss the threats that we face currently. This is familiar territory for all of us. I categorize the threats into four groups.

The first and most urgent threat we face is nuclear terrorism. This is not a new threat but it has received increased urgency with the rise of mass terrorist groups intent on acquiring nuclear materials, as has been documented in several independent and bipartisan studies. As the demand rises, unfortunately the supply remains unacceptably high. We are talking, of course, mostly about insecure nuclear material stockpiles in the states of the former Soviet Union and also in many other countries where corruption or instability could provide terrorists access to weapons or weapon materials. There is also the problem of highly enriched uranium used in generally insecure civilian facilities in some forty other countries.

The second greatest threat we face is existing arsenals. There are twenty six thousand nuclear weapons in the world, 96% of those weapons are held by the United States and Russia. Thousands of those weapons remain on hair-trigger alert ready to be launched at the other nation within 15 minutes notice. The Cold War is over but the weapons and postures of the Cold War remain.

These weapons represent at least three distinct threats. One is the threat of an accidental or unintentional war. The second is the example that they set for other nations that might acquire or expand their own arsenals. The third is the diversion of resources as we spend billions of dollars each year on these weapons, diverting resources from other, more pressing conventional needs. All these weaken both our national and our international security.

The third threat we face is the rise of new weapon states. North Korea, with its nuclear test this past October, is the most recent member of the nuclear club. Iran is busily acquiring the technology which could allow it to develop a nuclear weapon sometime in the next five to ten years. The danger here is not that these new states would use their weapons against us or even, in my view, that they would intentionally transfer a weapon to a terrorist group. The greatest danger is what happens next in their neighbourhoods. What will Saudi Arabia do, what will Egypt do, what will Japan do if Iran or North Korea consolidates as a nuclear-weapon state? This nuclear chain reaction could sweep through the region and around the globe. We already see it happening. In the last six months ten Muslim states have declared an interest in nuclear power programs. Let us be clear about this recent interest. In the entire Middle East there is one nuclear power reactor — the one under construction in Bushehr. In all of Africa there are two nuclear power reactors, both in South Africa. Suddenly, 62 years after the invention of nuclear energy we have ten major states in the region declaring their interests in nuclear power. This is not about energy; this is a hedge against a nuclear Iran.

The fourth and final threat we face is the collapse of the international non-proliferation regime. It is not often put that way, but it is just as much of a threat as the others. We now have a number of high-level reports that warn of the impending collapse of the regime and of the cascade of proliferation that could follow or, as former CIA Director George Tenet said, the nuclear dominos that could fall. This is a regime in serious trouble. I believe we are at a nuclear tipping point. The actions we take over the next two or three years will determine if these threats are reduced or if we trigger the second great wave of proliferation, one that could rival and even exceed the first wave of proliferation at the end of World War II. The actions we take will determine whether we continue the progress we've made over the last 20 years in reduc-

ing nuclear dangers or we will witness the launch of this new wave.

When I say, "continue the progress," that may surprise some people. We are bombarded so often with the dire news from Iran or North Korea that we lose perspective on how much we have accomplished in the last 20 years. Just think about this: 20 years ago this conference would have been a very different meeting. All the Russians would have been on the one side and all the Americans and Europeans would have been on the other, all the Asians, Africans and Latin Americans would have been trying to figure out where they should sit.

We have come a long way in 20 years and not just in seating arrangements. The number of nuclear weapons in the world has been cut a half from the Cold War high of 65,000 down to 26,000. There are fewer countries in the world that have nuclear weapons or nuclear weapon programs than there were 20 years ago. In fact, in the last 20 years more countries have given up weapons or weapons programs than have tried to acquire them.

These were not easy cases: Ukraine, Belarus, Kazakhstan, Argentina, Brazil, South Africa, Iraq in 1991 and, most recently, Libya in 2003 – 2004. They all gave up their weapons or programs. This was made possible in large part by the international architecture begun by the United States and Russia and many other countries in the 1960's. The nuclear non – proliferation regime now provides a global diplomatic framework for a non-nuclear world. One hundred and eighty-three non-nuclear states belong to that Treaty and almost everyone believes what the Treaty says: that they should not have nuclear weapons and that no state should have nuclear weapons.

There is more good news. Over the past twenty years we've seen the virtual elimination of chemical and biological weapons that were part of the arsenals of major nations. Before these weapons were banned, few thought it possible. When I was on the staff of the Committee on Armed Services in the U.S. Congress in the late 1980s, one of the big debates was over the Army's plan to develop a new chemical weapon, the so-called "Big Eye Bomb," a binary bomb that would combine two chemical compounds in flight to form a deadly nerve gas on impact. The Army said it was absolutely essential for U.S. national security. If the U.S. did not have a response in kind to the chemical capability of the Warsaw Pact, soldiers would die. The argument split

Congress in half. In 1991, President George H.W. Bush ended the debate by saying no one should have chemical weapons. He started the negotiations on the Chemical Weapons Convention. The Convention is now signed by 182 nations. These weapons, built during the Cold War, are being destroyed. We are down to a handful of countries that may have some chemical weapons, mostly in the Middle East. This remarkable turnaround mirrors the success of the Biological Weapons Convention, which does the same for bio-weapons. This treaty has been signed by 171 nations. Here, too, we are down to concerns about a few countries that may still be conducting some research on these weapons. We should keep this in mind when we hear talk of new nuclear weapons and of their urgent necessity, their vital role to provide for a nation's security.

Finally, the threat of ballistic missiles continues to decline. There are fewer missile programs in fewer nations than 15 years ago. There are currently 20 nations that have ballistic missiles; however, almost all of these states have only short-range missiles (under 1,000 – kilometre range) that threaten their neighbours but no one else. The countries that are still pursuing mid-range ballistic missiles programs are less technologically advanced and less financially capable than those that had such programs 15 years ago.

I am optimistic that we can solve the problems we still have confronting us. The main obstacle to doing so, however, comes not from without, but from within. In my view, the main obstacle to making progress on solutions to these threats is U.S. national security policy.

When the Bush administration took office six years ago they did not see the "glass half full." They did not see the progress that I have documented here. They mistrusted the international regimes and international treaties, mocked them as "pieces of paper" providing "the illusion of security." They said they were making a radical break from past theories, particularly from the non-proliferation strategy of their predecessors. And they did. They replaced reliance on multi-national agencies and authorities with an American-centric approach that gave U.S. military force the lead role in their coalitions of the willing. They have had six years with practically unlimited budgets, with a compliant Congress and the support of the American people to implement their strategy. We are now in a position to judge how well that strategy has done.

It has been a miserable failure. It has left behind a dismal record. Almost every proliferation threat the Bush administration inherited six years ago has grown worse under this strategy. The key part of that strategy was the use of military forces to solve the proliferation problem. The war in Iraq was a war against "WMD." It was supposed to end the threat. Instead of relying on treaties that would eliminate weapons, senior administration officials promised that direct action would eliminate certain regimes that had those weapons.

This strategy was never supposed to end with the Iraq war. The talk in Washington four years ago was of rolling on from Baghdad to sweep through Damascus, Tehran, and even the Pyongyang. When then Undersecretary of State John Bolton was asked: "What lessons should Iran and North Korea draw from the Iraq war?" He said: "Take a number!" Well, Iran and North Korea got the message — they accelerated their programs. They made more progress in the last five years in their nuclear programs than they made in the previous ten. It's time to reverse that strategy to replace it with a new one.

I will close with three basic points that should form the core of a new strategy.

The first is to focus our greatest efforts on the greatest threat. If we agree (and I think that most experts do) that nuclear terrorism is the greatest danger of the actual use of a nuclear weapon, then we have to make it our number one threat or number one security priority. We have to accelerate the programs proven to be effective in eliminating and securing the materials terrorists can use to make a nuclear weapon. The United States should, at a minimum, triple the funding provided for these programs, from \$1 billion per year to \$3 billion per year. Other countries should follow with increases of their own. The U.S. president should appoint a high level official — I would favour a deputy national security advisor — to oversee the virtual elimination of nuclear terrorism in the first four years of the new administration. This is a doable task. As my colleague from Harvard University, Graham Allison, says, "Nuclear terrorism is the ultimate preventable catastrophe."

Second, I would clean our own nuclear house. I believe the United States should take the lead in negotiating with Russia new agreements which would accelerate drastically the reduction of both countries' nuclear arsenals. We can quickly reduce our existing nuclear arsenals from the almost 10,000 hydrogen

bombs we currently have to the low hundreds without any decrease in U.S. national security — and saving money for other, more urgent conventional military needs. Through mutual, balanced and verifiable reductions we would in one stroke restore U.S. credibility and legitimacy, at least in this field.

The United States should also quickly move to ratify the nuclear test ban treaty, begin negotiation to completely eliminate tactical nuclear weapons, and certainly guarantee that they are stored only within national boundaries. These and other steps the administration should follow are detailed by Secretary Bill Perry and his colleagues, Henry Kissinger, George Shultz and Sam Nunn, in their important January 4, 2007 article in the Wall Street Journal.

Third, these actions on nuclear disarmament will set the stage for major reconfiguration of the Non-Proliferation Treaty regime. To begin this process, the five nuclear-weapon states recognized by the Non-Proliferation Treaty should convene a conference in 2009 to coordinate steps for reductions in U.S. and Russian arsenals and extension of those reductions to the other nuclear-weapon states. The conference could also forge agreement on steps that all the countries could take to secure, reduce and devalue their own nuclear arsenals. With that in place, we would have a running start to the 2010 Non-Proliferation Treaty Review Conference, where we could work out a package of measures to strengthen the entire non-proliferation regime, toughen the rules and help make proliferation irreversible. Many of these measures were discussed at the 2005 conference, but it proved impossible to get agreement on their adoption. Demonstrated progress on disarmament would dramatically change that dynamic.

All these steps are practical, all are feasible, and it is not too late to take them. There is nothing inevitable about the spread of proliferation, but it requires wiser and more committed leadership than we have had for the part few years.

The Threat of Nuclear Terrorism

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1. The acquisition by terrorists of the capability to manufacture nuclear explosive devices will put the very survival of our civilization at risk. The first major demonstration of this capability — presumably the destruction of a city via a Hiroshima-type device manufactured and exploded in situ — will be a catastrophe surpassing by orders of magnitude any previous deed performed by terrorists. The possibility of repetitions of such events will render the preservation of open societies unlikely. Indeed, this preservation will no longer be prized by scared majorities in democratic societies where majorities are properly counted and influence political decisions.

It is therefore important to understand the nature of this threat and identify effective countermeasures, both immediate and longer-term for significantly decreasing the probability that it will occur (and hopefully to eventually exclude this possibility altogether), as well as the kind of initiatives that are instead likely to absorb a lot of resources and give only marginal effects.

2. Terrorist acts exploiting nuclear physics can take several forms that differ both as regards their likely effects (from the point of view of their potential victims) and the difficulty of their realization (from the point of view of their eventual perpetrators). In terms of their effects, they range from the deliberate radioactive contamination of inhabited environments to the destruction of a major city by a nuclear explosion.

The radioactive contamination, on a significant scale, of inhabited environments is likely to cause widespread panic and to have a major economic impact, but it is unlikely to cause many, or possibly even any, short-term deaths and few if any longer-term deaths traceable to this cause.

The destruction of a major city by a nuclear explosion is likely to cause many — hundreds of thousands, conceivably even millions — of immediate and short-term deaths (the latter after unpleasant agonies possibly lasting several weeks).

Remarkably, there has been an initial tendency to focus more on the first type of event — the so-called use of a “dirty nuclear bomb,” or equivalently of a “radioactive dispersal device,” by terrorists — as a credible threat, rather than the second type of event (the realization by terrorists of a nuclear explosion). This is especially true of the early writings on these topics by experts who have a background in political science rather than nuclear physics. This was caused by the widespread notion that the first task (realizing a radioactive dispersal device) is much more easily realizable by terrorists than the second (causing a nuclear explosion in a city), as well as by the idea that the second task is so difficult that its achievement by terrorists is sufficiently unlikely to make this threat somewhat negligible. It is now understood — I believe, essentially by every serious student of these matters — that these notions are incorrect.

3. The terrorist task of causing a major disruption via a radioactive dispersal device is far from easy, mainly because of the difficulty of acquiring a sufficiently large quantity of radioactive material and engineering its widespread dispersion (without dying before realizing this task), unless the widespread dispersion of radioactivity is achieved by blowing up a nuclear power station or by sabotaging it so effectively as to cause it to blow itself up. Both these latter tasks are also difficult; and the countermeasures to

prevent them are obvious: increase the physical security of nuclear power plants as much as possible, including appropriate screening of personnel with access to these installations. This also applies to any nuclear installation, including research reactors (including those in open environments such as universities), even though the amount of radioactivity the latter might store is generally one or more orders of magnitudes smaller than in the case of nuclear power plants.

For these reasons I will not discuss these possibilities any further.

4. In my opinion, it is more appropriate to focus on the feasibility of terrorists destroying a city by nuclear explosion and on the measures to be taken to lessen this threat.

There are two ways a terrorist commando can reach such a goal. One is to get hold of a nuclear weapon, stealing it by stealth or violence from an existing nuclear arsenal, and then deliver it to the target city using some convenient delivery vehicle (missile, aircraft, ship, truck...), via a paramilitary open action or a clandestine operation, and explode it there. The other is to manufacture a nuclear explosive device with the specific purpose of destroying a specific city. Let us discuss these two options separately.

5. Before doing so, let me interject a remark. In the recent past, which now looks remote, conventional wisdom suggested that terrorists with political goals would never resort to such extreme measures as destroying cities, thereby causing enormous numbers of casualties, because such actions would be incompatible with their political objectives, ultimately aimed at gaining the support of public opinion. This kind of wishful thinking is outmoded today, presumably for good reason. Indeed, well informed individuals assert that the terrorist nuclear threat is to be reckoned with: see for instance the recent (4/28/2007) article by Julian E. Barnes in the *Los Angeles Times* ("Nuclear Bomb Is The Biggest Al Qaeda Threat, Ex-CIA Chief Writes") reviewing the recent book ("At the Center of the Storm") by former CIA Director George J. Tenet.

6. It is reasonable to assume that stealing or commandeering a nu-

clear weapon from a nuclear arsenal is quite difficult unless there is substantial help from one or more insiders, even when such help is available. Moreover, many nuclear weapons are protected by technological devices — Permissive Action Links (PALs) — excluding their unauthorized use.

In this context, a more significant risk is presumably associated with the quantity — unreasonably large by any reasonable assessment — of tactical nuclear weapons, many of which are still unprotected by PALs, still in the arsenals of Russia and the U.S.

A more substantial risk is presumably associated with nuclear-weapon environments harbouring influential individuals possibly sympathetic to terrorist groups. In this context, the nuclear arsenal of Pakistan is a matter of primary concern, and to some extent that of India also. The nuclear arsenals of Russia, Israel, the U.S., China, France and the United Kingdom are also a source of concern. There are crazies everywhere, perhaps a higher than normal proportion among people who are professionally trained to believe that nuclear weapons are usable...

Yet my overall guess, not being an expert on these intelligence and psychiatric matters, is that this danger is relatively minor in terms of the likelihood that it could materialize soon, although of course not in terms of its potential consequences. In any case, the steps that must be taken to reduce such risk are rather obvious and do not need to be elaborated: increase as much as possible the physical security of all nuclear weapons, minimize the chance that unreliable individuals will have access to them, and keep seriously in mind that, in the long term, only the elimination of nuclear weapons will insure against their use, including their use by terrorists. Presumably most reasonable individuals agree on this menu. Perhaps a less universally accepted notion, which in my opinion also deserves to be emphasized in this context, is that inasmuch as the prevention of nuclear terrorism is a common interest, efforts should be made to cooperate in this field, overcoming the tendency of the nuclear bureaucracies in each of the countries possessing nuclear weapons to avoid outside interventions, even if they are meant (and indeed have the potential) to increase the physical security of these weapons. However, it is also important that this be done

without weakening the NPT by violating its norms forbidding the five nuclear-weapon countries to collaborate in nuclear-weapon matters with non-nuclear-weapon countries, as defined by the NPT. Indeed, given the size of the U.S. and Russian arsenals and the current political condition, the recommendation I consider most cogent in this context is that the political authorities in these two countries recognize the need to cooperate as much as possible to enhance the physical security of their nuclear weaponry against any prospect of diversions by terrorists — presumably on a largely reciprocal basis, which is the only politically viable framework — being most sceptical, and overruling when necessary their nuclear-weapon bureaucracies, who will tend to assure them that no risks exist (concerning their own arsenals) and that cooperation in this respect with the “other side” is impossible for security reasons. Some progress in this direction has been achieved in the past; more is desirable.

7. When assessing the threat of a city being destroyed by a nuclear explosive device manufactured by terrorists, it makes sense to focus primarily on the technologically easiest route to achieve this goal — a route that is sufficiently obvious for anybody having a degree of scientific/technological competence to guarantee that such unclassified discussion shall not provide any significant hints to prospective perpetrators.

From a technological point of view, manufacturing a primitive nuclear explosive device of a “Hiroshima-type” is a fairly easy task, given the availability of a sufficient quantity of weapons-grade Highly Enriched Uranium (HEU). To arrive at this conclusion, now having the character of a universally accepted scientific/technological truism, it must be kept in mind that there is a substantial difference between the task of manufacturing a nuclear weapon in the context of a military program and that of manufacturing a nuclear explosive device by terrorists.

A nuclear weapon must be transportable, indeed mated to a delivery vehicle, and therefore reasonably compact and guaranteed to function even after being subjected to all the accelerations likely to occur before it reaches its target; it should be reliable (namely, it should be reasonably certain that its eventual explosion will indeed yield an energy release at least in the kiloton range: the Hiroshima bomb had a yield of about 13 kilotons, equiva-

lent to the energy released by 13 million kilograms of high explosives such as TNT); all the personnel working on its production and handling it should suffer no significant radioactive contamination; throughout its manufacture the risk of accidents should be essentially excluded; and, once completed, the nuclear weapon should be certified to be safe, i.e. guaranteed not to explode under any circumstances (including an array of conceivable accidents) unless it is deliberately triggered by someone ordered to do so by the appropriate constitutional authority (advanced nuclear weapons are equipped with PAL devices that impede their unauthorized explosion). Moreover, no military nuclear-weapon program can be limited to producing a single bomb: it must aim at producing some kind of arsenal, however minimal, complemented by reasonably effective delivery means.

A nuclear-explosive device manufactured by a terrorist cell need not be transportable: it will be assembled in a rented locale (a garage, an apartment) in the target city. This substantially simplifies the task to manufacture it. It will be unreliable, meaning that its eventual yield will be essentially unpredictable, although the probability is likely to be high that it will reach a fraction of a kiloton (that is, an energy yield equivalent to that produced by the explosion of some hundred thousands kilograms of TNT — plus, of course, the associated release of radioactivity), or even the kiloton range. The terrorists manufacturing it will not care about the risks they are taking (but in any case the radiation contamination they will face is quite marginal, even if no special precautions are taken). Of course, the project will not be complicated by any requirement that the weapon be safe. Lastly, manufacturing one such device will be enough for their purposes.

Nuclear physics guarantees that if a sufficiently large quantity of fissile material is assembled sufficiently quickly, a nuclear explosion follows. As it happens, this implies that a small sub-national commando — provided it acquires a sufficient quantity of HEU (weapons grade, i.e. uncontaminated and containing, say, at least 90% U – 235) — will quite likely be able to manufacture a primitive nuclear explosive device, itself quite likely to destroy a large part of a large city, promptly killing very many people, leaving in its wake many more who will suffer for days, weeks or months before dying, and causing immense economic damage. Let us reiterate that to reach

this conclusion, one must realize that a primitive nuclear explosive device is much easier to manufacture than a nuclear weapon produced for employment in a military context by a State. The terrorists' nuclear explosive device need not be transportable nor sturdy (most likely, it will be clandestinely manufactured in a kind of experimental setup on a bench or a vertical arrangement in a rented locale in the target city), and it need not be reliable (most likely, its yield will be unpredictable a priori, but with a significant probability to be of the order of that of the Hiroshima bomb). It need not have any security/safety gadgets (but given the low radioactivity of Uranium, it can be manufactured without significant health risks), and it will be presumably exploded via a timer allowing ample time for an easy getaway. The ease of manufacturing such a device is implied by the fact that a nuclear explosion is produced whenever a supercritical mass of HEU is assembled in a time of the order of, say, a millisecond, possibly with a tamper around it in order to somewhat reduce the critical mass and facilitate the supercritical mass remaining assembled for a sufficiently long time to guarantee that a cosmic ray neutron or an internally produced neutron start the chain reaction. Incidentally, this implies that there is no need of a neutron source to initiate the chain reaction, although the realization of such a source is not too difficult and its presence would be likely to increase the yield of the device. For instance, I understand that no neutron source was featured by the six HEU nuclear weapons manufactured by South Africa using the gun-type configuration, and no doubt was ever expressed that they would work. Nor was the neutron source indispensable, although it was present, for the initiation of the chain reaction in the Hiroshima bomb ¹).

All the additional materials besides HEU needed to manufacture such a device are easily available on the open market (except possibly for some conventional explosives, easily available on the black market if they are indeed needed; and perhaps for some natural Uranium — also easily available on the black market, likely to be preferred by terrorists to minimize the risk of identification — which, although not necessary, might be used as tamper, thereby increasing significantly the energy and radioactive yield of

1 Richard L. Garwin and Georges Charpak, *Megawatts and Megatons: The Future of Nuclear Power and Nuclear Weapons*, Alfred A. Knopf, 2002, p. 350.

the device). No previous expertise in the manufacture of nuclear weapons is needed, although it would of course facilitate the task, nor any knowledge of nuclear or material sciences beyond what an intelligent bricoleur may easily get from open literature available in books and via the internet. This explains why this task can presumably be performed by a small commando of individuals who need not muster any exceptional skills. Conceivably even a single individual could carry it off. While this is not the place to go into additional details, I invite any one of you who doubts that what I have written here is scientifically/technologically sound to consult experts on the manufacture of nuclear weapons. Make sure that you pose the right question, namely not the difficulty of building a nuclear weapon, but the difficulty of manufacturing a nuclear explosive device of the type likely to be realized by terrorists in order to destroy a city. And ask your expert witness to refrain from replying before making the intellectual effort of adopting the vantage point of a possibly quite small team of bricoleurs that is possibly made up of quite clever and rather well funded individuals. Or I invite those of you who are sceptical to read the literature referred to below. Let me just quote here a sentence from a paper entitled "The technical opportunities for a sub-national group to acquire nuclear weapons," written by a former director of the Sandia Laboratory in the United States, where U.S. nuclear weapons are manufactured: "While not entirely straightforward, designing and fabricating a nuclear explosive device of the type described here is unlikely to confront a sub-national group with insurmountable difficulties."²

And I should add that in his paper this author is actually discussing a somewhat more reliable nuclear explosive device than the gadget I mentioned above as being one the yield of which would be unpredictable a priori, but with a significant probability to be in the kiloton or multi-kiloton range (let us again recall that the yield of the Hiroshima bomb was about 13 kilotons, produced by the fission of about one kilogram of HEU).

2 A. Narath, "The technical opportunities for a sub-national group to acquire nuclear weapons", in: Proceedings of the XIV International Amaldi Conference on Problems of Global Security, Certosa di Pontignano near Sienna, April 2002; *Atti dei Convegni Lincei* 190, Accademia Nazionale dei Lincei, Roma, 2003, pp. 19–32.

8. Fortunately, there is a barrier to be overcome before a sub-national terrorist group can acquire the capability to destroy a large part of a major city via a nuclear explosion, namely the difficulty of obtaining the required quantity of HEU. This explains why no such nuclear catastrophe has happened yet. But in my opinion, complacency is unwise. I have become convinced, after having given several talks and written several papers on this topic over the last few years,³ that with respect to the likelihood of a catastrophe of a new type, scepticism is so widespread that the threat of a nuclear explosion in a city caused by a sub-national commando is unlikely to be taken seriously enough until a catastrophe actually happens. Indeed, the main rejoinder I hear from individuals downplaying this risk is: if you say it is so easy, why hasn't it happened yet?

Let me repeat: I believe the reason why it has not happened yet is that it is difficult for a sub-national group to get hold of the sufficient quantity of weapons-grade uncontaminated HEU. I do not pretend to be able to provide any reliable expertise on this aspect of the problem, which has to do mainly with intelligence. But it seems to me the following facts motivate serious concern.

One hundred kilograms of weapons-grade HEU is more than enough to manufacture a primitive nuclear explosive device. Once this amount of HEU is acquired by a terrorist commando, smuggling it anywhere is a trivial

3 F. Calogero, Secretary-General's Report 1997, Pugwash Newsletter, November 1997, pp. 230-239; also in *Proceedings of the Forty-Seventh Pugwash Conference on Science and World Affairs* (Lillehammer, Norway; 1-7 August, 1997), edited by Joseph Rotblat, World Scientific, pp. 121-133; F. Calogero, "Fast-track the uranium deal", *Bulletin on the Atomic Scientists*, November/December 1997, pp. 20-21; reply to letter, *Bulletin on the Atomic Scientists*, January/February 1998, p. 66; F. Calogero and G. Tenaglia, "The risk of Highly Enriched Uranium (HEU) for terrorism", paper presented at the 1999 Annual Pugwash Conference (Rustenburg, South Africa; 8-13 September, 1999) and at the 1999 Amaldi Conference (Mainz, Germany, 6-10 October, 1999); F. Calogero, "The paths to prohibition of nuclear weapons", *Proceedings of the XIII International Amaldi Conference on Problems of Global Security*, Roma, 30 November - 2 December, 2000, *Atti Convegni Lincei* 167, 205-231 (2001); F. Calogero, "Issues on Arms Control", *Notes of 5 Lectures at CERN*, 12-16 February, 2001; available on the web, see the CERN website; F. Calogero, "Nuclear Terrorism", *Proceedings of the Nobel Peace Prize Centennial Symposium*, Oslo, December 6-8, 2001; available at: <http://www.learnworld.com/COURSES/P190B/ClassroomUse/Francesco.Calogero.pdf>; F. Calogero, "Nuclear terrorism", letter in *Bulletin on the Atomic Scientists*, May/June 2002, p. 5; J. Boutwell, F. Calogero and J. Harris, "Nuclear terrorism: the risk of highly enriched uranium (HEU)", "Pugwash Issue Brief", September 2002, available on the Pugwash website: www.pugwash.org; F. Calogero, "Memo on nuclear terrorism", proffered paper, Amaldi Conference 2002, Pontignano near Siena, Italy, April 27-29, 2002; F. Calogero, "Nuclear terrorism", contribution to the book in honour of Adam Daniel Rotfeld's 65th birthday; F. Calogero, "Nuclear terrorism: likely scenarios, preventive actions", proffered paper, Pugwash Annual Conference, Halifax, Canada, July 2003; F. Calogero, "The risk of nuclear terrorism", in: *Unilateral actions and military interventions: the future of non-proliferation*, *Proceedings of the 10th International Castiglione Conference*, 18-21 September, 2003; *Servizio Editoriale Universitario*, University of Bari, 2003; F. Calogero, "Nuclear Terrorism", published in Russian as an entry in the *International Encyclopedic Dictionary of Global Studies*; F. Calogero, "The risk of nuclear terrorism and how to decrease it", *Law Enforcement Executive Forum* 5 (6), 1-6, 2005.

task, facilitated by its small volume (less than ten litres) and marginal radioactive signature.

I do not believe that HEU can be manufactured by a terrorist commando; indeed, few States have the capability of producing it. I also discount the likelihood that any state will provide a terrorist group with a large enough quantity of such material, although I do not want to be overly optimistic in this respect. But the amount of HEU that is more than sufficient to manufacture a primitive nuclear explosive device (less than one hundred kilograms) must be compared with the existing stocks of this material, which in Russia alone presumably still exceed one million kilograms, probably still dispersed over many (more than one hundred?!) sites — of which half a million kilograms have been declared by Russia as excess material with respect to national military needs. And the uncertainties about the precise quantities of this material that have been produced — the so-called Material Unaccounted For (MUF) — are generally quite significant (as much as one per cent or even more).

These figures speak for themselves. They clearly entail that there should be a determined effort focused on guaranteeing the security of this material against any diversion, and also focused on eliminating as much of it as possible as quickly as possible.

While Russia is the country with the largest stock of HEU, by no means do these considerations apply to Russia alone. The second largest stock is in the United States.

Some steps to improve the accounting and physical security of this material have been taken, mainly in the context of cooperative activities between the United States and Russia (and some of the other New Independent States formed after the disappearance of the Soviet Union), mainly funded by the United States under the Nunn-Lugar legislation; however, many experts believe that the steps already taken and those currently being taken are much less than sufficient⁴.

Some progress has also been made in eliminating HEU: indeed, the oversized stocks of HEU left over in Russia and the U.S. after the end of

⁴ See recent papers and books by such authors as Matt Bunn, Richard Garwin, John Holdren, Bill Potter, Frank von Hippel, Anthony Weir, generally available on the web, and the literature quoted there.

the Cold War make the elimination of large quantities of it — hundreds of tons — insignificant from a military or strategic point of view (except as regards the risk of its use by terrorists!); while the down-blending transformation of HEU into LEU (Low Enriched Uranium) containing, say, 3-5% U-235, which is the standard fuel for most commercial nuclear reactors, can be performed easily and cheaply. LEU cannot be used to manufacture nuclear explosive devices, and transforming LEU back to HEU is a task beyond the capabilities of most States, let alone a terrorist group. The most important development of this kind is the so-called "HEU Deal" reached at the beginning of the 1990s to regulate Russia's down-blending of 500 tons (half a million kilograms) of HEU to LEU and its subsequent sale to American utilities via the United States Enrichment Corporation (USEC), for a total payment to Russia that is now estimated to amount altogether to \$7.6 billion (by the end of 2013; as of the end of 2006, \$4.6 billion has already been paid). Unfortunately, mainly for commercial reasons (to support the market price of LEU), this deal has been spread over a long time period (20 years!), hardly consistently with proper appreciation of the danger entailed by the prospects of nuclear terrorism based on the availability of HEU. Moreover, again for commercial reasons, this program has suffered various delays. So far it has eliminated via down-blending about 300 tons of HEU, or 60% of the material covered by the deal (an overall quantity estimated by USEC to correspond to the elimination of twenty thousand nuclear warheads: hence the quantity of HEU eliminated so far is advertised by USEC as essentially eliminating the potential to manufacture 12,000 nuclear warheads). The program seems to be proceeding now at a steady rate entailing the elimination of 30 tons of HEU per year. The program should be completed by 2013. (For additional details see the "Megatons to Megawatts" section on the USEC web site: <http://www.usec.com>). This is a positive result, although much more could and should be done, indeed a faster rate of elimination (for instance, by a factor of five) would have been and would still be, in my opinion, feasible — certainly in terms of the technology and possibly in terms of Russian willingness (although the likelihood of this is steadily decreasing) — provided adequate funds were available to support an acceleration of the elimination of the 500 tons of HEU declared excess by Russia. An

extension of the project to eliminate additional quantities of Russian HEU can also be envisaged, perhaps via a different sort of financial arrangement (for instance, via an advance payment in the guise of a no-interest loan of, say, several USD for every gram of HEU quickly down-blended to, say, less than 20% U-235 (enough to exclude its use to manufacture a nuclear explosive device), to be repaid if and when the LEU is further down-blended to the precise specification required for employment as reactor fuel and sold to electrical utilities). Unfortunately, and in my opinion unwisely, the U.S. and other affluent countries do not seem to address this issue with the commitment implied by the stakes involved and by the lip service paid to the risk of nuclear terrorism. One example is the meeting of the G8 group of nations (or G7 + 1: Canada, France, Germany, Italy, Japan, UK, USA + Russia) held at Kananaskis in June 2002, where the formula 10 + 10/10 (ten plus ten over ten) was advertised, meaning an agreement "in principle" to devote \$10 billion by the USA, plus \$10 billion by the other countries, over the next 10 years to promote various developments meant to alleviate the risk of the use by terrorists of means of mass destruction. But few of these commitments have been implemented up to now.

Several years ago a study came out advocating faster progress in the elimination of HEU and suggesting political and financial arrangements to this end. It originated in the Pugwash context, and it was eventually commissioned by the Swedish government and performed by an international expert panel. The study is available on the web⁵. The Swedish government was expected to take it up and promote it in the international, and especially in the European, context; but for various reasons (possibly including the upheaval caused by the assassination of the Swedish Foreign Minister), to the best of my knowledge not much progress has been achieved so far. The main idea of this study is to offer financial incentives to Russia (and possibly to other countries of the former Soviet Union; but most of the HEU is in Russia) in order to promote additional elimination of HEU besides that already agreed

5 G. Arbman, F. Calogero, Paolo Cotta-Ramusino, Lars van Dassen, M. Martellini, M. Bremer Maerli, A. Nikitin, J. Prawitz, L. Wredberg, "Eliminating Stockpiles of Highly Enriched Uranium: Options for an Action Agenda in Co-operation with the Russian Federation", Report submitted to the Swedish Ministry for Foreign Affairs, SKI Report 2004: 15, ISSN 1104-1374, available on www.ski.se; also see the Pugwash Issue Brief by L. van Dassen and M. Bremer Maerli available on the Pugwash website (www.pugwash.com).

with the U.S. Unfortunately, recent developments have made the prospects that this will be acceptable to Russia less likely than it was years ago.

9. Over 60 tons of U.S. HEU have also been eliminated (down-blended to LEU), via two contracts between the U.S. Department of Energy (DOE) and USEC, whose implementation was completed in September 2006. For the moment it does not appear that the U.S. government has any intention of proceeding with the elimination of any more U.S. HEU, although the quantities still stocked are quite large (hundreds of tons) and no military needs (for nuclear weapon production) of this material are envisaged, other than extremely large stocks of HEU that are earmarked as fuel for U.S. nuclear submarines (quantities sufficient into the very distant future).

10. Looking ahead, it seems evident that the main focus of activity directed at decreasing the risk that a city will be destroyed by a terrorist nuclear explosion should be on preventing any such group from obtaining a sufficient quantity of weapons-grade HEU – in addition to infiltrating and eliminating terrorist organizations (a topic on which I am not knowledgeable).

Obviously, the most effective step to this end is to eliminate as much of the existing HEU as possible by down-blending it to LEU as quickly as possible. A very useful endeavour that has had some successes has consisted in spotting various relatively small but far from insignificant stocks of “left-over” HEU existing in various parts of the world (especially in the former Soviet Union) and eliminating them after providing adequate compensation to their owners. The ultimate goal should be the total elimination of all existing HEU and a global verified ban on its production. This material constitutes a threat to the survival of our civilization, which is incompatible with the possibility that a group of a few individuals, possibly even a single person, may be able to muster the technological capability to destroy a city. At present no HEU is being produced in the five nuclear-weapon countries (but without any international verification: hence I am not so sure about China). It is still produced in Pakistan and probably also in India (presumably not in Israel). But unfortunately, the technological capability to enrich Uranium is becoming widely available. This capability is necessary

to produce LEU (enriched to 3-5%, the basic fuel for most energy-producing nuclear plants), and its acquisition can be justified on this basis. But the same technology is just as capable of producing HEU. It is possible to make sure that this does not happen, and the IAEA is capable of doing, but this requires the willingness by those enriching Uranium to accept rather intrusive verifications (to which almost all countries are in any case committed by the NPT) — a willingness that might be cancelled at any time. It is theoretically possible to imagine a future when nuclear energy is largely used, including installations (preferably only internationally run) enriching natural Uranium to LEU, but without the existence of HEU; however this will require a more universally cooperative international climate than prevails today.

11. An intermediate, second-best goal as long as HEU exists is to make sure that it does not fall into the wrong hands. To this end, the physical security of the existing stocks of HEU should be enhanced as much as possible and every international cooperative effort in this direction should be welcomed and adequately funded. But it should be kept in mind that investments in this direction are less preferable than those aiming at eliminating HEU altogether, which are of course more effective and also turn out to be less costly in the long run, even if they require a bigger immediate down-payment, since they do not require subsequent funding extending over an indefinite period of time (building fences around HEU deposits is useless unless adequate personnel is trained and paid to monitor them).

My hunch is that adequate investments in intelligence are also important to make it difficult for insiders — who might be motivated by greed to steal HEU — to contact eventual buyers without being caught; but this is not my cup of tea...

12. Another important strand of initiatives — essential in the context of the eventual worldwide elimination of HEU, but also important immediately in order to decrease the chances that sizable quantities of it will fall into the wrong hands — is aimed at phasing out the use of HEU from non-weapons activities worldwide, in particular from all research reactors and from all reactors used

for naval propulsion (icebreakers and submarines). The technological development underlying this move is to promote the use of much more compact forms of LEU, unsuitable for explosive employments but capable of replacing the HEU employed in many research reactors and most naval reactors. Much useful work in this direction has been done and is currently pursued by Professor Frank von Hippel of Princeton University and by others. In my opinion, their work deserves much more enthusiastic support than is provided to other, much less useful, activities, such as those we will now mention.

13. It might appear reasonable to also invest in trying to prevent any terrorist group with a sufficient quantity of HEU from being able to transfer it to the target city and setting up shop in a locale there in order to build an explosive device, without being caught. As indicated above, my hunch is that a useful role in this context may be played by intelligence. The attempt to impede the transfer of HEU via a major investment introducing all kinds of "impenetrable" border barriers looks like a costly exercise in futility, or perhaps a Keynesian investment in providing useless employment to a lot of people. A terrorist team incapable of clandestinely introducing one hundred kilograms (say, in the guise of ten half-litre containers) into any city would demonstrate such incompetence that the chance of their subsequently being able to manufacture a working nuclear explosive device seems moot. And countermeasures that are only effective against incompetent perpetrators are rather futile.

The difficulty, indeed the impossibility, of impeding the introduction into any country of such a small quantity of material, which has a negligible radioactive signature, as the quantity of HEU sufficient to destroy a city, is evidenced by the enormous quantities of all sort of materials smuggled clandestinely into every major country of the world, including drugs, forged goods and other forbidden items. For a more specific analysis, the sceptical reader is advised to review the article "Can the United States be made safe from nuclear terrorism?" by Steve Coll in the March 12, 2007 issue of *The New Yorker*.

14. Instead of focusing on eliminating HEU, much attention has been devoted to the elimination of plutonium, the only other material suitable for the

construction of a nuclear explosive device. This is due to certain industrial and commercial interests (especially in Europe) which stand to gain from investments made in this area rather than from the elimination of HEU, and also because this problem is technically more challenging (hence intellectually more interesting) than the elimination of HEU. This misplaced focus is unfortunate, not only because there is now more HEU around than plutonium, but especially because it is so much more difficult to build a nuclear explosive device with plutonium than with HEU that the likelihood of a plutonium device being manufactured by a sub-national terrorist commando is moot ("Most people seem unaware that if separated U-235 is at hand it's a trivial job to set off a nuclear explosion, whereas if only plutonium is available, making it explode is the most difficult technical job I know." Luis W. Alvarez, key physicist in the Manhattan project, and subsequently Nobel laureate in physics, in his memoirs published in 1987, one year before his death ⁶).

However, while the production of weapons-grade HEU by Russia and the U.S., the major former producers, is now stopped, the production of plutonium, although not necessarily its separation from spent and hence highly radioactive nuclear fuel, is an intrinsic by-product of the standard nuclear processes yielding (electrical) energy via nuclear power plants. Plutonium is an extremely dangerous source of radioactive contamination, provided it is widely diffused in finely particulate form (for maximal effectiveness the grains should be quite small: microns rather than millimeters). Our civilization faces and shall continue to face the need to tightly control this material due to its potential as raw material for nuclear weapons and possibly also for terrorist uses.

6 Luis W. Alvarez, "Adventures of a Physicist," New York, Basic Books, 1987, p. 125.



SESSION 2



Chairman –
Sergey OZNOBISHCHEV,
Ph.D.

Director of the Institute
for Strategic Assessments;
Professor of the MGIMO and
the Higher School of Economics
(Russia)

The Nuclear Crisis on Korean Peninsula

Yukiya AMANO

Ambassador Extraordinary and Plenipotentiary to the Permanent Mission of Japan at the International Organizations in Vienna (Japan)

I'd like to discuss a couple of issues: where we stand now, what was discussed at the NPT preparatory committee, and what is the Japanese position, which includes the so-called possibility of Japan "going nuclear".

First, North Korean nuclear issues are long-standing and remain unsolved. The international committee has repeatedly called on North Korea to take steps towards denuclearization, including the implementation of the joint statement of the six-party talks in September 2005. In the face of these demands North Korea announced that a nuclear test was conducted on October 9 last year. This announcement posed a serious threat to peace and security, also representing a critical challenge to the international nuclear non-proliferation regime. Japan, which held the presidency of the Security Council in October of that year, made serious efforts to ensure the prompt adoption of a Security Council resolution with all other countries concerned.

Security Council resolution 1718 was adopted unanimously on October 14, 2006. It condemned the announcement of the nuclear test carried out by North Korea and called on North Korea to abandon all nuclear weapons and existing nuclear programs to an extent that is complete, irreversible and verifiable. After this resolution was adopted, the six-party talks were resumed last

December. On February 13, 2007 the six parties agreed on the initial actions for the implementation of the joint statement. As a part of this agreement, North Korea committed itself to shutting down and sealing the Yongbyon nuclear facility with a view to its eventual abandonment, together with the pre-processing facility. North Korea also agreed to invite IAEA personnel back to conduct all necessary monitoring and verifications as agreed between the IAEA and North Korea. These initial actions should have been implemented within 60 days, but this deadline has since expired without North Korea having taken actions to implement its commitments.

The First Preparatory Committee for the 2010 Review Conference of the parties to the NPT was held from the 30th of April until 11th of May 2007 in Vienna. I served as a chairman of this Committee and I am pleased to briefly share with you the general sense of the meeting and its discussions. It was very encouraging that the party states reaffirmed the NPT as the cornerstone of the global nonproliferation regime and an essential foundation of the pursuit of nuclear disarmament. Preserving and strengthening the NPT is seen as vital to international peace and security and to ensuring that it can meet critical challenges.

Regarding North Korea, the party states to the NPT referred to the North Korea nuclear issues at the prep-con. They expressed great concern about North Korea's nuclear program and the announcement of a nuclear test in October 2006, which represents not only a clear threat to international security, but also a serious challenge to the nuclear nonproliferation regime. They urged North Korea to comply with Security Council resolutions 1695 and 1718 and the Joint Statement of September 2005 on abandoning all nuclear weapons and existing nuclear programs, as well as ballistic missile programs in a complete, verifiable and irreversible manner and returning promptly to compliance with obligations under the NPT and IAEA safeguards agreements. The party states stressed the importance of achieving the goal of the denuclearization of the Korean peninsula. They underlined the need for a peaceful solution to this issue and welcomed the diplomatic efforts undertaken within the framework of the six-party talks. The party states welcomed the agreement on initial actions last February and called upon the parties to implement the agreement peacefully and expeditiously. This is the outline of

the discussions on North Korea at the prep-con.

Now I turn to the Japanese position. Japan seeks to resolve the outstanding issues of concern between Japan and North Korea, including the abduction issue, nuclear issues and missile issues. Japan, thereby, aims to normalize relations in a manner conducive to building peace and stability in North-East Asia. One of the outcomes of Japan's bilateral approach is the Japan Pyongyang declaration. This declaration was drawn up as a result of then prime-minister Koizumi's visit to North Korea on September 17, 2002. In this declaration Japan and North Korea affirmed their compliance with all related international agreements for an overall resolution of nuclear issues on the Korean peninsula. Japan also committed itself to providing economic cooperation following the normalization of relations. Japan continues to actively participate in the six-party talks, the goal of which is to achieve a verifiable and peaceful denuclearization of Korean peninsula. Japan itself aims to normalize relations in a manner that will contribute to peace and stability in the region, and this is fully consistent with the goal of the six-party talks.

The basic stance of the Japanese government on North Korea is dialogue and pressure. Japan has been urging North Korea to faithfully implement the relevant Security Council resolutions. It is also important that North Korea acts strictly in accordance with its obligations under the NPT and that it returns to the IAEA safeguards agreement as soon as possible. Also, convinced of the necessity of applying such pressure, Japan firmly believes that the North Korean nuclear issue should be resolved peacefully through dialogue. And the six-party talks are the most realistic forum available for this at present.

The issue of abduction is another matter of crucial importance to Japan, as it concerns the lives and security of Japanese citizens. The United Nations General Assembly approved a resolution entitled "Situation on human rights in the Democratic People's Republic of Korea" last December. The abduction of Northern citizens from other countries is a clear violation of human rights and a matter of international concern. The resolution of this issue will lead, in turn, to strengthening political stability and security in the region and beyond. The international community should strengthen its coordinated efforts for resolving these issues, particularly in view of the humanitarian na-

ture of the problem and the positive impact its resolution would have on the security environment in the region and beyond. Japan, for its own part, will continue further efforts, based on the Japan-DPRK Pyongyang Declaration.

Despite the announcement of nuclear tests by North Korea, the development of nuclear weapons by Japan is very unrealistic and is not an option for many reasons. Japan has a national policy based on nuclear-free principles. This means not possessing, not producing and not admitting the introduction of nuclear weapons into Japan. Japan has committed to these principles at the highest political level and there is no change in this position. Japan will continue to uphold these principles. Japan is legally bound not to produce or acquire nuclear weapons. Japan ratified the NPT in 1976 and it is under an obligation to comply with this treaty as a non-nuclear weapon state. Japan's domestic law, called the Atomic Energy Basic law, requires that nuclear activities be conducted only for peaceful purposes. On a related note, let me remind you that last month the prime minister of Japan and the U.S. president once again reaffirmed the irreplaceable alliance which exists between our two countries and they agreed to further deepen and broaden this alliance into an unshakable one.

In conclusion I would like to reiterate that the six-party talks are the most realistic mechanism available at present for resolving the Korean peninsula nuclear issue. While the progress is slow, without doubt there are common interests among the parties to promote peace and stability in the region. These common interests constitute the driving force for the six-party talks. At the NPT's First Preparatory Committee the crucial importance of the NPT regime was reaffirmed. The team produced a working paper containing a factual summary that includes a clear determination on the part of the party states to solve North Korean and other issues. The NPT regime should play a significant role, in particular, in such critical issues as that of North Korea. The IAEA's role in verification should also be emphasized. The North Korean nuclear issue is one of the most evident cases. I hope that the IAEA's verification activities in North Korea will lead to an early denuclearization of the Korean peninsula.

Departing from my prepared paper, I would like to emphasize a couple of things. One is that I have been participating in the NPT review conference

process since 1995 and most participants agree that nuclear disarmament is the most important issue. However, often the way that we address the Middle East issue was decisive to the success of the whole process. That is one of the reasons I put lots of effort in preparing for the prep-con to include the reference to the 1995 resolution on the Middle East. Addressing the nuclear-weapon-free zone in the Middle East in a serious manner is vital for the success of the NPT and the NPT process and for maintaining confidence in it. Another thing that I would like to stress is that countries that are highly developed, prosperous and democratic have not gone nuclear. Countries like Japan and Germany have never had signs of going nuclear in the last 40-50 years. The problem is posed by countries that are isolated, feel uncertain about their security and have a medium level of development. They are the ones who try to block the nuclear non-proliferation process. We should appraise this reality and draw a lesson from our historical experience.



SESSION 3



Chairman –
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Professor

Principal researcher
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Major-General, ret. (Russia)

The Nuclear Crisis in the Middle East and Persian Gulf

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Iran has masterfully defined the public debate over its nuclear case so that in much of the media, in much of international discourse, this has become an issue about nuclear rights, specifically about Iran's nuclear right. The story has now been framed as a contest between the United States and Iran in which the United States is trying to deny Iran its nuclear right. The story then is informed by flashbacks — it is seen as a replay of the Iraq war, with again the United States as the aggressor as it was in Iraq, but now with the added twist that Bush is denying Iran its nuclear right. As we heard earlier this morning, a new layer is being added to the story, so that the Iranian case will also be seen as a problem of the lack of nuclear disarmament. Principally again this is portrayed as the fault of the United States, but to be fair you have to include Russia and China and others. Fair or not, lack of nuclear disarmament is becoming part of the story about why Iran is doing what it's doing. (People such as Director General ElBaradei make this disarmament connection even though Iran insists that it doesn't want nuclear weapons. If Iran does not want nuclear weapons, then its nuclear activities cannot be reasonably explained as an

attempt to balance the nuclear weapon capabilities of states that have failed to disarm. Indeed, it's very important that we not undermine Iran's insistence that they don't want nuclear weapons. We should say that it's precisely because Iran insists it does not want nuclear weapons that the IAEA and others are seeking clarification, transparency, and access to remove the ambiguities that cast doubt that Iran's nuclear program is entirely peaceful.)

I think a clear and more proper definition of the Iran story isn't the one I just tried to summarize. Rather, the correct story is that we're dealing here with a violation of the rules of the nuclear non – proliferation regime, most particularly and most clearly the violation of safeguards agreements by Iran, who is non-compliant with those obligations. The story is important also because of the nature of the major issues that have been unresolved by Iran in its verification procedure with the IAEA. There are major doubts about Iran's compliance with Article II of the NPT, the fundamental obligation of non-nuclear-weapon states to undertake nuclear activities that are solely for peaceful purposes. It seems to me that what's gotten lost by reporters and politicians is the focus on the outstanding issues that the IAEA continues to document very well and very clearly in its reports. There are five main unresolved issues, factual questions, pieces of evidence that the IAEA has found that Iran has not satisfactorily explained. You can do a quiz of probably 95 percent of the reporters who cover this and they can't tell you what those issues are, so masterfully has Iran defined the story.

It seems to me the other way to properly see this issue is that Iran is refusing to follow legally binding UN Security Council resolutions. Here's a question of dubious rights! Iran is acting as if a country can just have a right to shrug off the Security Council resolutions and say: "Well, we don't accept that one." But this has not been how the world media and politicians have defined the story. The story is that the United States is out trying to deny Iran its nuclear rights. I say this in no way defending the United States government over the last 7 years. But whatever the mistakes or unpleasant facets of the U.S. government, the Iranian case has been widely misperceived. In fact the Iranian government has been very lucky in the adversaries that it has and particularly in facing the Bush administration. The IAEA could have uncovered the same facts of Iran's non-compliance before the Bush Administration,

because almost all that activity occurred before the Bush administration. And I venture to say the handling of the case would have been much better and the narrative in which we see it would have been better if there had not been such a good adversary for Iran.

Another way in which this story is not about nuclear rights is, and this is forgotten in the public discussion and we didn't hear it here this morning either, is that the Security Council Resolution 1747 is very clear in extending nuclear rights explicitly to Iran, and in detailing the nuclear rights and going further and saying that the Security Council is committed to helping Iran expand its civilian nuclear program. But that, too, gets lost in the discussion. Moreover, Iran is marching forward with its enrichment program, despite the binding demand by the Security Council to temporarily suspend that activity. Iran still isn't answering the IAEA's questions and still not providing the transparency that the IAEA has requested and that the Security Council now demands. This is peculiar because Iran could choose to go ahead and continue the illegal enrichment activities, violate the legally binding demand of suspension, but still provide transparency in the access the agency is seeking. These two things — ongoing enrichment and answering the IAEA's outstanding questions — are not mutually exclusive. And yet somehow there is not an outcry about Iran's failure to provide transparency.

Now some suggest that Iran has mastered the enrichment process and can sustain it and therefore a deal should be made accepting this enrichment in order to limit its scale and somehow we would then end the crisis. But it seems to me that wouldn't end the crisis, it's a delusion. The ongoing questions that the agency has, that must be resolved to end this matter, still would not be answered if the world said now to Iran, "go ahead and keep enriching." There's no reason to suppose that allowing a limited-scale enrichment program would somehow then lead to transparency and the resolution of those outstanding issues. Iran's main strategist until late 2005, Hasan Rowhani, had made clear that in fact what Iran does is accept limitations on activities when it is having technical trouble with those activities and needs time to figure out how to overcome difficulties. Whenever they are ready to try a new activity, a new technique, they will do so, and break suspension or other agreements if necessary. There is no guarantee, no basis in our experience for believing

that even an arrangement about a limited-scale enrichment program would be the end of the crisis, and that we wouldn't return to this issue because when Iran would be technically ready to ramp up its program, it would break whatever deal was made now.

But beyond that, accepting that it's over and that Iran can enrich uranium doesn't address the problem that Iran is still not improving international confidence. It's in fact undermining international confidence in its intentions and in its policy. I can give you a couple of examples. It still continues to threaten the existence of at least one country in its region and not to recognize that country, Israel. I don't see how we can get to a zone free of weapons of mass destruction in any zone in the world where parties in that zone don't recognize each other's existence. It seems to me categorical — the demand for mutual recognition must be the first item that we discuss, but you don't hear much of that in discussions about a zone free of weapons of mass destruction. If you're going to negotiate verification there's going to have to be a table like this one, where placards for every country are going to be displayed. If some of those seats are empty and yet some of those states have programs in chemical, biological weapons or have nuclear programs, how are you going to make any progress toward a zone free of weapons of mass destruction? Iran has not contributed to that confidence-building. Moreover, I have to mention that a man many of us know, who was supposed to be at this conference, Hossein Mousavian, a former negotiator for the government of Iran, was detained by Iranian authorities last month. Now we'll see how the Iranian judicial system plays itself out, but assuming that one is innocent until proven guilty, it's hard to see how Iran builds confidence when it arrests somebody who is widely respected and has been an international participant in discussions about these issues. The same might go for the arrest of Haleh Esfandiari, a scholar from the Woodrow Wilson Center, a tiny grandmother, who is now in Evin prison. I can go on about these things, but they don't build confidence and I think because this is an academic gathering, it's worth pointing out and talking about some solidarity with our colleagues.

As long as Iran has not provided answers to resolve doubts that its nuclear program is entirely for peaceful purposes, and as long as there is ongoing enrichment without having established confidence in Iran's intentions, it seems

to me the only alternative is to increase the sanctions that Iran has faced. I have to be clear here: Russia has borne the brunt of the economic dislocation of sanction so far, so in going forward I think the United States, the EU and others have to have a very direct and explicit understanding about balancing and sharing the burden of sanctions going forward. That hasn't been done. It should also be clarified that no one is talking about an oil embargo or other forms of embargoing Iran's exports of fossil fuel. That would be self-defeating, it would be absurd, and no one serious is talking about it. When it does get mentioned, it's actually usually a way to deflect discussion from more serious measures.

Another reason why I think sanctions have to be increased is that people in Egypt, Turkey, and other states surrounding Iran are trying to calibrate their future nuclear programs and are looking at the price that one pays for enrichment, the price that one pays for potentially violating the commitments as a non-nuclear weapon state. This is one of the things that has been so problematic about the promiscuous United States—India deal. People around this table recognize that and talk about that and yet we don't extend the same concern that being promiscuous in letting Iran get away with defying Security Council and IAEA demands will destroy the non-proliferation regime. Persuading others to remain firm with Iran would be much easier if the United States could clarify that it is not thinking of going to war, this isn't a repeat of Iraq. The U.S. should make clear that military attacks are not going to solve this situation. I think this is actually the understanding in Washington, but the U.S. has done a terrible job of explaining it.

Iran does have genuine, legitimate interests, of course. This is very clear, but again our recognition of Iran's interests hasn't been well-told. Annex 2 of UN Security Council Resolution 1747 very explicitly and effectively recognizes a multitude of Iran's interests and commits the Security Council, not just the United States, not just the EU, but the Security Council to act on those interests and to work with Iran to fulfill those interests, be they political, economic, technical or nuclear. That should be part of the focus. We also need to do something that I don't think has been done and it's a strange omission to me. We need to clarify that if Iran does provide satisfactory explanations regarding the outstanding issues with the IAEA, that those explanations will

not then be used as justification for further sanctions through the Security Council or military attack or other reprisal. Right now, Iran would not have to be paranoid to be looking at the list of outstanding issues, the question about the P2 centrifuge design, the contamination at the university in Teheran, the metallic uranium spheres that haven't been explained. They wouldn't have to be paranoid and say, "Well, if we actually explain all this stuff and admit that entities related to the military or the Revolutionary Guards may have been involved in some things, if we explain that, if we come clean, then we're going to get hit." And so they feel better off not explaining it and hoping the issue goes away. Well, if the world wants this to be closed, if you want the issue to be resolved, then we have to be clear with Iran. What would happen if they were to finally provide the resolution that would allow this to be closed?

Another problem is that the Security Council Resolution doesn't contain an explicit enough security assurance. This should be corrected. Iran would not believe the United States' offer of security assurance anyway. But the Security Council commitment, which would bind the United States, would also be a commitment that the United States is making to Russia, China and others. It would be much stronger than a bilateral assurance.

There needs to be clear support for exploration of how you would verify a zone free of weapons of mass destruction in the Middle East. Let's not avoid the issue, let's not be defensive, let's get into that discussion and start with how you would verify it. This leads to the point I mentioned earlier: a necessary condition is recognizing each other's existence. Iran so far refuses to do that regarding Israel and other states refuse, too. We also should explore the conditions that would be needed to have a zone free of fuel cycle facilities as Mr. Blix has put forward. In any case, it seems to me we can't fulfill either the Middle East zone objective, nor can a nuclear state fulfill the obligation of total elimination of nuclear weapons, if any single nation is enriching uranium or separating plutonium. We have to move to a system of multinational management and control of all fuel cycle facilities. This is an issue that Director General ElBaradei is working on, and it's something we must address if we talk about eliminating nuclear arsenals. Well, if we know that, if it's likely to be a condition, then let's get on with it. This implicates the United States, it implicates France, it implicates Russia, it implicates India, it implicates Paki-

stan, Israel. All of these states that have fissile material production facilities under national control today: are they prepared to give those up, transform them, under what conditions? Well, let's have that discussion.

Finally, it seems to me that we can't eliminate nuclear weapons worldwide nor solve a regional problem if we don't enforce the rules we have. The case of Iran before us is the clearest case we'll ever get of violation of rules documented by an international agency, not by national intelligence services, not by the United States, but documented by the International Atomic Energy Agency. Then, after a laborious process of negotiations and offering incentives for cooperation, the process moves on as it should when it's not resolved at the IAEA level — it's sent to the Security Council. Then the Security Council laboriously tries to address it, first without sanctions, with needing confidence-building measures, then with gradual sanctions. Still, the state in question does not comply. What clearer case of a challenge to the international system of rules could we have? And so if nothing is done effectively to resolve that and to enforce those rules, how on earth can we talk about prohibition of nuclear weapons and enforcing that? And all the subsidiary rules and the steps you would have to take to eliminate nuclear arsenals and to assure everybody as they take those steps that if somebody cheats, there's going to be very effective and quick action to enforce those rules? How can we do that, if this really clear and obvious case basically gets washed away? So I pose that as the discussion.



SESSION 4



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The Nuclear Problem in Southern Asia

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The Outlook for Nuclear Stability in South Asia¹

Proliferation concerns are mounting for many reasons. The Iranian and North Korean nuclear programs, if not suspended or dismantled, are likely to deal heavy blows to the Nuclear Nonproliferation Treaty and accelerate hedging strategies by neighboring states that would further undermine the global nonproliferation system. This system was not designed to address proliferation generated by terrorist groups, entrepreneurial agents, and middlemen. Adaptive and corrective steps have begun, but there is much work to do. Proliferation driven by perceived security imperatives is hard enough to stop and reverse; when security imperatives are conjoined with religious zeal, proliferation problems become even harder and more consequential.

When proliferation concerns are mounting on many fronts, progress toward nuclear stabilization in any part of the world is doubly welcome — especially when that progress occurs in a region that has had a history of severe crises and wars animated by disputes over religion, sovereignty, ter-

¹ This report was prepared with Alex Stolar as a co-author.

ritory, and inheritance. Over the past three years, India and Pakistan have made significant progress toward a peaceful settlement of the Kashmir dispute and toward nuclear stabilization.

This success story is necessarily qualified. Backsliding can occur, domestic politics in Pakistan are volatile, and changes in government would not be surprising in India's vigorous democracy. Especially worrisome is the possibility that extremists in one or both countries could take action that could provoke another major crisis. Nevertheless, the analysis offered here suggests that progress between India and Pakistan has more to do with strategic calculation than with tactical maneuver. Structural and geopolitical factors are at work on the subcontinent that provide hope that, despite the perturbations and setbacks ahead, India and Pakistan will continue their efforts toward dispute resolution and nuclear stabilization.

New states with troubled ties that acquire nuclear weapons experience what political scientists call the stability-instability paradox. This paradox, an outgrowth of western nuclear deterrence theory, postulates that the early years of offsetting nuclear capabilities are the most dangerous. There are many causes of nuclear anxiety in the early stages of a competition: command and control arrangements, as well as safety and security mechanisms, are rudimentary. Because nuclear programs are opaque, the competitors are unsure of where they stand and anxious about falling far behind. Typically, military plans for preemption are considered before the nuclear weapon capabilities of a potential foe become too advanced or dispersed. These concerns usually reinforce leadership decisions to move forward with nuclear arsenals.

Once nuclear weapons are covertly acquired or overtly demonstrated through underground testing, the stability-instability paradox gains traction. This paradox holds that the presence of offsetting nuclear capabilities becomes an insurance policy against wars that could escalate across the nuclear threshold. But because one or both adversaries believe that they possess such an insurance policy, they might well be inclined to be less risk averse. In other words, emboldened by their nuclear weapons, one or both countries might engage in border skirmishes, to support proxy wars, or to engage in unconventional warfare against a nuclear-armed foe.

The stability-instability paradox has been evident on several occasions. During the cold war, the Soviet Union supported a proxy war against the United States in Vietnam, and the United States returned this favor in Afghanistan. Shortly after demonstrating its nuclear weapon capability, the Peoples Republic of China engaged in border skirmishing with the Soviet Union. In South Asia, this pattern has been repeated, with a limited war between Pakistan and India along the Kashmir border in 1999, the year after both nations tested nuclear weapons. For the preceding decade, Pakistan's covert nuclear weapon capabilities provided a backdrop to unconventional warfare waged against India in Kashmir, carried out principally by groups with ties to Pakistan's military and intelligence services.

The stability-instability paradox does not imprison nuclear-armed competitors to endless crises, however. Nuclear weapons can, over time, help provide the assurance necessary for contentious bilateral relations to improve — if national leaders are ready for reconciliation and if the underlying reasons for contention are satisfactorily addressed. The nuclear future in South Asia depends, in large measure, on whether Pakistan and India have turned the corner on the Kashmir dispute. But many other factors can influence South Asia's nuclear future, including some that are external to the subcontinent. This essay examines five dominant trends that are likely to shape South Asia's security environment over the next decade, and then considers five factors that could reinforce current trend lines on the subcontinent, but that are unlikely to sharply accelerate or reverse them. Finally, this essay explores potential "game changing" developments that could either trigger instability or promote nuclear stabilization.

Dominant Trends

We define dominant trends as significant drivers in the security calculus on the subcontinent. Dominant trends, in our view, are not irreversible, but they are hard to reverse.

First, we expect that both Pakistan and India will continue to view economic growth as essential to national well-being, domestic cohesion, and national security. We therefore expect that trade between Pakistan and In-

dia will continue to grow. While the perceived primacy of economic growth does not ensure peaceful relations between Pakistan and India, the pursuit of this goal is likely to further ameliorate animosity between both countries. Pakistan's future growth is limited, in part, by constrained trading partnerships with India to the south and with Afghanistan, through which trade can flow toward Central Asia. As long as Pakistan's ties to neighboring India and Afghanistan remain conflicted, these natural trade routes will generate far less than optimal results. This dominant trend is conducive to improved bilateral ties and nuclear stabilization on the subcontinent.

Second, in view of the primacy of economics in the national security calculations of Pakistan and India, we believe that the leadership in both countries will seek to avoid major crises and border skirmishes in the years ahead. Pakistan's interest in non-hostile relations with India is likely to be reinforced by continued difficulties along its border with Afghanistan. The leadership goal of peaceful borders between Pakistan and India could, however, be challenged by significant acts of terrorism perpetrated by extremists with quite different agendas. Nonetheless, we believe that there are greater buffers against escalation arising from significant acts of terrorism than in previous years. This dominant trend also points in the direction of improved bilateral relations and nuclear stabilization on the subcontinent. It is hard to envision another stand-off like that of the "Twin Peaks" crisis in 2001-2002, in which both nations maintained a war footing, with approximately one million troops stationed in fighting corridors, for almost an entire year. Lesser cases of tension can, however, be envisioned as a result of extremist acts that trigger retaliation.

We believe a third dominant trend is that Pakistani and Indian leaders will seek to avoid arms racing. Arms racing characterized the U.S.-Soviet competition during the cold war, and resulted in extreme vertical proliferation. With the end of the cold war and the demise of the Soviet Union, arms races have been replaced by asymmetric warfare. No nation is interested in replicating the U.S.-Soviet model, which resulted in grotesquely large nuclear stockpiles. Instead, national leaders in Pakistan, India, and China have repeatedly declared their intention to follow the requirements of minimal, credible deterrence.

The dictates of minimal, credible deterrence are, of course, relative rather than finite. While Pakistan acknowledges the disparity in conventional military capability with India, this disparity also appears to reinforce Pakistan's inclination to compete with India in nuclear weapon capabilities and in delivery systems. India appears very intent on having the ability to deliver nuclear weapons from land, sea, and air. Pakistan does, as well. India appears intent on complementing a diverse family of ballistic missiles with cruise missiles that are capable of delivering nuclear weapons. Pakistan does, as well. If this analysis is accurate, then Pakistan and India will seek to avoid arms racing, but they will still compete in fielding more capable nuclear weapons and their means of delivery. Thus, if India resumes nuclear testing, Pakistan is likely to, as well. Countries that acquire more and more nuclear weapons and more sophisticated ways to deliver these weapons typically do not feel more secure as a result. Instead, they feel increased concern over the improved nuclear capabilities of a potential adversary. This dominant trend will work against nuclear stabilization on the subcontinent.

The fourth dominant trend we posit is that internal security concerns will continue to be paramount for both Pakistan and India. Pakistan's domestic cohesion is being stressed by several separate but mutually reinforcing factors, including the strains generated by prolonged military rule, the resurgence of the Taliban and sympathies toward them in regions adjacent to Afghanistan, and the difficulties generated by being an ally of the Bush administration in its "war on terror." Tensions between provinces and the Center are not far from the surface and occasionally boil over. Competing demands over resources, particularly water, are likely to exacerbate these tensions in the future. Pakistan's leaders must also focus on ameliorating sectarian and communal friction.

India, too, must focus on internal security concerns in the northeast, which are growing, and in Kashmir, which appear to be waning. Violence against the state perpetrated by alienated Muslims within India must also preoccupy India's leadership. It is a rare conjunction when internal security concerns are greater than external security concerns in both Pakistan and India. Bilateral relations and nuclear stability could improve if both coun-

tries focus inward to address domestic problems — unless Pakistan's military and intelligence leaders unwisely seek national cohesion by reviving fears of an Indian threat.

We project that a fifth dominant trend is that the United States will seek to maintain strong ties with both India and Pakistan. This has been a rare occurrence in the diplomatic history of independent India and Pakistan. For most of the cold war, American diplomacy toward the subcontinent was an either/or proposition: when U.S. ties with Pakistan were strong, they were troubled with India, and vice versa. The Bush administration has made a concerted effort to improve ties with both countries, and the tragic events of September 11, 2001, have resulted in far stronger ties with both Pakistan and India.

U.S.-ties with India have never been stronger, and are likely to continue moving in a positive trajectory. While overly optimistic views are likely to be disappointed, the upswing in bilateral relations between Washington and New Delhi can be expected to continue, bolstered by increased economic ties and trade, and as a result of the increasingly active role in U.S. politics played by the Indian-American community.

The United States also has an important stake in Pakistan's future. If Pakistan transitions to a progressive, moderate Islamic state, it will become a model for other nations and a bastion of stability in a troubled region. Given Pakistan's importance, Washington will continue to seek improved ties, despite lingering issues of contention and growing domestic political unrest. Nonetheless, the legacy of the past, and the mutual mistrust that has been engendered, will not go away. Pakistan's prior support for the Taliban, its ties to extremist groups that have been active in Kashmir and Afghanistan, and the export of nuclear weapon-making equipment and designs from Pakistan to Iran, North Korea and elsewhere continue to shadow bilateral relations. The other side of this coin is that many Pakistanis remember the imposition of sanctions over Pakistan's nuclear program shortly after Pakistan helped the United States succeed in prompting the Soviet Union's withdrawal from Afghanistan. There is a widespread view in Pakistan that the United States can be counted on to advance its own interests, but not to be a reliable supporter.

Even with this recent history, Washington and Islamabad have managed to improve ties. The biggest stumbling block for the U.S.-Pakistan relationship at present is the resurgence of the Taliban and the determination by the U.S. intelligence community that it and al-Qaeda have established sanctuaries on Pakistani soil along the Afghan border, from which cross-border military operations are carried out. Washington understands that the Federally Administered Tribal Areas along the Afghan border have always had considerable autonomy and resent efforts by the Government of Pakistan to exercise direct control. Nonetheless, Washington cannot accept this as a reason for allowing sanctuaries and training camps that carry out attacks against U.S. and NATO forces and that undermine the government of neighboring Afghanistan.

Both Islamabad and Washington understand that this issue carries the possibility of another break in relations, which could have severely negative consequences for Pakistan's national security, regional stability, and Pakistan's domestic politics, as well as for U.S. national security interests. Both capitals can therefore be expected to try to prevent these unwelcome outcomes. Another sharp break in U.S.-Pakistan ties would likely remove an important shock absorber in the subcontinent. If the United States can continue to maintain improved ties with both India and Pakistan, this would bode well for nuclear stability on the subcontinent.

Influencing Factors

We define influencing factors as those that could well reinforce positive or negative trend lines on the subcontinent, but that are unlikely to sharply accentuate or reverse them. We identify the India-United States nuclear cooperation agreement, China's test of an anti-satellite weapon, India's testing and pursuit of theater missile defenses, and India's and Pakistan's military modernization programs as influencing factors. Leadership changes in both India and Pakistan could also become an influencing factor.

The Indo-U.S. nuclear cooperation agreement is a significant initiative that is likely to have negative repercussions for global nonproliferation norms, but we do not believe that it will markedly impact the nuclear bal-

ance on the subcontinent. Even assuming that all of the domestic and international hurdles are surmounted to implement this agreement, the construction of nuclear facilities is a lengthy process. But it is far from clear at this writing whether domestic sensitivities concerning the proposed agreement would allow the Government of India to proceed. It is also unclear, after the 1984 industrial accident at a Union Carbide facility in Bhopal, which resulted in the loss of 20,000 lives, that the Indian Parliament would approve legislation to limit liability in the event of a nuclear accident. Most companies that build nuclear power plants would require such legislation before embarking on new construction projects.

If all of these hurdles could be overcome, Indian and U.S. approvals of the nuclear cooperation agreement would further bolster India's standing as an exceptional nation and heighten Pakistan's sense of grievance. Even so, if past remains prologue, Indian governmental entities are likely to proceed with civil nuclear power generation at a measured pace, given the entrenched bureaucratic and political hurdles that are associated with building nuclear power plants. If this projection is accurate, significant energy dividends resulting from the nuclear agreement are unlikely to materialize over the next decade or more — including the growth of civil nuclear infrastructure that could be redirected to India's military nuclear programs. Nor do we expect that the nuclear deal would lead to a convergence of Indo-U.S. strategic objectives. With or without the nuclear deal, New Delhi would seek to improve ties with both Beijing and Washington. And with or without the nuclear deal, New Delhi would seek to cover growing energy needs, including from Iran.

China's successful test in January 2007 of an anti-satellite weapon, like the Indo-U.S. nuclear cooperation agreement, is a significant development. It does not, however, change fundamental security calculations on the subcontinent or elsewhere. Satellites are inherently vulnerable and extremely difficult to defend. Any nation that possesses medium-range missiles and nuclear weapons has the inherent means to do great harm to satellites in low earth orbit. In this context, India, Pakistan and China all possess rudimentary, indiscriminate means of harming satellites. Some space-faring nations also possess the means of destroying or disabling satellites by using

"hit-to-kill" technologies — as China and the United States have demonstrated — or by using lasers and jammers. China has invested substantially in lasing capabilities.

China's demonstrated anti-satellite capabilities could be used against India as well as against the United States. It would therefore not be surprising if India's military space sector is also investigating such capabilities. Pakistan relies less on satellites than India, but neither country's military capabilities appear to be heavily dependent on satellites for war fighting. The same can be said regarding China. Over time, all three countries are likely to become more dependent on satellites, but this time line is likely to be extended. Moreover, the dominant trends we have identified suggest that the likelihood of warfare between Pakistan and India or between India and China is not high and is decreasing. And if the dominant trends we have identified were to be reversed, and if war were to occur, it would likely be focused on the ground, not in space.

We therefore expect that the Chinese anti-satellite test might accelerate somewhat Indian research and development programs related to space warfare applications. We would also anticipate hedging strategies to be further developed in Pakistan, as well. But we expect that other security concerns will continue to dominate Pakistani and Indian military plans and programs.

Pakistan's military plans must also take into account India's interest in theater ballistic missile defense programs, as well as the possibility that New Delhi might invest considerable resources to acquire and field such capabilities. India's demonstrated interest in theater missile defenses has been greater than its demonstrated interest in space warfare capabilities. Nonetheless, Pakistani military planners appear to have a well-founded appreciation of the technical difficulties associated with deploying effective missile defenses. Indian officials are also likely to be keenly aware of the opportunity costs of investing in missile defenses that may be ineffective compared to, say, investments in improved offensive military capabilities of proven effectiveness. If, despite these calculations, India chooses to invest in ballistic missile defenses, Pakistan can choose to increase its investments in both ballistic and cruise missiles.

Thus, while Pakistan is likely to view India's interest in missile defenses warily, Rawalpindi's primary concern may well be more broadly focused on New Delhi's acquisition of multi-purpose military technologies, rather than on its possible deployment of missile defenses. The acquisition of defense technologies through foreign purchases, co-production agreements, and domestic investments would further extend India's conventional military advantages over the next decade, but not fundamentally change dominant trends or the continuation of mutual vulnerability to nuclear attack.

India and Pakistan will modernize and expand their conventional military capabilities over the next decade through domestic and foreign procurement. These programs are likely to accentuate the growing disparity between the power projection capabilities of India and Pakistan. The divergence in conventional military capabilities can best be managed through more normal bilateral relations, increased trade, and a mutual willingness to resolve the Kashmir issue. India's conventional military advantages over Pakistan will grow in any event, since they are related to advantages in infrastructure, purchasing power, a larger set of military suppliers, and increased Chinese military capabilities.

Pakistan is more likely to keep pace with India with respect to nuclear modernization programs over the next decade. Pakistan has invested heavily in this competition, and might well view its nuclear stockpile and delivery vehicles as compensation for the growing conventional imbalance. We expect both countries, as well as China, to test and acquire more effective ballistic and cruise missiles. Over the next decade, all three countries are likely to acquire improved means of delivering nuclear weapons from sea-based platforms. The possibility of a resumption of nuclear weapon testing over the next decade cannot be ruled out — but leaders in all three countries would not relish being the first nation to break a global moratorium on nuclear testing. We do not envisage that modestly paced nuclear force modernization programs will fundamentally alter the subcontinent's strategic environment.

The last potential influencing factor relates to the possibility of leadership changes that disrupt positive trends or accentuate negative trends. Leadership changes in both countries have slowed down efforts at normal-

ization in the past and could do so again. Successive coalition governments in India have spanned the political spectrum, but these governments have pursued similar national security policies. We conclude from this record that changes in Indian governance and the vigorous domestic political challenges that sitting governments face are likely to slow down, but not fundamentally alter the dominant trends we have identified.

Potential changes in governance in Pakistan offer a wider range of choices, but we do not adhere to the belief expressed in some quarters that a post-Musharraf scenario would produce a significant shift in which religious extremists gain the levers of power. There is nothing in Pakistan's history that lends credence to this outcome. If the two major political parties, which do not define themselves primarily in religious terms, are allowed to compete freely in national elections, and if their leaders are allowed to return home to help mobilize their respective political bases, this scenario becomes even more remote. Nonetheless, domestic political jockeying within Pakistan could also slow down positive regional trends. If, as we contend, Musharraf's shift on Kashmir is rooted in economic and geo-strategic calculations, as well as internal security concerns, then these factors are also likely to influence his successors.

Wild Cards and Game Changers

We define wild cards and game changers as developments that could greatly impact political, national, and regional security on the subcontinent if they were to occur. These developments could significantly accentuate or shift the dominant trends we have identified.

One possible high-impact event would be an incident of nuclear terrorism on the subcontinent. Indeed, concerns over nuclear terrorism could eclipse concerns over the India-Pakistan nuclear balance over the next decade. War-fighting scenarios involving total mobilization along the two traditional fighting corridors, as well as the deliberate escalation of a conventional conflict across the nuclear threshold, do not appear likely for the foreseeable future, although these scenarios cannot entirely be ruled out. New crises could still unfold, and the use of nuclear weapons, whether by

accident, a breakdown of command and control, or inadvertence, cannot be dismissed. One possible driver of unwanted crises and escalation could be an act of nuclear terrorism in either India or Pakistan that is attributed to extremists that have received foreign support. An act of nuclear terrorism could be particularly hard to contain if it occurs in the context of ongoing deterioration of Pakistan-India relations.

The use of a radiological dispersal device, or a "dirty bomb," is more plausible than the detonation of nuclear weapon that has been stolen or constructed out of highly enriched uranium. In both India and Pakistan, as elsewhere, materials that could be used to make dirty bombs are widely available and poorly guarded in the civil sector. These devices would not cause great loss of life, but they could provoke widespread public anxiety and economic disruption.

A second wild card or game changer on the subcontinent could be a crisis between the United States and Iran where Washington uses military force against Tehran, perhaps to delay Iran's nuclear programs or in retaliation for Iranian-backed attacks against U.S. interests or military forces in the region. In these scenarios, Washington would expect diplomatic support from Islamabad and New Delhi. If support were not forthcoming in one or both cases, the U.S. executive and/or legislative branches might re-evaluate ongoing bilateral cooperation efforts, particularly with respect to military assistance and, in the case of India, civil nuclear cooperation.

A clash between the United States and Iran would likely be problematic for both U.S.-Pakistan and U.S.-India relations. Domestic backlashes against the United States could be expected in both countries. Pakistani authorities might also face the prospect of increased sectarian violence and domestic unrest. Leaders in both countries would find it difficult to improve ties with Washington. Instead, backsliding could occur.

A third wild card and potential game changer could be a rupture in U.S.-Pakistan ties due to the resurgence of the Taliban and al-Qaeda, and their continued use of Pakistani territory to carry out attacks on U.S. and NATO forces operating across the border in Afghanistan. The resurgence of the Taliban, the widely presumed location of Taliban and al-Qaeda leaders on Pakistani soil, and unrest in Pakistan's tribal belt along the Afghan

border pose major challenges for U.S.-Pakistan ties and the Pakistani government. If the executive and/or legislative branches in the United States conclude that Pakistan is unwilling or unable to control the Taliban and al-Qaeda, bilateral ties will be seriously injured.

Pressure would likely build on U.S. military and political leaders to undertake cross-border actions against perceived sanctuaries for the Taliban and al-Qaeda leadership which, if carried out, could have extremely negative impacts on Pakistan-U.S. relations and for Pakistan's domestic politics.

A fourth potential wild card and game changer would be a U.S.-China clash over Taiwan. Another Taiwan crisis could also become a test of U.S. ties with both Islamabad and New Delhi. India seeks improved ties with Beijing as well as Washington, and would seek to avoid antagonizing either capital. Pakistan would also be placed in a tough spot in the event of a possible clash between its two most important patrons. Depending on how a U.S.-China confrontation over Taiwan were to play out, it is possible that Pakistan and India could choose different sides. In this event, U.S. ties with India could improve further, while U.S. ties with Pakistan could deteriorate further

Not all wild cards and game-changing developments are negative. A Pakistan-India agreement on the key elements for settling the Kashmir dispute would be a significant accomplishment, even if negotiations on implementing details take considerable time. Agreement on the key elements of a Kashmir settlement would likely generate extremist acts as well as provide insulation against a downturn in bilateral Pakistan-India ties. It would facilitate economic growth, cross-border and regional trade, providing one basis for greater domestic tranquility in both countries, and a counter to the negative wild cards described above.

Conclusion

The stability-instability paradox has produced a succession of crises and one limited border war without escalating across the nuclear threshold. In recent years, however, the dominant trends in Pakistan-India relations are

primarily positive. With sound leadership in both countries, the normalization process can continue. An agreement in principle concerning the key elements of a Kashmir settlement is no longer inconceivable. Indeed, the primary impediment to such an agreement in both countries is now domestic politics, rather than disputes over territory, religion, sovereignty and inheritance. The primary threats to both countries are now internal rather than external. Acts of domestic violence can, however, lead to the reopening of old wounds. And external developments, including events in Iran, Afghanistan and China, could still have important consequences for the subcontinent.

On balance, improved bilateral relations between India and Pakistan constitute a significant success story over the past three years. Nuclear stabilization measures have been negotiated and implemented, such as upgrades to the nuclear "hotline," added communication links, and a pre-notification measure for ballistic missile flight tests.

The most important nuclear stabilization measures, however, have related to Kashmir. Artillery, mortar, and small arms firing across the Line of Control dividing Kashmir have become an uncommon occurrence. Cross-border infiltration of extremists has been limited in recent years. India and Pakistan have agreed to allow divided families to meet across the Kashmir divide. Intra-Kashmiri trade has been approved by both governments, and truck, rail and bus traffic has commenced across international borders.

Macro-economic and geopolitical factors, as well as internal security concerns, have moved India and Pakistan away from dangerous patterns of confrontation and recurring crises. While reverses and setbacks to these dominant trends are likely to occur, and while political uncertainties will persist, there is now greater insulation against the most worrisome nuclear threats on the subcontinent.

Enhancement of IAEA Guarantees and Export Control (NSG, MTCR)

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The IAEA international safeguards and the Nuclear Suppliers Group export control system, as well as the Missile Technology Control Regime, constitute fundamental pillars of the international nonproliferation regime. Over the years, they have accumulated significant expertise and experience and now play an ever increasing role in stemming the spread of weapons of mass destruction.

International Safeguards

The concept of international control of atomic energy was first introduced by Danish nuclear physicist Niels Bohr in 1943-44, but initial attempts to institutionalize it (the Baruch Plan of 1946, the Soviet proposals on international control of 1947) were not successful.

The first system of international safeguards was established by the International Atomic Energy Agency (IAEA), which was created in 1957. This system, finally approved in 1965 (INFCIRC/66/Rev.2), was not, however, mandatory and in practice has been used in cases when supplier-states

demanded and recipient states agreed to accept safeguards. As a result, although the Agency now applies safeguards, under appropriate agreements, in over 150 states, some states have unsafeguarded nuclear facilities, employed both for civilian and military purposes, which were constructed either indigenously or with the assistance of other states (India, Pakistan, Israel, and the DPRK).

Article III.1 of the Nuclear Nonproliferation Treaty (NPT) of 1968 made international safeguards mandatory for non-nuclear-weapon states party to the treaty (NNWS), and in 1971 the IAEA Board of Governors approved model safeguards agreements for them (INFCIRC/153).

The NPT requires the application of *comprehensive* safeguards to *all* peaceful nuclear activities in NNWS. Procedures for the safeguards are to be followed with respect to all source or special fissionable material, whether it is being produced, processed or used in any principal nuclear facility or is outside any such facility. The comprehensive safeguards are based on the following main principles:

- The diversion of nuclear energy from peaceful application to use in nuclear weapons or other nuclear explosive devices is prevented. This requires the timely detection of the diversion of "significant quantities"¹ of nuclear material that could be used for the manufacture of nuclear weapons or for unknown purposes;
- Each state establishes and operates a national system of accounting for and controlling all safeguarded nuclear materials;
- States provide the IAEA with initial reports on all nuclear materials covered by safeguards, and also on the construction of nuclear installations relative to the application of safeguards to nuclear materials;
- The IAEA conducts inspections to verify the information in these initial reports in order to confirm the *completeness* and *correctness* of the information they contain on the existence of nuclear materials;
- In accordance with established criteria (the amount of nuclear material, its isotope composition, the sensitivity of a nuclear installation from the proliferation point of view, etc.), international inspectors inspect such

¹ A 'significant quantity' is defined as 8 kg of weapons-grade plutonium and 25 kg of highly enriched uranium (more than 20% U-235).

installations in order to verify the inventory amounts of nuclear materials and any changes to these amounts; they can measure the nuclear materials on-site or take samples for subsequent analysis at IAEA headquarters;

- Technical control methods, such as the use of special seals (containment) and the installation of automatic cameras (surveillance), are widely used;
- The Agency can carry out special inspections if it deems the information provided by a state insufficient, and it has access to any site where nuclear materials are located;
- In the event of a safeguards violation, the IAEA Director General transmits a report to the Board of Governors, which, if need be, can refer the case to the UN Security Council for action under Article VII of the UN Charter.

The safeguards system takes into account that Article IV of the NPT does not explicitly put any restriction on uranium enrichment and spent fuel reprocessing. As one of the NPT negotiators, I can confirm that any attempt to have done so may have made the conclusion of the treaty extremely difficult, if not impossible. The final wording of Article IV, recognizing the "inalienable right" to develop nuclear energy for peaceful purposes *in conformity with Articles I and II* of the treaty, reflected an effort to attract support for the treaty from Germany, Japan and many other NNWS.

One has to admit that practical implementation of comprehensive safeguards has revealed shortcomings in the system. More than 30 non-nuclear-weapon states party to the NPT (most of them, true, carrying out no or very little nuclear activity) have not concluded comprehensive safeguards agreements. Furthermore, given that the comprehensive safeguards agreements are tied to a state's adherence to the NPT, *they are not indefinite* and their application can be ended if a state withdraws from the NPT, as was done by North Korea. And in the initial period of safeguards implementation the Agency inspectors focused their work mainly on verifying *declared* nuclear activities.

After the Gulf War in 1991, it emerged that Iraq, which was a party to the NPT and had the safeguards agreement with the IAEA, had been pursuing

an undeclared nuclear weapons program for a number of years. The UN Security Council mandated the UN Special Commission (UNSCOM) and the IAEA to supervise destruction of Iraq's nuclear and other WMD potential. The Iraqi case exposed the limitations of the IAEA safeguards system, which concentrated on declared nuclear materials and nuclear activities and gave relatively limited access rights to information and nuclear installations.

These developments prompted the international community to adopt a number of measures aimed at strengthening the safeguards system. Over 1991-1993, the IAEA made efforts to improve its safeguards. The Agency's Board of Governors confirmed the right to carry out special inspections and made decisions on the timely provision of information on the design of installations under construction or undergoing modernization, on a more extensive reporting system on imports and exports of nuclear materials and on the export of special non-nuclear equipment and materials.

In 1993, the Board of Governors approved the so called 93 + 2 Program for creating a more effective system of safeguards. The program gave the IAEA new legal powers in administering safeguards that included obtaining additional information from states on installations where nuclear materials subject to safeguards had been located at any time in the past or would be located at any time in the future; the more extensive use of surprise inspections; environmental sampling at sites to which the inspectors have access; and the use of improved technology for remote monitoring of nuclear material flows.

In order to carry out measures for strengthening the safeguards system, which required conferring new legal powers on the Agency, in 1997 the Board of Governors approved a model Additional Protocol to safeguards agreements. This Additional Protocol gave the Agency the right to:

- Obtain information on and gain access for its inspectors to all aspects of states' nuclear fuel cycle activities, from uranium mines to uranium waste storage facilities, and to gain access to any other sites where nuclear materials are located;
- Obtain information on research and design work related to the nuclear fuel cycle;
- Obtain information on all buildings located at a nuclear site and obtain access to these buildings for inspectors at short notice;

- Obtain general nuclear fuel cycle plans for the next decade, including planned research and design work;
- Obtain information on the manufacture and export of sensitive technology related to nuclear activities;
- Take environmental samples outside declared sites in cases where the IAEA deems this necessary;
- Streamline administrative measures to facilitate the appointment of inspectors and the issue of multi-entry visas for unannounced inspections and to provide IAEA personnel with access to modern communications technology.

Overall, these measures considerably reinforce the international safeguards system. For states that have brought the Additional Protocol into force, the Agency can now not only verify that these states are not diverting nuclear materials from their declared activities, but also ensure that they have no *undeclared* nuclear materials and *undeclared* nuclear activities in general. The protocol makes it possible to carry out on-site verification at short notice and to make wide use of unannounced inspections.

But states are not obliged to sign the Additional Protocol. Only 78 of the more than 180 states party to the NPT have brought it into force so far. Countries that have not ratified the protocol include Iran, Kazakhstan and Mexico, while among countries that have yet to sign the protocol are Argentina, Brazil, Egypt, Syria, Israel, India, Pakistan, North Korea and a good many more.

The Safeguards Implementation Report for 2005² and the IAEA Director General's statements to the Board of Governors were able to establish that all nuclear materials placed under safeguards were used for peaceful nuclear activity or were duly accounted for, and that no undeclared nuclear materials or undeclared nuclear activity had been detected with regard to only 24 states that had comprehensive safeguards agreements and had brought the Additional Protocol into force. With regard to the other states, the Agency could make only a more limited conclusion that their *declared* nuclear materials were being used for peaceful purposes.

The Agency can provide no assurance with regard to countries that

² Safeguards Implementation Report for 2005 (GOV/2006/31).

have no safeguards agreements and limited assurance about the absence of undeclared nuclear material and activities with regard to countries that do not have an additional protocol in force.

In recent years we have seen three major developments that may affect the efficiency of international safeguards:

- the increased dissemination of nuclear technology and nuclear "know-how", particularly in light of renewed interest in nuclear power;
- a renewed drive on the part of a number of states to acquire technology for nuclear weapons purposes;
- the emergence of clandestine procurement networks, sometimes called proliferation rings.

Implementation of Safeguards in the DPRK

In February of this year, the parties at the Six-Party Talks agreed on the "Initial actions for the implementation of the Joint Statement" adopted in Beijing in September 2005. These actions envisioned, inter alia, the DPRK shutting down and sealing, for the purpose of eventual abandonment, its Yongbyon nuclear facility, including the reprocessing facility. And they also envisioned the return of IAEA personnel to conduct all necessary monitoring and verification as agreed by the IAEA and the DPRK. These are positive steps towards the denuclearization of the Korean Peninsula and towards the normalization of the DPRK's relationship with the Agency. The Director General was recently invited by the Democratic People's Republic of Korea to visit the DPRK to "develop relations between the DPRK and the Agency, as well as to discuss problems of mutual concerns." However, the process of normalization in North Korea is still developing very slowly.

Implementation of Safeguards in Iran

According to the latest reports and information on the implementation of the NPT safeguards agreement and relevant provisions of UN Security Council resolutions 1737 and 1747, Iran has not suspended its enrichment related activities, nor its heavy water related projects, as required by the

Security Council.

The Agency has been verifying Iran's nuclear program for the past four years, with the aim of providing the required assurances that all nuclear material in Iran has been declared to the Agency and is under safeguards. However, inspectors have been able to verify the non-diversion of only *declared* nuclear material, and the IAEA continues to be unable to reconstruct fully the history of Iran's nuclear program and some of its components, because it has not been provided with the necessary level of transparency and cooperation on the part of Iran. The Agency has not seen concrete proof of the diversion of nuclear material, nor the industrial capacity to produce weapon-usable nuclear material, which is an important consideration in assessing the risk. However, quite a few uncertainties still remain about experiments, procurements and other activities. This renders the Agency unable to provide the required assurance about the peaceful nature of Iran's nuclear program.

Iran's verification case is *sui generis*. Unlike other verification cases, the IAEA's confidence about the nature of Iran's program has been shaken because of two decades of undeclared activities. This confidence will only be restored when Iran makes the long overdue decision to explain and answer all the Agency's questions and concerns about its past nuclear activities in an open and transparent manner. Until that time, the Agency will have no option but to reserve its judgment about Iran's nuclear program, and as a result the international community will continue to express its concerns.

Only through full cooperation with the Agency, as the independent verification body — and irrespective of any progress or lack thereof in its negotiations with other relevant parties — can Iran dispel the doubts about its nuclear program. Assurance by the Agency about Iran's nuclear program will undoubtedly facilitate a solution to the Iranian issue — which would, on one hand, take into full account Iran's right to the peaceful use of nuclear energy and, on the other, provide the necessary level of confidence to the international community about Iran's nuclear program and its future direction.

Director General Dr. ElBaradei declared that the IAEA continued to be in a "stalemate" when it came to verification of Iran's nuclear program and

that it was not in a position to resolve "outstanding issues of concern". "We have been going through the verification process for the last four years and unless Iran is able to provide answers to the Agency about our concerns, then we will continue to be in a position where we have to reserve judgment about their program."

He has been calling on Iran "to cooperate fully" with the Agency. "This would help a lot in diffusing the emerging crisis about Iran's program. It would enable a comprehensive solution that, on one hand, guarantees Iran's right to use nuclear energy for peaceful purposes, but at the same time provides the international community with the confidence that is needed after many years of undeclared nuclear activities in Iran about its program and future direction."

According to diplomats and nuclear experts in Vienna (the official report to the IAEA and the UN Security Council is expected on May 24), during a recent short-notice inspection of the uranium enrichment plant at Natanz, the inspectors found that Iranian engineers were already using roughly 1,300 centrifuges and were producing fuel suitable for nuclear reactors. Ultimately Iranian authorities aim to operate more than 50,000 of such devices.

Many experts believe that Iran is still at the beginning stages of setting up its Natanz enrichment facility on an industrial basis, and, therefore, remain convinced that through negotiation a comprehensive and durable solution can be reached to the Iranian nuclear question and other issues related to it.

With new challenges to the non-proliferation regime coming from North Korea, Iran and some other countries, with further advances in nuclear technology, and with nuclear energy playing an increasingly important part in everyday life, the international community faces the need to strengthen the system of international safeguards in order to prevent nuclear energy from being diverted from peaceful to military use. The IAEA, the principal nuclear states and the entire international community must work tirelessly on ensuring that safeguards are effective and up to the tasks that life and the development of nuclear technology place before them.

So, as we see, the NPT regime today faces a number of challenges.

Though many experts would not agree that the system is in "crisis", we have to admit that the regime is certainly being tested.

Looking at experience in implementing the IAEA safeguards so far and the lessons this experience offers, what measures can we take to improve this system and make it universal? Some suggestions set out below are not entirely new and some of them have already been put forward in one form or another and discussed by governments, the IAEA and the international expert community.

Unquestionably, the main task is to ensure that the Agency is able to detect states' *undeclared* nuclear activity wherever it occurs. To this end, the following steps should be considered and then taken:

- All countries, and above all states carrying out nuclear activities, whether on a significant or less significant scale, should bring into force the 1997 Additional Protocol on safeguards. The current situation in which only 78 countries have agreed to abide by the protocol in the ten years of its existence is in no way satisfactory. The Additional Protocol should become a universal standard for verifying states' compliance with their nuclear non-proliferation obligations. Seeing that the IAEA's efforts in this area have so far failed to achieve the desired results, it would perhaps make sense to consider involving the UN Security Council, as the international body mandated to maintain international peace and security, in efforts to make the Additional Protocol comprehensively applied, given that this issue is directly related to international peace and security.
- The nuclear-weapons states party to the NPT should set the example and bring the Additional Protocol into force, applying its provisions not only to their international cooperation, but also to their peaceful nuclear activities. Of the five official NWS only Russia and the U.S. have not yet finalized their adherence to the protocol.
- The international community should promote multilateral approaches to the nuclear fuel cycle under international safeguards. A good example is the Russian project to involve the IAEA in the surveillance of the international enrichment center in Angarsk (Siberia).
- The Nuclear Suppliers Group should adopt a common guideline mak-

ing application of the Additional Protocol a mandatory condition for receiving imports of nuclear materials, equipment and technology.

- In its safeguards implementation activities, the IAEA should step up work on the practical introduction of *integrated* safeguards that would raise the effectiveness of safeguards, while at the same time making them more cost-effective, in as many countries as possible that have comprehensive safeguards agreements and have joined the Additional Protocol.
- Steps have been taken in recent years to operate research reactors on less highly enriched uranium and to return fresh highly enriched uranium and spent fuel to the country that originally supplied the reactor. Russia and the U.S. follow this policy.³ However, there are still around 100 research reactors operating on 90-percent enriched uranium. More active steps should be taken to implement these measures.
- The IAEA long-standing and productive experience in safeguards implementation suggests that it could be used for broader objectives related to nuclear weapons non-proliferation and even to limiting the production of nuclear arms. The verification of South Africa's dismantlement of its military nuclear program in 1993 set an important precedent in this respect. The experience of the IAEA could be extremely useful in reaching an agreement prohibiting the production of fissionable material for weapons use both in the nuclear powers and in countries involved in uranium enrichment, reprocessing spent nuclear fuel and plutonium extraction.
- The IAEA safeguards activity needs to be reinforced.⁴ Since the technical equipment at its own laboratories for analyzing samples collected by inspectors is becoming outdated, the IAEA secretariat often has to request the assistance of laboratories in member states, thus making independent conclusions on the content of samples unfeasible. The Agency must have modern facilities of its own for analyzing samples and proper conditions for scientific research work on safeguards — something it lacks at present. In particular, what is needed is research

³ Global Threat Reduction Initiative (GTRI).

⁴ IAEA Director General Mohamed ElBaradei has raised the issue of doubling the Agency's safeguards budget from its current figure of around \$130 million.

and development on innovative technologies for undeclared activities. The IAEA is to be commended for launching a new project: Novel Techniques and Instruments for Detection of Undeclared Nuclear Facilities, Materials and Activities.

- There is a need to examine the issue of providing the IAEA with its own independent opportunities for carrying out satellite monitoring of states' nuclear activities (through wider use of contracts with existing national and international space agencies, for example) and, in any case, for independent analysis of the satellite information received from states.
- In recent years, there have been cases where proliferation concerns have created a confidence deficit, where even the access rights permitted by the additional protocol may not be sufficient. In such cases, supplementary "transparency measures" should be made available, if necessary.
- Both safeguards agreements and additional protocols are focused principally on nuclear material and nuclear activities. For this reason the IAEA's legal authority to investigate possible parallel weaponization activity is limited, unless there is some nexus linking this kind of activity to nuclear material. This is a problem that cannot be easily solved. But, in my view, it should be well thought-out.

The latest resolution of the UN Security Council on Iran, unanimously adopted last March (resolution 1747), reiterated the determination of the UNSC to reinforce the authority of the IAEA, strongly supported the role of the IAEA Board of Governors, commended and encouraged the Director General of the IAEA and its secretariat for their ongoing professional and impartial efforts, and underlined "the necessity of the IAEA, which is internationally recognized as having authority for verifying compliance with safeguards agreements, including the non-diversion of nuclear material for non-peaceful purposes, in accordance with its Statute."

The Nuclear Suppliers Group (NSG)

The Nuclear Suppliers Group seeks to contribute to the nonproliferation

of nuclear weapons through the implementation of two sets of guidelines for *nuclear* and for *nuclear related exports* (i.e. dual-use equipment, material and technology). The group, established in London in 1975, originally included seven states: Canada, the Federal Republic of Germany, France, Japan, the U.K., the U.S., and the USSR. Now the NSG consists of 45 members.⁵ The NSG's goal is to ensure that nuclear exports are made only under appropriate safeguards, physical protection, other nonproliferation conditions and restraints. The Group provides a Trigger List of nuclear material and equipment items to be controlled, which was originally drafted by the Zangger Committee soon after the NPT came into force. The Trigger List is continuously updated.

The developments in Iraq in 1991 revealed that a large part of Iraq's effort had been focused on the acquisition of items not covered by the NSG guidelines. In 1992, the NSG established guidelines for transfers of nuclear-related dual-use equipment, material and technology, which could make a significant contribution to an unsafeguarded nuclear fuel cycle or nuclear explosive activity.

Also, in 1992 the NSG endorsed a full-scope safeguards policy, and now the NSG requires IAEA safeguards as a condition of supply, with full-scope safeguards as the norm, as well as the introduction of national control laws and procedures; physical protection against theft of sensitive parts of the nuclear fuel cycle; restraint of enrichment and reprocessing plant assistance to countries of proliferation concern; a common control list; and information sharing among members. Transfers to NNWS without a full-scope safeguards agreement shall be authorized only in exceptional cases when they are deemed essential for the safe operation of existing facilities, and only if safeguards are applied to those facilities.

For years, the NSG has been effectively promoting the world-wide nuclear export control regime. Many countries have adopted national export control legislation based on the NSG Guidelines and its Trigger List. How-

5 NSG members: Argentina, Australia, Austria, Belarus, Belgium, Brazil, Bulgaria, Canada, China, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Kazakhstan, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Turkey, Ukraine, the U.K., and the U.S.

ever, a new situation has recently developed in the NSG.

In July 2005, the U.S., acting independently and clearly pursuing its own strategic objectives, which have nothing to do with the maintenance of the nuclear nonproliferation regime, concluded a nuclear deal with India, a de facto nuclear-weapon state, which has no full-scope safeguards. Under this deal, the U.S. Administration agreed to make changes in the U.S. law and its multilateral commitments to permit exports of nuclear equipment and technology to India. That action constitutes a radical departure from the long-standing U.S. obligations and policies, which preclude nuclear cooperation with states not party to the NPT and without full-scope safeguards.

The nonproliferation benefits of the deal are very limited or non-existent. But damage to the entire international nuclear nonproliferation regime is self-evident, which met with critical reaction on the part of some NSG members. In India, there is also opposition to the deal from some politicians. The U.S.-India negotiations that took place recently have not brought about positive results. India will have to negotiate a safeguards agreement with the IAEA to be approved by the Board of Governors. The NSG is yet to consider the U.S.-India deal. At the latest annual NSG meeting that took place in South Africa last April, the changes in the Guidelines proposed by the U.S. were not considered.

I am of the view that the problem of all three countries (India, Pakistan, and Israel) and of their association in some form with the NPT regime must somehow be considered and agreed upon. Their adoption of the strong export control norms established by the NSG would certainly be to the benefit of the nonproliferation system. For their part, what is also needed is, first of all, the acceptance of the CTBT and FMCT, as well as other nonproliferation measures to be negotiated. Any arrangement to be agreed upon should be in full accordance with the NPT, which requires that there must be no assistance to or encouragement of any "recipient whatsoever" to manufacture nuclear weapons.

Security Council Resolution 1540

UN Security Council Resolution 1540(2004) requires that nations adopt

criminal statutes, regulations, export-control standards, and other measures to prevent unauthorized persons from acquiring nuclear materials and equipment in their countries. This unanimously adopted resolution addresses the threat posed by non-state actors, whether on the supply side (e.g. black market networks) or the demand side (e.g. terrorist groups).

However, a number of UN members have questioned the legitimacy of the resolution, arguing that the Council exceeded its authority by acting as a global legislature and encroaching on the role of more representative bodies, such as, for example, the Conference on Disarmament, where more states can participate and enter into agreements of their own free will. Critics also have pointed out that the requirements of the resolution go beyond what states are required to do as members of the NPT, BWC, or CWC. Reservations about 1540's legitimacy have contributed to the slow pace at which it is being implemented.

I believe that, as a matter of law, 1540 is within the mandate given to the Security Council in the UN Charter, as set by Articles 25, 103, and Chapter VII.

The Missile Technology Control Regime (MTCR)

The MTCR should be considered an integral part of the nuclear nonproliferation regime. Its text states that the reason for restrictions on exports of missile technology "is to limit the risks of proliferation of weapons of mass destruction (i.e. nuclear, chemical and biological weapons), by controlling transfers that could make a contribution to delivery systems (other than manned aircraft) for such weapons."

It was launched as an informal non-treaty association of governments sharing common interests in the nonproliferation of missiles, unmanned aerial vehicles (UAV), and related technologies. Its objective is to control the proliferation of *nuclear capable* missiles, which were defined as missiles capable of delivering at least 500 kg to a range of 300 km or more. Seven states (Canada, France, Germany, Italy, Japan, the U.K., and the U.S.) formally announced the MTCR in 1987. Since then membership has expanded to 34 states, and now includes Russia, Argentina, Brazil, South Africa,

Spain and others.⁶ China, Israel, Pakistan, the DPRK, India and Iran have not joined the regime. In 1993, MTCR coverage was expanded to include missiles intended to deliver biological and chemical weapons, as well as nuclear weapons.

At its plenary meeting in Copenhagen in October, 2006, MTCR partners exchanged information and discussed trends in missile development and tests around the world and acknowledged the *growing risk* of the proliferation of weapons of mass destruction and their means of delivery. In particular, they expressed concern over missile proliferation in Northeast Asia, South Asia and the Middle East and reaffirmed their determination to strengthen export controls and discourage missile programs and activities of proliferation concern.

Partners noted the direct relevance of UN Security Council Resolutions 1695 and 1696 to MTCR export controls and expressed their determination to implement the calls in these resolutions to exercise vigilance and prevent the transfer of any items, materials, goods and technology that could contribute to ballistic missile programs of proliferation concern, in accordance with national legislation and consistent with international law.

They expressed strong support for UN Security Council resolution 1695, which registered grave concern over the missile proliferation threat posed by the DPRK missile activities, and reaffirmed that the proliferation of WMD and their means of delivery constitutes a threat to international peace and security. The plenary meeting underlined the determination of partners to fully implement the export control requirements in this UNSC resolution.

The plenary meeting reiterated its support for UN Security Council Resolution 1540. It confirmed the willingness of partners in a position to do so to assist non-member states as foreseen in the resolution and mandated the chair to pursue contact with the Committee established by that resolution.

Since its establishment in 1987 the MTCR has made significant contri-

⁶ MTCR members: Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Poland, Portugal, the Republic of Korea, the Russian Federation, South Africa, Spain, Sweden, Switzerland, Turkey, Ukraine, the United Kingdom and the United States.

butions to the international non-proliferation effort. The 34 partners of the MTCR have established an international export control standard, which is increasingly adhered to by non-members of the MTCR. The partners welcomed the growing awareness of the need for export controls and the interest expressed by many states in cooperating with the MTCR. They confirmed their intention individually and through the outreach activities of the chair to consult and cooperate with non-members to promote effective export controls over missiles and missile technology.

The partners stressed the importance of controlling intangible transfers of MTCR-controlled technology and software and agreed that "transfers" as mentioned in the MTCR Guidelines for Sensitive Missile-Relevant Transfers comprise tangible, as well as intangible, transfers. The plenary meeting agreed on additional changes to the list of controlled goods.

Although the MTCR regime has been reasonably successful in establishing policies, it has been less so in putting these policies into practice among its members. Indeed, some of the notable violators of the MTCR guidelines have been entities from within the original MTCR member states. For instance, the weapons-program dossier submitted by Iraq to the UN Security Council in December 2002 reads like a who's who of the MTCR. Among those listed as supplying missile technology to Baghdad are nine U.S. companies, apart from U.S. government agencies and laboratories; seven British companies; and one French company. In addition, U.S. entities have also cooperated with Israel to develop the Arrow Interceptor, whose 500-kilogram payload with a 300-kilometer range exceeds the MTCR's technical threshold. Israel is not a member of the MTCR but claims to adhere to its guidelines and control list, which, however, raises questions as to the veracity of these claims.

As the MTCR is a voluntary arrangement, it does not have the ability to sanction member states that violate its guidelines. The regime, considered as a cartel by many observers, has fared even worse in its unenviable task of convincing non-members to adhere to its guidelines and has struggled to gain legitimacy outside of its membership.

Although China gave a commitment in 1992 that it would abide by the MTCR guidelines, Beijing has subsequently refused to adhere to the up-

dated 1993 guidelines.

The MTCR did not gain universal appeal on account of two key omissions. First, it initially restricted itself to WMD-capable ballistic and then cruise missiles, while ignoring conventionally armed cruise missiles, although it was evident as early as the Falkland Islands War that such missile proliferation and use was likely to be of greater concern in the coming years. This preference for ballistic missiles over cruise missiles and other UAVs was based on the erroneous assumption that such sophisticated missiles were more difficult for aspirant countries to acquire. The urge not to control the spread of conventionally armed cruise missiles may also have been prompted by the lucrative export potential of such missiles.

Second, the MTCR deliberately focused on horizontal proliferation (the spread of missiles among newer states) rather than vertical proliferation (qualitative and quantitative improvement of missiles by existing missile-possessing states) and, consequently, was accused of dividing the world into missile haves and have-nots. This similarity with the NPT made the MTCR unpalatable for many countries, even if they agreed with its principles.

The creation of the MTCR was followed by a series of dramatic missile tests by Israel (the Jericho II in 1987, 1988, and 1989), India (the Prithvi in 1988 and the Agni in 1989), Pakistan (the Hatf II in 1989), and North Korea (the Nodong in 1993), and China's shipment of CSS-2 missiles to Saudi Arabia (1988) and M-11 and M-9 missiles to Pakistan (early 1990s). Even the most ardent MTCR supporters acknowledge that not only did the MTCR fail to significantly slow down the missile programs of India, Iran, Israel, North Korea and Pakistan, but it may also have actually provided an impulse for domestic support to their indigenous programs.

To buttress the decline of the MTCR, several European members of the MTCR, notably the Netherlands, proposed a code of conduct against ballistic missile proliferation. This code was formally adopted in 2002 as the Hague Code of Conduct against ballistic missile proliferation. Although as many as 126 countries signed up for the code, China, India, Iran, North Korea, Pakistan, and Syria did not. Even MTCR member Brazil has still not signed the Code. The United States has signed the Code, but Washington's

endorsement was tempered by its withdrawal in June 2002 from the 1972 ABM Treaty, paving the way for an unfettered missile defense program and dashing the hopes of the European MTCR members that at least the pace of the destabilizing missile defense program could be slowed down.

Some non-MTCR members are concerned that the regime aims to prevent their legitimate access to civilian space launch technology under the guise of preventing missile proliferation. Unless the MTCR and the Hague Code incorporate some of the proposals related to civilian space launch, they are unlikely to attract many new members. Both the MTCR and the Code would do well to address concerns related to all missiles, not just some, if their purpose is truly to curb missile proliferation in the coming years. As to the Code, it should extend its scope to include cruise missiles and unmanned aerial vehicles (UAV). Otherwise, there is a danger that the MTCR will fade into history as a vain effort by the missile possessing states to disarm the rest of the world of ballistic missiles.

Conclusion

Notwithstanding occasional grumbling about the state of the nuclear non-proliferation regime and assertions that it has failed, this regime has done what was expected of it when it was forged almost 40 years ago. What has it achieved? It has prevented and continues to prevent *widespread* nuclear proliferation. Its greatest success is that no nuclear weapons have been used since 1945. Furthermore, such weapons are in the hands of no more than eight or nine countries. As a result of the NPT and related efforts, many countries that had or were pursuing the nuclear weapons option — including South Africa, Iraq, Libya and Ukraine — gave them up. Others that had weapons research programs, including Argentina, Brazil, Canada, Egypt, Germany, Indonesia, Italy, Japan, the Netherlands, Norway, Romania, South Korea, Spain, Sweden, Switzerland, Taiwan and Yugoslavia, joined the NPT.

To be sure, the September 11 terrorist attacks, North Korea's nuclear test, Iran's nuclear program, and the proliferation network of Pakistani scientist Abdul Qadeer Khan highlight some fundamental challenges to the

nonproliferation regime that require urgent attention. Yet, over the years, the regime has proven largely successful because it has adapted and continues to adapt to new challenges. Since amending the Nuclear Nonproliferation Treaty is a near impossibility, a number of additional, tailored structures have been grafted onto the original regime. The formation of the Zangger Committee and the Nuclear Suppliers Group, security assurances by the NWS, and the gradual spread of nuclear-weapon-free zones were some of the additions. And this process is and will be ongoing.

The last decade has offered up a significant assortment of initiatives necessary to extend the regime's capabilities to meet new and sometimes old challenges. These initiatives have included the 1997 Additional Protocol; the U.S. Nunn-Lugar program; the Proliferation Security Initiative to work with like-minded states to interdict shipments related to weapons of mass destruction (WMD); UN Security Council Resolution 1540, as well as some other measures.

These initiatives have been a response in part to concerns about the misuse of peaceful nuclear fuel-cycle technology and the increasing threat of substate actors, such as terrorists, and individual proliferators like A. Q. Khan. At the same time, the perennial issue of nuclear disarmament continues to rumble in the halls of NPT conferences, the next one to be held in 2010. A recent meeting of the preparatory committee for this conference, held in Vienna in early May, has reached very mixed results, having agreed on its agenda after more than a week of wrangling and not being able to agree on a summary of discussions. The chair of the meeting, however, managed to get agreement that his summary would be called the Chairman's paper and turned into a working paper of the review conference.

How far these initiatives can advance depends in part on the actions by the NWS in handling their own nuclear weapons. They need to demonstrate their commitment to the treaty by carrying out measures in accord with the treaty's Article VI, which calls for steps toward nuclear disarmament. To the extent that such states can persuade the NNWS that they have reduced the role that nuclear weapons play in deterrence, the easier it will be to persuade them that they are fulfilling this commitment. Moreover, de-emphasizing nuclear weapons would help support the argument that the

security interests of the NNWS are better served with fewer numbers, or without nuclear weapons than with them.

The nuclear nonproliferation system, throughout its lifetime, has been the object of continuous debate, sometimes quite heated, is constantly challenged and, probably, would be challenged in the future by proliferation threats. However, the treaty continues to provide a solid international legal foundation for the nonproliferation regime, and there is no substitute for it. One has to accept this fact, and the only approach to keep the regime working is to persistently seek ways of improving it and to search and find methods for counteracting any challenges and threats to it. There does not seem to be any other option.



SESSION 5



Chairman –
Rose GOTTEMOELLER

Director of the Carnegie
Moscow Center (USA)

Nuclear Disarmament and Non-Proliferation, NPT Article VI

Roald SAGDEEV

Academician (RAS)

Distinguished Professor of Physics and Director of the “East-West” Center, University of Maryland; Director Emeritus of the Russian Space Research Institute (Russia/USA)

A Path to the Complete Elimination of Nuclear Weapons

At the time, the immediate reaction following the Reykjavik summit of Reagan and Gorbachev was rather sour. The mass media and political analysts considered it a failure. All the great ideas about the total elimination of strategic nuclear rockets with their nuclear warheads did not come to fruition. Both leaders admitted that they could not reach any mutually accepted agreement. Of course, later they succeeded in achieving something less ambitious, but still an important breakthrough — INF, thus liquidating the whole class of medium range missiles, and launched the START process. Yet, it was much more modest compared to what could have been done in the best case scenario at Reykjavik.

Now, twenty years later we are witnessing a complete reversal of atti-

tude towards that summit. I had the privilege of taking part in a small meeting hosted by George Shultz, then the Secretary of State and veteran of the Reykjavik summit, and Sid Drell, prominent physicist, at the Hoover Institution. Most of attendees of this meeting were members of the original Reagan team and indeed have had a lot to do in relation to that legendary summit.

The major line in the new interpretation of the Reagan — Gorbachev encounter is that on top of all the details and scenarios of nuclear arms reduction on the negotiations table, both leaders had a clearly stated goal, a vision of moving towards a world free of nuclear weapons.

It is not that the previous generation of top political figures ignored the notion of the desirability of such a future. In his "Atoms for Peace" speech at the United Nations in 1953, President Eisenhower spoke on American "determination to help solve the fearful atomic dilemma — to devote its entire heart and mind to find the way by which the miraculous inventiveness of man shall not be dedicated to his death, but consecrated to his life." Later President Kennedy said about the risk of nuclear war: "The world was not meant to be a prison in which man awaits his execution." Similar quotations could be found in the pronouncements of Soviet leaders, too.

But the Reykjavik meeting gave a historic chance to Mikhail Gorbachev and Ronald Reagan for the first time since WWII to bring the issue of the complete elimination of nuclear weapons to the top of the Arms Control and Reduction agenda, carried on until then as "business as usual".

If successful, it would have removed an age old complaint of every non-nuclear state, signatory to the NPT, that the nuclear states bypass Article 6 of the Nuclear Non-proliferation Treaty, which was a cornerstone of the contract between the "haves" and "have-not's".

This article states:

"Each of the parties to the treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control."

The visible neglect of this promise by the nations that are nuclear club

members eventually grew to become a serious stumbling block, threatening to erode the very NPT regime.

Since that time, both leaders of the Reykjavik epoch have gone (one altogether, the other from the actual political stage), and the momentum they created in the direction of zero nuclear weapons has almost been lost. It is especially troubling for the overall atmosphere of the post-Cold War era when the former adversaries keep reiterating that they are now strategic partners, not enemies. However, their nuclear arsenals and means of delivery are in a state of "hair trigger alert", and the major strategic treaties of the pre-Reykjavik period and those initiated by Reagan and Gorbachev are either abandoned or about to expire.

Declaratory statements about strategic partnership or even Presidential directives to re-direct rockets (as Boris Yeltsin proclaimed once in the early 90s) should not provide real reassurance. Actually, after that announcement by President Yeltsin I was bombarded with questions from reporters: "Redirect to where?" I could not find any plausible answer except "Probably to Mars". It is deeply regrettable that the post-Cold War era did not include true followers of the Reykjavik spirit. A truly historic chance was almost squandered. Take, for example, President Clinton's reaffirmation "that the U.S. remains committed to the pursuit of systematic and progressive efforts to reduce nuclear weapons globally, with the ultimate goal of eliminating those weapons." At the same time he signed Presidential Decision Directive 60, allegedly to reiterate that the U.S. will continue to keep nuclear arms as a cornerstone of its national security for the "indefinite future".

Post-Cold War and post-Soviet Russia in the mean time abandoned the "no first use of nuclear weapons" stand. And as a culmination of Post-Reykjavik anemia the current U.S. policy went even further with abandonment of the ABM Treaty and virtual loss of interest in the nuclear arms negotiation process.

This is why it is becoming so important to revisit the story of the Reykjavik summit, to take a lesson from its ups and downs and to rekindle its spirit.

The failure to reach a compromise at that meeting did not come from differences in the technicalities of the proposals by the sides. At the end, Reagan and Gorbachev behaved quite flexibly when arguing about the

numbers of warheads and rockets, on their location sites, etc. It is true there was the issue of different approaches to counting bombers. However, the real stumbling block was in ballistic missile defenses. Both leaders were ready to agree on a transition to zero offensive ballistic nuclear rockets within 10 years. Gorbachev made a significant concession, agreeing to exclude the UK and French nuclear deterrence forces from consideration during the initial stages of this process. The crucial problem was about the interplay between offensive and defensive arms in the transition period and the role of the ABM Treaty.

Here is what Gorbachev said summarizing the ultimate Soviet position (according to the notes taken by interpreters, now included in the materials of the Hoover Institution meeting):

"The USSR and the United States undertake for ten years not to exercise their existing right of withdrawal from the ABM Treaty, which is of unlimited duration, and during that period strictly to observe all its provisions. The testing in space of all space components of anti-ballistic missile defense is prohibited, except research and testing conducted in laboratories. Within the first five years of the ten-year period (and thus by the end of 1991), the strategic offensive arms of the two sides shall be reduced by 50 percent. During the following five years of that period, the remaining 50 percent of the two sides' strategic offensive arms shall be reduced. Thus by the end of 1996, the strategic offensive arms of the USSR and the United States will have been totally eliminated."

Now compare it with the American position (quotation from the same notes):

"Both sides would agree to confine themselves to research, development and testing, which is permitted by the ABM Treaty for a period of five years, through 1991, during which time a 50% reduction in strategic offensive arsenals would be achieved. This being done, both sides will continue the pace of reductions with respect to all remaining offensive ballistic missiles with the goal of the total elimination of all offensive ballistic missiles by the end of a second five-year period. As long as these reductions continue at the appropriate pace, the same restrictions will continue to apply. At the end of the ten-year period, with all offensive ballistic missiles eliminated,

either side would be free to introduce defenses."

In an additional clarification of the Soviet position, Gorbachev said that there should be "no deployment of systems in space, as we go through deep reductions to the elimination of offensive weapons", ...reiterating that what the Soviets said about research and testing in the laboratory constituted the basis and the opportunity for the U.S. to go on within the framework of SDI.

Only much later and while reading these Reykjavik notes I have discovered that Gorbachev in talking to Reagan used the word "laboratory" more than 30 times. In a nutshell, the difference between the two sides' approaches was in the interpretation of the ABM Treaty. As it became known long before Reykjavik, U.S. negotiators kept insisting on a so called "broad" interpretation of the treaty, which would permit research and development (but not deployment), including also what could be done in space or from space. The Soviet line was that research and development under ABM Treaty restrictions are permitted only in relation to fixed site traditional defenses, with "exotic technologies" excluded from such a loophole. Gorbachev probably thought that he was providing some relief to SDI by allowing research and even tests, but only within a laboratory framework. Reagan's position was that by relinquishing a chance to test in space, he would abandon his pledge about SDI to protect Americans.

On that issue of position differences, perhaps, it is interesting now to recollect a number of pre-Reykjavik informal discussions among Arms Control experts and political analysts. On the eve of the summit I hosted a small confidential meeting at my Institute of Space Research in Moscow with a very representative team from the RAND Corporation. Actually, it was the very first comprehensive visit of RAND to the USSR. The expectation of this group about the summit dialogue was that it could be difficult for the U.S. to accept Soviet insistence on a "non-withdrawal" period from the ABM Treaty (we were talking about 10-15 years). One of the American guests remarked that even a marriage contract could not ask for such a "grace period". So what we saw at the summit was not much of a problem with the grace period, but there was a real obstacle in the definition of permitted activity under the ABM Treaty. The next time I saw my interlocutor from RAND, I reminded him of the marriage metaphor and continued the same

analogy: "Obviously, the two sides had a different interpretation of extra-marital activities permitted by the marriage contract. Our side insisted on strictly platonic flirting and yours wanted to keep the field tests option."

Indeed, Gorbachev was adamant in trying to promote the notion of laboratory restrictions. However, there was another tricky issue there. Upon returning to Moscow, Edward Shevardnadze, then the Soviet Foreign Minister and Gorbachev's companion at the summit, invited me rather urgently for a conversation. Briefly repeating the story about a stumbling block in the negotiations, he said he was confused concerning the definition of a "laboratory level" of activity. Was it like somewhere in a basement that some scientists are tinkering with their instruments or what? My instantaneous reaction was: "It is too late to insist on that. Look how *Pravda* and *Izvestia* are describing Soviet space achievements with the Salyut orbital stations (by that time already 7 of them had been launched). They are praised as the 'orbital laboratories'. The borderline should be different; for example, what is the scale of these experiments in space?" As a result of my visit I was asked to pack a suitcase and fly to New York to explain this interpretation at the session of the 1st political Committee of the UN. I did that and the next day major newspapers said that a Soviet official admitted that space is also a laboratory. Little did I know that it would bring displeasure to some members of the Politburo.

Of course, one can ask an academic question: what could have happened if Gorbachev and Reagan had reached a final agreement in Reykjavik? Leaving aside that question, the most pragmatic approach is in how to rekindle the spirit of Reykjavik and its unrealized ideas. Proposals that emerged from discussions at the Hoover Institution meeting became an important part of a seminal op-ed article co-authored by George Shultz, Henry Kissinger, Sam Nunn and William Perry, published by the *Wall Street Journal*. The specific proposal outlined in that article could be considered a preliminary road map toward the eventual goal of the complete elimination of nuclear weapons. It is summarized in steps, which include:

- "Changing the Cold War posture of deployed nuclear weapons to increase warning time and thereby reduce the danger of an accidental or unauthorized use of a nuclear weapon.

- Continuing to reduce substantially the size of nuclear forces in all states that possess them.
- Eliminating short-range nuclear weapons designed to be forward-deployed.
- Initiating a bipartisan process with the Senate, including understandings to increase confidence and provide for periodic review, to achieve ratification of the Comprehensive Test Ban Treaty, taking advantage of recent technical advances, and working to secure ratification by other key states.
- Providing the highest possible standards of security for all stocks of weapons, weapons-usable plutonium, and highly enriched uranium everywhere in the world.
- Getting control of the uranium enrichment process, combined with the guarantee that uranium for nuclear power reactors could be obtained at a reasonable price, first from the Nuclear Suppliers Group and then from the International Atomic Energy Agency (IAEA) or other controlled international reserves. It will also be necessary to deal with proliferation issues presented by spent fuel from reactors producing electricity.
- Halting the production of fissile material for weapons globally; phasing out the use of highly enriched uranium in civil commerce; and removing weapons-usable uranium from research facilities around the world and rendering the materials safe.
- Redoubling our efforts to resolve regional confrontations and conflicts that give rise to new nuclear powers."

The reaction from Mikhail Gorbachev (in the same newspaper) was almost immediate:

"Over the past 15 years, the goal of the elimination of nuclear weapons has been so much on the back burner that it will take a true political breakthrough and a major intellectual effort to achieve success in this endeavor. It will be a challenge to the current generation of leaders, a test of their maturity and ability to act that they must not fail. It is our duty to help them to meet this challenge."

William J. PERRY

Professor, Stanford University

(Former Secretary of the U.S. Department of Defense)

At the peak of the Cold War, the great Russian physicist, Andrei Sakharov, wrote a letter to my Stanford colleague, Sid Drell, in which he said: "Reducing the risk of annihilating humanity in a nuclear war must carry an absolute priority over all other considerations." And so it did throughout the Cold War. The principal way of reducing that terrible risk was establishing deterrence, which came to be called Mutual Assured Deterrence, or MAD. And I was one of the Americans who worked during the Cold War to strengthen our deterrence. But even if all of the systems of deterrence were in place, there still remained two existential dangers: the danger of a nuclear war starting by accident; and the danger of a nuclear war starting by miscalculation.

Today we have heard cogent analyses on how nuclear weapons still pose a risk today, even with the Cold War behind us, and we have heard serious proposals on what might be done to reduce that risk. In a 20-minute after-dinner speech, I would not presume to add to those analyses. Instead I will share with you some of my personal experiences with the nuclear danger during the Cold War, and what I am doing now to help reduce that danger.

And I will start by telling you of two incidents that I personally experienced during the Cold War that dramatically illustrate just how close we came to a nuclear catastrophe.

In 1962 I was working for a California defense electronics company, and I occasionally served as a scientific consultant on Soviet missile programs. In September of that year I got a call from Dr. Albert Wheelon, who had been a classmate of mine at Stanford, and who was at that time the Deputy Director for Science and Technology at the CIA. He asked me if I could come back to Washington to consult with him on a technical problem. I told him that I could arrange to come back the following Monday. He said "No, you don't understand. I need to talk to you right away." So I flew back on the night flight and met with him at eight o'clock the next morning. I was stunned when he showed me pictures that had been taken by U-2s that showed an extensive deployment of Soviet missiles underway in Cuba. He asked me to stay on and help him analyze the deployment as it proceeded. So for the next twelve days I went to the CIA's analysis facility every day at noon, and worked as part of a small team that analyzed the pictures that had been taken that morning over Cuba. Shortly after midnight each day we finished our analysis and briefed Dr. Wheelon. The next morning at seven he would brief President Kennedy who would use that information as the basis for his decisions that day. Each day I came in to the analysis center I believed it would be my last day on earth, and, to this day, I still believe that we avoided a nuclear war as much by good luck as by good management.

Now fast forward sixteen years to 1978. At that time I was in government, as the Under Secretary of Defense of Research and Engineering. At 3 AM I received a phone call from the General who was the watch officer at the NORAD command. He told me that his computers were showing that 200 missiles were on the way from the Soviet Union to the United States. I immediately woke up! This was of course a false alarm, but the general had had only 15 minutes to recognize it as such. He was calling me in hopes that I could help him figure out what had gone wrong so that he would have good answers when he briefed the president the next morning. That was one of three false alarms that I am personally aware of, each of which was caused by human error or equipment malfunction, but each of which

was detected before a retaliatory response was launched. I don't know how many such false alarms occurred in the Soviet Union during that period---perhaps some of our Russian colleagues here can share stories of the false alarms they experienced. But again, I believe that a nuclear war was avoided as much by good luck as by good management.

As those stories make clear, the risk that humanity would be annihilated in a nuclear war was never academic to me. Indeed, I lived face to face with that risk for the entire duration of the Cold War, and it made a profound impression on me, which endures to this day.

But now, of course, the Cold War is over, and the whole world breathes easier. The ending of the Cold War brought about enormous geopolitical changes, most of which were good, and a few that were not so good. But it did bring about one positive change of enormous importance: it did reduce to essentially zero the danger of a nuclear war resulting from miscalculation. There still exists, however, the danger of a nuclear war starting by accident. Both American and Russian missiles are still configured to launch with as little as fifteen minutes warning. And the inherent danger of this status is aggravated by the fact that the Russian warning system has deteriorated since the ending of the Cold War.

But the greatest danger today is that a terror group will detonate a nuclear bomb in one of our cities. Graham Allison, in his seminal book "Nuclear Terrorism", gives compelling evidence that al-Qaeda and other terror groups are trying to get nuclear weapons and he argues that if they get one, they will use it with devastating results. Of course, a nuclear detonation in one of our cities would not be equivalent to a nuclear exchange during the Cold War, which could have led to the extinction of civilization. But even a primitive nuclear bomb could result in more than a hundred thousand deaths. The direct economic losses from the detonation would be hundreds of billions of dollars, but the indirect economic impact would be even greater, as worldwide financial markets collapsed in a way that would make the market setback after 9-11 seem mild. And the social and political effects are incalculable, especially if the nuclear bomb were to be detonated in Washington or Moscow, disabling a significant part of the government residing there.

Last month my colleague, Ash Carter, and I sponsored a workshop in Washington to assess how our country would react to an act of nuclear terrorism in one of our cities. We called this workshop "The Day After". The conclusions can be summed up as follows: All experts at the meeting agreed that there was a real probability of such an event occurring in the next few years. All agreed that the results would be catastrophic, with the catastrophe extending well beyond the 100,000 deaths. All agreed that the level of catastrophe could be mitigated by prior planning, but that such planning had not been done. And all agreed that our priority ought to be on preventing such a catastrophe.

This is a grim picture, but many console themselves by concluding that it is very unlikely. Allison, on the other hand, argues that on our present course there is a 50-50 chance that during this decade a terrorist will set off a nuclear bomb in one of our cities. I cannot validate that number, but I do not think that Allison is being alarmist. Indeed, I believe that if the American government and the Russian government stay on their present course, we are heading for an unprecedented disaster. The present programs for dealing with the nuclear threat may be summed up as ballistic missile defense (BMD), the Proliferation Security Initiative (PSI), and increasing our dependence on nuclear weapons.

The centerpiece of the American government's strategy for dealing with a nuclear attack is the deployment of ballistic missile defense systems in Alaska and the planned deployment in Europe. And Russia still operates the ballistic missile defense system deployed around Moscow during the Cold War. Ballistic missile defense systems have been criticized for being relatively ineffective, and I agree with that criticism. But that is almost beside the point. Even if a ballistic missile defense system worked exactly according to its specifications, it is simply irrelevant to the threat of nuclear terrorism. Terrorists would not use a ballistic missile to deliver their bomb; they would use a truck or a freighter.

The Proliferation Security Initiative was established a few years ago as a cooperative international program to interdict nuclear weapons or material being illegally transferred. This is a useful program in many respects, but we should never believe that it is likely to be successful in preventing a

nuclear power from smuggling a bomb to a terror group. A so-called "tactical" bomb could be put in a suitcase. The plutonium needed to make a bomb as destructive as the Hiroshima bomb is about the size of a grapefruit. There is no interdiction system that exists or that is conceivable that would have a good probability of stopping a clever smuggler from transferring either of these.

If we believe that nuclear terrorism is the major threat facing us, we should be focused on preventive programs: to reduce/protect existing nuclear arsenals; and to keep new arsenals from being created.

During my tenure as Secretary of Defense, I made reducing and protecting nuclear arsenals my top priority, using a program that had been created by two visionary senators, Sam Nunn and Dick Lugar. Our greatest success with the Nunn-Lugar program was a cooperative program with Russia by which we succeeded in getting Ukraine, Kazakhstan, and Belarus to give up all of their nuclear weapons. To put that in perspective, I need to remind you that at the time we started this program, Ukraine was the third largest nuclear power in the world, with more nuclear weapons than China, England and France combined.

To oversee the application of the Nunn-Lugar program, I made four successive visits to Pervomaysk, Ukraine, which was perhaps the largest and most modern of the ICBM sites in the former Soviet Union, with seven hundred nuclear warheads. During my first visit to Pervomaysk, I was taken to the launch control facility and introduced to the two young duty officers, who decided to do a traditional "show and tell". They showed me their communication equipment, and then proceeded into a practice launch sequence, stopping, of course, just short of the launch command. Never has the stark horror of the Cold War been more real to me than at that moment. After the countdown, I was taken to one of the SS-19 missile silos that were based at Pervomaysk. The lid had been opened so that we could see that the six warheads had been removed from that missile.

On my second visit, a year later, I witnessed the removal of that missile for dismantlement. On my third visit, another year later, I joined the Ukrainian Defense Minister and the Russian Defense Minister in blowing up that missile silo. My fourth and last visit to Pervomaysk was on a beautiful fall

day in 1996, joined again by the Russian and Ukrainian Ministers. Together we went to the site where the missile silo had previously been, and planted sunflowers. Today Ukraine is nuclear weapons-free, and its deadly missile field has become a productive sunflower field.

My first visit to Pervomaysk symbolized the "balance of terror" that characterized the Cold War. My last visit to Pervomaysk symbolized the end of that terror, and the planting of seeds for a lasting peace.

These efforts, a result of close cooperation between the American and Russian governments, led to the dismantlement of more than 10,000 nuclear weapons and their launchers, and made us all safer. But today it is hard to imagine our two governments cooperating in such a manner; moreover, neither the Bush administration, nor the Putin administration, has put a high priority on reducing and protecting nuclear arsenals. Their efforts have been hobbled by a conflicting priority to modernize their nuclear arsenals. The U.S. has focused on bunker busters, while the Russians are building a new generation of ICBMs. Whatever value these new nuclear weapons might have, and I believe that their value is minimal, they have tended to undermine the position of the U.S. and Russia in arguing for nuclear restraint on the part of other nations.

We also need to do everything we reasonably can to keep new arsenals from being created. The Americans and the other members of the 6-party talks have failed badly with North Korea. Since these talks started, North Korea has built 6 to 10 nuclear bombs, has tested one of them, and has tested at least 5 ballistic missiles. And the EU and Russia have had no better success in restraining Iran's nuclear program.

I will close tonight by telling you of a new initiative to deal with the danger from nuclear weapons by the most fundamental approach---eliminating nuclear weapons. Last September, on the 20th anniversary of the Reykjavik summit, we held a conference at Stanford to see what lessons could be learned from that remarkable meeting, where Presidents Reagan and Gorbachev seriously discussed the prospect of eliminating nuclear weapons and their delivery means. In the end, they were not able to reach agreement on the major steps they were discussing, and the Reykjavik meeting is considered by many to have been a failure. At our Stanford meeting, we

concluded that the nuclear vision pursued by Reagan and Gorbachev at Reykjavik was valid and should be revived. And we laid out a step-by step program of moving towards that vision. We put together the main ideas that came out of our meeting in an op-ed that was published by the Wall Street Journal. This op-ed was signed by George Shultz, Henry Kissinger, Sam Nunn and me, all of whom had played a major role in the building of nuclear weapons during the Cold War. It was followed in a few days by another op-ed from Gorbachev who essentially endorsed the views we expressed. This op-ed has received a huge and generally positive response, not because its ideas were new; indeed most of the ideas in the op-ed have been advanced before, most recently by Hans Blix and the International Commission on Weapons of Mass Destruction. Our op-ed received so much attention because these ideas were being expressed by four cold warriors, and because it laid out a concrete program for moving towards its goal. But of the widespread response we got to our op-ed, I have come to believe that the elimination of nuclear weapons is an idea whose time has finally come.

Of course, we understood that it might be many decades before that nuclear vision is realized or even approximated. And until that happens, we should focus on the steps outlined to reduce their danger, or to use the words of Sakharov, to reduce the risk of annihilating humanity. We will follow up on our Stanford meeting by another meeting this October whose focus will be on how the U.S. can carry out those steps, followed by an international meeting that focuses on the actions required of other nations. For while it is necessary for the U.S. to carry out these steps, it is certainly not sufficient. Russia must also see the danger of nuclear weapons, and play a leadership role in eliminating them; and many other nations, all of them represented at this conference, also have important roles to play.

I opened my talk by quoting Andrei Sakharov on the existential danger of nuclear weapons. I will close by quoting Elie Wiesel to remind us of who is responsible for ending that danger. "Mankind must remember" he wrote, "that peace is not God's gift to his creatures; Peace is our gift to each other." That is, if we want to end the existential threat that nuclear weapons pose to our civilization, we should not be waiting for divine intervention. We ourselves must take the necessary actions.



SESSION 6



Chairman –
Catherine KELLEHER

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The Issue of Withdrawal from the NPT

Alexei ARBATOV,

Corresponding Member (RAS)

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One of the greatest paradoxes of the Nuclear Non-Proliferation Treaty is linked to its own provisions. Article X.1 of the Treaty states that "Each Party shall in exercising its national sovereignty have the right to withdraw from the Treaty if it decides that extraordinary events, related to the subject matter of this Treaty, have jeopardized the supreme interests of its country. It shall give notice of such withdrawal to all other Parties to the Treaty and to the United Nations Security Council three months in advance. Such notice shall include a statement of the extraordinary events it regards as having jeopardized its supreme interests".¹

After the Treaty came into force in 1970, efforts to strengthen the non-proliferation regime concentrated on increasing the number of states party to the Treaty and making IAEA safeguards and the export controls system for supplies of nuclear materials and technology more effective. But after the 1990s, when the accession of new countries en-masse had turned the NPT into a near-universal agreement, the problem of withdrawing from the

¹ Yadernoye nerasprostraneniye /Edited by V. A. Orlov. — M.: PIR-Center, 2002. — Volume 2. — p. 28.

Treaty came to the forefront of international security. Four countries currently outside the Treaty are all already in possession of nuclear weapons (Israel, India, Pakistan, and North Korea). The threat of further proliferation of nuclear weapons can therefore arise only through the secret development of nuclear weapons in violation of the Treaty and/or a decision by current non-nuclear-weapons states party to the Treaty to withdraw from it and openly obtain nuclear weapons.²

This also applies indirectly to the threat of nuclear terrorism, as the likelihood of terrorists gaining access to nuclear explosive devices or materials will increase exponentially as the number of countries possessing nuclear weapons grows, especially if these countries are governed by authoritarian regimes with a radical ideology. The precedent set by North Korea in this respect is highly symptomatic and very dangerous and therefore prompted such wary attitudes towards Iran's nuclear program and toward the prospective programs of a whole number of non-nuclear-weapons states that are parties to the NPT.

True, North Korea, it seems, carried out secret activities in violation of the NPT before it openly withdrew from the Treaty, while Iran is suspected of past activities that run counter to IAEA safeguards,³ while staying an NPT member-state. However, theoretically, states can openly and legitimately withdraw from the NPT by giving three months advance notice in accordance with Article X.1, without committing any violations of the Treaty's provisions and having acquired in advance within its framework and with its assistance a high potential in nuclear materials, technology and expertise.

The right to withdraw from the NPT, like the right to withdraw from any other agreement, in particular in the area of disarmament, is an inalienable part of the state sovereignty of any party to the agreement. Any attempts to limit this right, such as the Soviet Union's proposals in the mid-1980s to conclude an agreement with the U.S. on renouncing the right to withdraw

2 Danger could also come from new future states if they decide to acquire nuclear weapons, but an examination of this category is beyond the scope of the present work.

3 See: *Yadernoye rasprostraneniye v Severo-Vostochnoy Azii* / Edited by A. Arbatov and V. Mikheyev; Carnegie Moscow Center. — M., 2005; *Ugrozy nerasprostraneniyyu yadernogo oruzhiya na Blizhnem i Srednem Vostoke* / Edited by A. Arbatov and V. Naumkin; Carnegie Moscow Center. — M., 2005.

from the Anti-Ballistic Missile Treaty for a certain period, are legally absurd and politically unacceptable. Treaties of this kind cite "threats jeopardizing a country's supreme interests" as grounds for withdrawal, and it would be absurd to demand that states renounce this right even if faced with the emergence of just such a major threat. Moreover, attempts to limit states' right of withdrawal in spite of the NPT provisions could produce quite the opposite result and cause the Treaty to collapse altogether. The 188 states-party to the NPT joined it, after all, on the basis of the totality of its provisions, including Article X.1 on the right of withdrawal, and retrospective attempts to change one of the most important clauses could destroy the entire package of provisions.

But withdrawal from the NPT — the world's principal nuclear disarmament agreement today — cannot be viewed as a trivial, routine and completely arbitrary act. According to the wording of Article X.1, it is a decision made based on serious motives and subject to certain procedures. Most importantly, the logic contained in the Treaty's subject matter itself gives rise to several crucial conditions.⁴

First, it is unacceptable for a state to benefit from peaceful nuclear cooperation through the Treaty and then withdraw from the Treaty and use the benefits it has obtained for military purposes.

Second, it is unacceptable for a state to withdraw from the Treaty in order to conceal violations of the Treaty committed while it was still its party.

Third, the motives a state gives for withdrawing from the Treaty should under no circumstance be seen as a mere formality; they should conform to the spirit and letter of the Treaty's provisions and serve as the criteria for evaluating the real reasons for a state's decision to withdraw and its intentions, and for defining the appropriate measures the international community will take in response.

Fourth, examination of the conformity of the motives for withdrawal to the provisions of Article X.1 should be carried out by the other parties to the NPT and by the UN Security Council, and not by one or several states

⁴ Some of these principles have been examined in an article by two of the world's foremost specialists in this area, J. Bann and R. Timerbayev. see: Bann J., Timerbayev R. *Pravo vykhoda iz DNYaO — mneniye dvukh uchastnikov peregovorov po vyработке Dogovora // Yader. kontrol.. — 2005. — Number 3.*

on their own initiative.

Fifth, establishing violations of the Treaty is the exclusive prerogative of the IAEA and not of any particular country. This also applies to additional verification of possible earlier violations of the NPT should a country announce its decision to withdraw from the Treaty.

Finally, the decision to consider the validity of a country's motives for withdrawing from the NPT, and the decision to impose sanctions or use of military force (in the case of an unjustified withdrawal or detection by the IAEA of past secret violations of the Treaty) are exclusively within the competence of the UN Security Council. It is not without reason that the Security Council members stated in 1992 that the proliferation of WMD constitutes a "threat to international peace and security in the sense of the Charter of the United Nations."⁵

The issue of motives for leaving the NPT was discussed at the NPT Review Conference of 2005. Many participants, including Russia and a number of Western countries, advocated a stricter approach to evaluating declared motives' conformity with the spirit and letter of Article X.1. It is interesting to note that the USA, on the contrary, defended the "sovereign right" to withdraw whatever the grounds.⁶ This was clearly an attempt to escape criticism for denouncing the ABM Treaty in 2002.

This was yet another example of the great powers weakening the NPT by not fulfilling their nuclear disarmament obligations in accordance with Article VI of the Treaty. On a broader level, the destructive consequences of attempts to break the link between the Treaty and disarmament issues were evident in the complete fiasco of the 2005 NPT Review Conference. This fiasco was a result of the United States' firm refusal to discuss nuclear disarmament in the spirit of decisions adopted by the NPT conferences of 1995 and 2000. As will be discussed below, this prevented a number of important decisions proposed at the 2005 conference from being approved, including decisions on the issues of withdrawal from the Treaty.

In 2004, twelve influential former world leaders appointed by the UN Secretary General to form the High-Level Group on Threats, Challenges

⁵ Quoted from: Bann J., Timerbayev R. Op. cit. — p. 41.

⁶ Bann J., Timerbayev R. Op. cit. — p. 42.

and Change, presented a report proposing that the Security Council call countries withdrawing from the NPT to account for violations committed while they were party to the Treaty. In the Group's view, a country's notification of withdrawal from the NPT should be immediately followed by verification of its compliance with the Treaty in the past and, if necessary, by Security Council sanctions. A year later, at the NPT Review Conference in 2005, what amounted to these same proposals were put forward by the U.S., the European Union, Japan, Australia and New Zealand. Russia's position was vaguer — it spoke in favor of increasing countries' responsibility for the decision to withdraw in accordance with Article X and supported the adoption of a number of political measures and procedures, but opposed what it called "revising" the Treaty's provisions.⁷

Various measures have been proposed to ensure that peaceful nuclear activity is not diverted for military purposes. At the NPT Review Conference in 2005, for example, the European Union and a number of other countries proposed adopting a rule whereby a country withdrawing from the NPT would be obligated to continue using all the materials and technology created for the pursuit of its peaceful nuclear activities while party to the Treaty exclusively for peaceful purposes and under continued IAEA safeguards after leaving the Treaty. It was proposed that an even tougher line should be taken with respect to all materials and technology obtained from external sources thanks to a country's participation in the NPT. Under the proposed line, a country withdrawing from the NPT would be obliged under threat of UN Security Council sanctions to freeze such materials and technology for subsequent dismantlement or return them to the suppliers under IAEA control.⁸ The failure of the 2005 conference meant that these proposals, like others, were not implemented.

Implementing these measures in practice, even those on maintaining materials and technologies under IAEA safeguards, involves great difficulties. As the North Korean experience shows, if a country does not fear sanctions, even military actions, it can expel IAEA inspectors at any moment, along with their equipment, all the more so if the country in question can

⁷ Ibid. — p. 44.

⁸ Ibid. — p. 44.

manufacture a nuclear weapon or nuclear explosive device, or give an impression of possessing one. From this point of view, measures to dismantle and return materials and technology, especially of dual-use nature (usable in uranium enrichment or plutonium extraction) are more effective, and it is these measures that should be implemented immediately following a country's withdrawal from the NPT, without giving it the time to manufacture a nuclear weapon. The expansion of IAEA safeguards in non-nuclear-weapons states is supposed to lengthen as much as possible the interval between a country's hypothetical withdrawal from the NPT and its production of a nuclear weapon, and to reliably exclude the possibility of a country carrying out a secret nuclear weapons development program before withdrawing from the NPT.

But this toughest measure of dismantling and returning technology and materials raises huge legal, financial and technical problems: compensation for materials and technology acquired and paid for under contract, the removal of fuel and the dismantling of reactors and other facilities.⁹ The issue of dismantling materials and technology developed independently or acquired outside the NPT context poses even greater political and legal problems. More importantly, without the agreement of the country in question, the only way to actually carry out these measures would be through military occupation. But military occupation (which one can assume would have to be preceded by military action against the country in question) is also likely to involve changing the country's political regime, after which it would be easy to ensure the country's return to the NPT, which would in itself remove the issue of dismantling and returning materials and technology from the agenda.

Finding a solution based on international law and common sense to this issue, as well as to other issues related to maintaining and strengthening the non-proliferation regime, requires a comprehensive approach and coordinated policy from the great powers, all the states-party to the NPT, the UN Security Council, the IAEA, and other institutions and organizations. Based on an analysis of the history of the North Korean and Iranian cases,

⁹ Universal Compliance: A Strategy for Nuclear Security /Carnegie Endowment for International Peace, Washington, USA, 2004.

we can formulate the following main proposals:

- Developing IAEA safeguards and making the 1997 Additional Protocol universal should reliably prevent secret violations of the NPT and thereby exclude a country's withdrawal from the Treaty in order to conceal past violations.
- A country's announcement of its intention to withdraw from the NPT should provide the grounds for (1) intensive verifications by the IAEA to detect possible past violations of the Treaty or the safeguards agreement; (2) convening an extraordinary conference of the states-party to the NPT to examine the motives for withdrawal from the Treaty; (3) in the event that the motives given be deemed not to conform to Article X.1 and/or that the problem cannot be resolved without withdrawal from the NPT, the immediate referral of the case to the Security Council for examination pursuant to Article 41, Chapter VI of the UN Charter.
- Obstructing IAEA verifications and non-compliance with the notification period stipulated for withdrawal from the NPT should immediately become the object of a Security Council decision on sanctions.
- All materials and technology in the country in question at the moment of its withdrawal from the NPT, regardless of their origin, should be used exclusively for peaceful purposes and remain under IAEA safeguards.
- All dual-use technology and materials (uranium enrichment, plutonium separation), acquired from external sources or developed independently while the country was party to the NPT should be immediately frozen and subsequently dismantled or returned to the suppliers under IAEA supervision. This applies all the more to materials and technology obtained over the given period from external sources outside the framework of the NPT, i. e., in violation of the NPT and IAEA safeguards.
- Refusal to fulfill the last two conditions should lead to a Security Council decision on sanctions in the context of Article 41, Chapter VII of the UN Charter, and if need be to a military action in line with Article 42.

It is clear that even these radical measures do not provide full guarantees against withdrawal from the Treaty, but they can be a quite effective means of dissuading countries from taking this step and lessening its consequences for international security. Clearly, these conditions would have

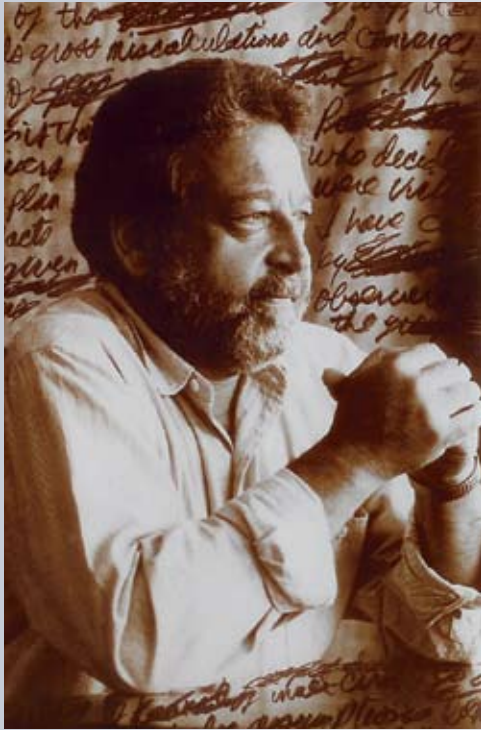
to be given legitimacy through decisions adopted by the states-party to the NPT and provisions in international law adopted by the United Nations.

The Zangger Committee, for example, could approve a full list of technology, components and units that are key components of dual-use production. The NSG, for its part, could make dismantling and return in the event of withdrawal from the NPT a mandatory condition in any future contracts for the supply of the corresponding technology pursuant to Article IV of the Treaty. Because laws cannot be retroactive, this would not apply to non-nuclear-weapon states that already have a full nuclear cycle, but it would be desirable for them to adopt a politically binding declaration in this spirit.

Finally, it is clear that these measures can be implemented only if there is unity between the great powers and the UN Security Council members, and this is possible only if they make nuclear non-proliferation the paramount priority of their international security strategy. Moreover, the strong moral and political position of the great powers and their cooperation with the majority of NPT non-nuclear-weapons states depend also on the implementation by the nuclear powers of their commitment to make consistent progress towards nuclear disarmament under Article VI of the Treaty.



SESSION 7



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Counter-Proliferation and the Role of the UN Security Council

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Abstract

This paper seeks to trace the origins of the concept and strategy of Counter-proliferation from within the U.S. Department of Defense during the Clinton Administration, through to its development, after 9/11, into a global strategy in the counter-terrorism context implemented both through the UN Security Council and outside it, such as through the Proliferation Security Initiative (PSI). Some major powers, who themselves maintain nuclear arsenals, have viewed traditional methods of containing and reversing the spread of WMD possession to other states and non-state actors as ineffective. They have, therefore, opted for a more aggressive non-proliferation campaign backed by military means and the international legitimacy of the Security Council through the January 1992 Presidential Statement and Resolution 1540. The sustainability of this policy, after the disproving of the WMD rationale for the 2003 invasion of Iraq, and its difficult implementation in the face of complex issues like the DPRK and Iran, is examined. The

paper concludes with some recommendations for the international community.

The Origins of Counter-proliferation

The expansion of the number of nation states likely to possess weapons of mass destruction (WMD) — that is, nuclear, biological and chemical weapons — through non-compliance with the existing treaty regimes has been perceived as a grave threat to international peace and security for almost two decades. It compounds an already serious threat posed by the existing arsenals of nuclear weapons, estimated at 27,000, among the acknowledged five nuclear weapon states within the Treaty for the Non-proliferation of Nuclear Weapons (NPT) and the three outside the NPT, and the absence of any serious nuclear disarmament. Additionally, since September 11, 2001, when the diabolically awesome power and global reach of non-state actors was demonstrated in the attacks on targets in the USA, the international community has been preoccupied with the danger of WMD proliferation to non-state actors pursuing terrorist strategies and goals.

The cumulative effect of these threats is to increase the risk of the actual use of WMD significantly and render the Cold War rationale of deterrence irrelevant. The traditional constraints of a co-operative, rule-based world order are political and legal. Thus, the barriers against WMD proliferation have been the treaty regimes of the NPT, the Biological Weapons Convention (BWC), the Chemical Weapons Convention (CWC) and, to a lesser extent, the Comprehensive Nuclear-Test-Ban Treaty (CTBT) which has still not entered into force but remains an influential norm. These barriers have weaknesses:

- the lack of universality of treaty regimes;
- the right of sovereign states to withdraw from treaties as the Democratic People's Republic of Korea (DPRK) withdrew from the NPT;
- the lack or inadequacy of verification of compliance with treaties;
- actual instances of non-compliance as with Iraq, Libya and the DPRK with respect to the NPT and continuing concerns over Iran's compliance with the safeguards agreement it signed with the IAEA and, finally,

- the absence of enforcement mechanisms.

In addition to global treaty regimes, export control regimes, both national and plurilateral, have been in operation for several years, together with technology denial regimes, which ensure that dual technology is not freely available. The lack of universality and the inadequate enforcement measures have exposed their limitations. The A. Q. Khan network of clandestine sales of nuclear technology and expertise illustrated clearly that a black-market existed despite export control regimes.

Another constraint against proliferation is the Cooperative Threat Reduction (CTR) program originating in the Nunn-Lugar legislation in the US Senate. In the immediate aftermath of the end of the Cold War and the dissolution of the USSR there was a fear of "loose nukes". Thus, the U.S. legislation provided incentives to Russian nuclear scientists after the end of the Cold War so as to prevent their services being procured, together with funding for the safeguarding of nuclear materials and technology against theft. Despite enhanced financing of the CTR by the G8 countries, there can be no assurances that leakage does not take place.

The frailty of the treaty and export control regimes as an effective barrier against proliferation and sanctions as a penalty has led some states to look for other means that are more result-oriented. At an early stage the trend was towards ad hoc measures such as the negotiation and adoption of the Additional Protocol by the IAEA when Iraq was discovered, after the first Gulf War, to be in non-compliance with its NPT obligations. Still later when the DPRK's non-compliance was reported to the Security Council, the Agreed Framework was negotiated outside the Security Council. Finally, when India and Pakistan detonated nuclear devices in 1998, Security Council Resolution 1172 was adopted. The condemnation and hortatory language contained in it have now been ignored and a nuclear cooperation agreement between the U.S. and India is about to be concluded. This inconsistency exposes the conflicting demands of realpolitik versus adherence to the norm of non-proliferation and misguided efforts to draw distinctions between "good proliferators" like India and "bad proliferators" like the DPRK. Proliferators like South Africa actually destroyed their nuclear devices to join the NPT as a non-nuclear-weapon state. Belarus, Kazakhstan

and Ukraine sent back the nuclear weapons on their territory to Russia and affirmed their non-nuclear weapon status under the Lisbon Protocol.¹

Despite all this, a more aggressive effort to contain proliferation has been advocated even if it was for selective application. In the UN context, the justification for this was the 31 January 1992 Security Council Presidential Statement after a summit level meeting which stated that "the proliferation of all weapons of mass destruction constitutes a threat to international peace and security."² Ironically it is the "proliferation" of WMD that is considered a threat and not the WMD per se! This set the stage for Security Council action under Chapter 7 to punish proliferators as and when necessary, although achieving consensus among the permanent five would not be easy.

Counter-proliferation represents the most aggressive policy of containing proliferation. It was adopted by Israel when it bombed Iraq's Osirak reactor in 1981 and gradually entered U.S. policy where a readiness to use armed force to prevent proliferation becoming a threat to U.S. interests emerged. The culmination of this policy was in 2003 when the U.S. with a group of allies invaded Iraq on the basis that the Iraqi regime had WMD. This action, without Security Council approval, has been the subject of fierce controversy especially after it was revealed that no WMD existed in Iraq at the time. Counter-proliferation as a policy against nation states must, however, be distinguished from a similar policy against non-state actors.

The concept of aggressive counter-measures against proliferation originated in the administration of President George H. W. Bush. However, the actual use of the term "counterproliferation" began in the U.S. Department of Defense (USDOD) during the first Clinton Presidency to describe the enforcement of non-proliferation by military means where proliferation threatened the security interests of the U.S. This policy was crafted by Defense Secretary Les Aspin as a response to the challenge of proliferation. The book "Preventive Defense," co-authored by William Perry and Ashton Carter, both of whom were in the USDOD at the time, provides the rationale for counter-proliferation measures.³ In a *Washington Post* op-ed article on

1 Protocol to the Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Reduction and Limitation of Strategic Offensive Arms, signed at Lisbon on May 23, 1992.

2 "Note by the President of the Security Council", 31 January 1992, UN Doc. S/23500.

3 Ashton B. Carter and William J. Perry, *Preventive Defense: A New Security Strategy for America* (Washington,

June 22, 2006 the two authors called for a pre-emptive strike against the Taepodong missile launch pad in the DPRK.⁴

Counter-Proliferation in the Post 9/11 Context

The terrorist attacks of September 11, 2001 in the U.S. are indisputably a watershed in global terrorism and political violence. They shocked the world into a realization, *inter alia*, that the tragedy could have been infinitely worse had WMD been used. WMD terrorism predated 9/11 and the 1995 use of sarin gas in the Tokyo subway was one example. Evidence has surfaced of groups such as al-Qaeda seeking WMD. Counter-proliferation as a strategy against nation-states began to be adopted more vigorously as a policy against non-state actors and those states that gave them shelter and support. The administration of U.S. President George W. Bush, already pursuing a neo-conservative hawkish agenda, seized upon this opportunity.

1. The National Security Strategy of 17 September 2002⁵ — provided for counterproliferation and pre-emptive strikes in disregard of the conventional interpretation of the right to self-defense contained in Article 51 of the UN Charter. It stated specifically: "Our comprehensive strategy to combat WMD includes:

- Proactive counterproliferation efforts. We must deter and defend against the threat before it is unleashed. We must ensure that key capabilities — detection, active and passive defenses, and counterforce capabilities — are integrated into our defense transformation and our homeland security systems. Counterproliferation must also be integrated into the doctrine, training, and equipping of our forces and those of our allies to ensure that we can prevail in any conflict with WMD-armed adversaries." Later on it continued "To forestall or prevent such hostile acts by our adversaries, the United States will, if necessary, act preemptively." The Bush Administration strategy rested on three pillars:

D.C.: Brookings Institution Press, 1999).

4 Ashton B. Carter and William J. Perry, "If Necessary, Strike and Destroy: North Korea cannot be allowed to test this missile," *The Washington Post*, June 22, 2006.

5 The National Security Strategy of the United States of America, The White House, Washington, D.C., 17 September 2002.

- prevention involving efforts to keep WMD and related materials and delivery systems from terrorists or so-called "rogue" states;
- protection or counterproliferation measures with capabilities to deter, detect, defend against and defeat WMD already possessed by terrorists or "rogue" states;
- consequence management — meaning the reduction of as much or as many consequences of WMD attacks at home or abroad as possible.

In 1998, the Clinton Administration had bombed the al-Shifa pharmaceutical factory in Sudan on the dubious grounds that it was linked with terrorists. After 9/11 the hunt for signs of WMD terrorism was intensified. The "war on terrorism" launched by the U.S. had counter-proliferation as an important component. In the same way as human rights became a casualty in the assault on terrorists, international law was also ignored, or re-interpreted, in the pursuit of counterproliferation after 9/11. Apart from the international legal arguments, in an article entitled "Preemption Paradox" in the July/August 2006 issue of *the Bulletin of the Atomic Scientists*, Bennett Ramberg analyzes why the example of Osirak was not repeated and concludes that "surgical military strikes can only buy time" and that "pre-emption is no easy solution."⁶

2. The Proliferation Security Initiative (PSI) — was one pro-active response to combating the proliferation of WMD both by states and by non-state actors. It was also aimed at both suppliers and recipients of illicit WMD materials and their delivery systems. The PSI was conceived and pursued outside the framework of the UN. It was formally launched in a speech in Krakow, Poland, in May 2003 by President Bush. Initially driven by 11 countries it was expanded to include many more, including Russia and developing countries like Libya. The Statement of Interdiction Principles⁷ clearly empowers states to use their national resources to interdict and seize, by force if necessary, shipments of goods believed to be part of illicit WMD programs. The PSI was initially greeted with skepticism. Its inconsistency with international law, lack of transparency, extra-UN location, lack of a treaty base and selective application driven by political pre-

⁶ Bennett Ramberg, "Preemption Paradox", *Bulletin of the Atomic Scientists*, Vol. 62, No. 4, July/August 2006.

⁷ See "Fact Sheet, Proliferation Security Initiative, Statement of Interdiction Principles," Office of the Press Secretary, The White House, Washington, D.C., September 4, 2003.

dilections were among the concerns expressed. A Congressional Research document of October 1, 2003 expressed doubts that current international law provided the authority for action contemplated under the PSI.⁸ The expansion of the participants in the PSI and the fact that promises have been made to ensure that its implementation will be consistent with international law have greatly reduced the initial skepticism concerning this counterproliferation initiative. China remains outside the PSI, along with several other countries. It remains an example of how counterproliferation and counterterrorism have been amalgamated in a robust plurilateral initiative. We have, however, still to see evidence of its successful implementation. It has been suggested that the PSI could implement the commitments of countries under Security Council Resolution 1540.⁹

3. The UN — While counterproliferation remains identified as a unilateral measure or one that is implemented by a “coalition of the willing”, the UN, with its aura of legitimacy and universality, has also moved to act more purposefully against the threat of WMD terrorism. A policy-working group within the UN Secretariat submitted its report in June 2002 with general recommendations on how the UN could combat terrorism.¹⁰ Specifically on WMD terrorism, it recommended:

- strengthening the technical capabilities of the IAEA, the OPCW and the WHO to provide assistance to states in the event of the use of WMD;
- arrangements to develop and maintain adequate civil defense capabilities;
- the creation of codes of conduct for scientists aimed at preventing their involvement in terrorist activities and the restriction of public access to expertise on the development, production, stockpiling and use of WMD.

Significantly, there were no robust measures similar to counterproliferation that were recommended.

In the General Assembly, which had unanimously condemned the 9/11

8 Jennifer K. Elsea, “Weapons of Mass Destruction Counterproliferation: Legal Issues for Ships and Aircraft,” CRS Report for Congress, Congressional Research Service, Washington, D.C., October 1, 2003.

9 Operative paragraph 10 of the Security Council resolution provides that (the Security Council) calls upon all States, in accordance with their national legal authorities and legislation and consistent with international law, to take cooperative action to prevent illicit trafficking of nuclear, chemical or biological weapons, their means of delivery and related materials. UN Doc. S/RES/1540 (2004).

10 “Report of the Policy Working Group on the United Nations and Terrorism,” UN Doc. Annex to A/57/273 and S/2002/875.

attacks, action on defining terrorism continued to be the subject of debate. The High Level Panel, appointed by the Secretary-General to assess current threats to international peace and security, addressed the issue of WMD proliferation and terrorism in paragraphs 135-138 of its report.¹¹ Again, the recommendations made avoided any reference to counter-proliferation or similar robust measures. The Secretary-General in his report of March 2005 warned of "catastrophic terrorism" and recommended a series of measures including the conclusion of an international convention for the suppression of nuclear terrorism.¹² This was finally accomplished on 13 April 2005 when the General Assembly adopted an international treaty against nuclear terrorism by consensus. In June 2005 a Counter-terrorism Implementation Task Force was established with a view to enhancing coordination with various UN entities and beyond, and 24 entities are represented as of May 2007.

The General Assembly's 2005 World Summit Outcome Document, while failing to agree on disarmament issues, strongly condemned terrorism as "one of the most serious threats to international peace and security."¹³ At the same time, it recognized that "international cooperation to fight terrorism must be conducted in conformity with international law." Another section of the Outcome Document, relevant to our discussion on counterproliferation, is the conclusion on the use of force under the Charter, which basically reiterated Article 2.4 of the Charter. More importantly, the Document states that "the relevant provisions of the Charter are sufficient to address the full range of threats to international peace and security." Consequently no expansion of the powers of the UN was considered necessary to combat either WMD proliferation or WMD terrorism or both.

In September 2006, the General Assembly, in its resolution A/60/288, formally adopted a Counter- terrorism Strategy for the UN. The Plan of Action annexed to the resolution has many aspects relevant to the potential use of WMD by terrorists. Specifically —

11 "A More Secure World: Our Shared Responsibility," Report of the Secretary-General's High-level Panel on Threats, Challenges and Change, contained in the "Note from the Secretary-General", 2 December 2004, UN Doc. A/59/565.

12 "In Larger Freedom: towards development, security and human rights for all", Report of the Secretary-General, 21 March 2005, UN Doc. A/59/2005.

13 "2005 World Summit Outcome" Resolution adopted by the General Assembly, 24 October 2005, UN Doc. A/RES/60/1.

- in Part II paragraph 5 there is a reference to strengthening coordination and cooperation among states in combating crimes connected with terrorism including the "smuggling of nuclear, chemical, biological, radiological and other potentially deadly materials";
- paragraph 11 "invites the UN system to develop a single, comprehensive database on biological incidents" and a roster of experts and laboratories;
- paragraph 13 calls for stepping up national and international efforts to prevent and detect illicit traffic in nuclear, chemical, biological and radiological weapons and materials;
- paragraph 17 calls for co-coordinating the UN system's response to WMD attacks by terrorists to help affected states; and, finally,
- in Part III there are calls on the IAEA, OPCW and WHO to continue efforts in capacity building measures for states to prevent access to WMD and to prepare for situations of WMD use.

The Role of the Security Council 1992-2007

1. Iraq — The Security Council played a major role in the disarmament of Iraq's WMD based on resolution S/RES/687 and other subsequent resolutions. UNSCOM and the IAEA are credited with destroying more of Iraq's WMD than the Gulf war did. UNMOVIC was similarly authorized by the Security Council to continue its task of eliminating WMD in Iraq — a task that was abruptly halted by the unilateral invasion of 2003. This can be seen as a strong counter-measure against WMD proliferation and has been discussed in many books and articles such as Hans Blix's "Disarming Iraq" (Bloomsbury: London, 2004) and Tom Kono's Chapter in "Arms Control after Iraq" (eds. Sidhu and Thakur, UNU Press, 2006).¹⁴ The divergence in the interests of the permanent five members of the Security Council and its impact on the work of UNSCOM, UNMOVIC and the IAEA has been well documented and will not be examined in this paper.

¹⁴ Hans Blix, *Disarming Iraq: The Search for Weapons of Mass Destruction* (New York: Pantheon Books, 2004; London: Bloomsbury, 2005 — an updated edition with a new chapter). Tsutomu Kono, "The Security Council's Role in addressing WMD issues: Assessment and outlook," in *Arms Control After Iraq: Normative and Operational Challenges*, edited by Waheguru Pal Singh Sidhu and Ramesh Thakur (Tokyo: UNU Press, 2006).

2. The Presidential Statement of January 1992 — As stated earlier, the January 1992 Presidential Statement in the Security Council, arising out of the discovery of clandestine Iraqi programs and identifying WMD proliferation as a threat to international peace and security, has become the foundation of its subsequent actions. These ostensibly norm-based actions are, of course, undermined by the general skepticism with which a body — where five nuclear-weapon states hold veto power as permanent members — is viewed. Those who view proliferation as two dimensional — horizontal and vertical — remain concerned that the Security Council has taken no action on nuclear disarmament. As Ramesh Thakur stated in an op-ed in the *Hindu* of 11 May, 2007: “If nuclear weapons did not exist, they could not proliferate. Because they do, they will.” The unmet demands for the reform of the Security Council to make it more representative of modern global power realities adds to the legitimacy deficit of the Council.

3. Resolution 1373 — Notwithstanding this, the Security Council has undoubtedly been the engine room where much of the action on combating terrorism in general and WMD terrorism in particular has been taken. Within three weeks of 9/11 the Council adopted Resolution 1373 under Chapter VII unanimously. Operative paragraph 4 of the resolution noted with concern the close connection between international terrorism and “the illegal movement of nuclear, chemical, biological and other potentially deadly material,” calling for intensified coordination of efforts at all levels to strengthen the global response to this threat to international peace and security. Thus, the twin objectives of counter-terrorism and counter-proliferation against WMD acquisition were conflated. The Resolution also established the Counter Terrorism Committee (CTC) to ensure and monitor the implementation of Resolution 1373. The speed of the adoption of this resolution and its wide sweep vesting so much power in the Security Council are in contrast to its more usual fractious and dilatory conduct. Clearly there was a mutual interest on the part of the permanent five members to wrest the initiative from the General Assembly and to dominate the UN role in counter-terrorism and counterproliferation. Subsequent resolutions such as resolution 1535 have sought to revitalize the CTC, establishing an Executive Directorate. A meeting held in May 2003 with the IAEA,

OPCW and others participating was seen as an information-sharing exercise, adding little to what was already being done in preventing terrorists from acquiring WMD.

4. Resolution 1540 — Perhaps the need to focus more sharply on counterproliferation measures to prevent terrorists — and states allegedly supporting or harboring them — from acquiring WMD led eventually to the adoption, also under Chapter VII, of Security Council Resolution 1540 on 28 April, 2004. This resolution also established a Committee to ensure and monitor its implementation, the mandate of which has now been extended to 2008.¹⁵ The resolution acts as a comprehensive ban on support to non-state actors in the development or acquisition of WMD. It is a call to all states to adopt measures for the safe custody of WMD materials and more proactive measures to prevent proliferation. This resolution empowers the Security Council to act decisively on WMD terrorism and provides a mechanism to coordinate action within the UN system and with member states. While counterproliferation measures per se are not advocated or envisaged, it leaves the door open for the Security Council to take such enforcement measures if agreement can be reached among the P5 and the other non-permanent members. One way in which PSI measures are being introduced subtly is via the DPRK sanctions resolution S/RES/1718, which provides for "co-operative action including through inspection of cargo to and from the DPRK, as necessary." Since non-state actors can both be recipients and suppliers of WMD materials, the resolution does act as a brake on proliferation to both states and non-state actors.

The actual implementation of Resolution 1540 indicates that a number of states still do not have the necessary national legislation in place, and that all the obligations under the Resolution have not been fulfilled. The record is hardly inspiring. The November/December 2006 issue of *The Bulletin of the Atomic Scientists* commented editorially that "It's a curious state of affairs when a trafficker in nuclear technology gets less jail time than a corrupt businessman or a prolific spammer." It added that "According to a study by the Center for Nonproliferation Studies at the Monterey Institute of International Studies, out of the dozens of businessmen, agents, and sci-

¹⁵ Security Council resolution 1673 (2006).

entists around the world with alleged ties to the Khan network, only three have been convicted and served time." UNSCOM records of the mainly Western companies that supplied material and technology to Iraq for its clandestine WMD program remain a closely guarded secret, and there is no evidence that any prosecutions were launched in their countries.

The Resolution does fill the gap in the global non-proliferation regime by addressing non-state actors. It is also applicable to all states, irrespective of whether they are parties to the NPT, CWC or BWC or belong to the export control regimes like the Nuclear Suppliers Group (NSG) or the Missile Technology Control Regime (MTCR). The offer of assistance to states to strengthen their capacity to meet their obligations under the resolution is an important aspect of the resolution. It has been argued that some form of prioritization should exist in having states fulfill their obligations under the resolution. For example, countries with nuclear facilities must obviously be regarded as more prone to risk from non-state actors than those who do not have such facilities. The assessment of how states have fulfilled their obligations is also a very subjective exercise entrusted to the Committee. In sum, while resolution 1540 safeguards the international community from WMD terrorism, it must depend on the political will of individual states to ensure this through political and legal means without resorting to counter-proliferation measures using military force.

Conclusion

Counterproliferation, as a unilateral measure or a step taken by a coalition of the willing involving military action, is likely to cause more complications than solve problems. The chain of events triggered by the invasion of Iraq in 2003, with the elimination of WMD as the stated *casus belli*, provides lessons for us all. The Security Council, the primary body of the UN entrusted with the maintenance of international peace and security, must ensure that it follows the Charter. The non-use of force in international relations must therefore act as a normative restraint. The only use of force permitted — apart from self-defense under Article 51 — is the collective use of force sanctioned by the Security Council under Article 42. Thus, counter-

proliferation, as an enforcement measure using the entire range of military means, should be approved by the entire Council and that too after all other peaceful measures are exhausted. The only world order that will be acceptable to all is one that is based on the rule of law and a set of equitable norms in which all states cooperate.

A wide range of peaceful measures is already available to the international community to prevent WMD proliferation by states and non-state actors. Such preventive action places populations at a much lower risk than if preemptive action of a military nature is attempted to destroy WMD-capable sites. Existing treaty regimes can be strengthened and loopholes plugged. More intrusive verification measures, such as the "challenge inspection" concept in the CWC, can be introduced. In the NPT, accepting the IAEA's Additional Protocol could be made mandatory before the benefits of peaceful nuclear energy are made available to state parties. The 13 steps contained in the Final Document of the 2000 NPT Review Conference can also help minimize the risk of nuclear proliferation. The universalization of the BWC and CWC is vital. Finally, missile proliferation must also be addressed in a treaty regime.

The report of the Weapons of Mass Destruction Commission (WMDC), chaired by Dr. Hans Blix and sponsored by the Swedish Government, was published in June 2006.¹⁶ It reaffirmed the system of multilateral treaties in a rule-based global order. The political costs of violating treaty obligations deter most countries. Verification processes are becoming more sophisticated through improved technology and more intrusive, but national intelligence agencies must share information available with international inspection agencies. Recommendation 57 of the WMDC emphasizes that international legal obligations regarding WMD must be enforced, but only after credible investigation and authoritative determination of non-compliance.

The final recommendation of the WMDC — Recommendation 60 — deserves to be quoted in full. It states "The United Nations Security Council should make greater use of its potential to reduce and eliminate threats of weapons of mass destruction — whether they are linked to existing ar-

¹⁶ Weapons of Terror: Freeing the World of Nuclear, Biological and Chemical Arms, Final report of the Weapons of Mass Destruction Commission, Stockholm, Sweden, 1 June 2006.

senals, proliferation or terrorists. It should take up for consideration any withdrawal from or breach of an obligation not to acquire weapons of mass destruction. Making use of its authority under the Charter to take decisions with binding effect for all members, the Council may, *inter alia*:

- require individual states to accept effective and comprehensive monitoring, inspection and verification;
- require member states to enact legislation to secure global implementation of specific rules or measures; and
- decide, as instance of last resort, on the use of economic or military enforcement measures.

Before UN reform has made the Security Council more representative of the UN membership, it is especially important that binding decisions should be preceded by effective consultations to ensure that they are supported by the membership of the UN and will be accepted and respected."

The report of the International Commission on Intervention and State Sovereignty published in December 2001 helped to clarify what was hitherto vaguely and controversially referred to as "humanitarian intervention".¹⁷ The classic political science concept of "State Sovereignty" was expanded to include responsibilities, with the primary responsibility of the state being the protection of its people. The Commission stated as a basic principle that "Where a population is suffering serious harm, as a result of internal war, insurgency, repression or state failure, and the state in question is unwilling or unable to halt or avert it, the principle of non-intervention yields to the international responsibility to protect." The Commission, however, prescribed steps for the exercise of this international responsibility by citing the UN Charter and the need for Security Council authority. It is the view of the writer that the purposes for which the "responsibility to protect" principle can be applied could include the prevention of proliferation and terrorist threats from WMD.

All states guard their sovereignty jealously. The sensitivity over state sovereignty of nation states that recently emerged from colonialism is especially acute. However, in an interdependent world many state functions

¹⁷ "Responsibility to Protect", Report of the International Commission on Intervention and State Sovereignty, published by the International Development Research Center, Ottawa, 2001.

have to be coordinated at a global level to increase efficiency. This is as true of international peace and security as it is of fundamental human rights. Thus, in the Outcome Document of the Heads of State and Government following the UN General Assembly Summit in 2005, there was agreement contained in paragraph 139, which stated: —

"The international community, through the United Nations, also has the responsibility to use appropriate diplomatic, humanitarian and other peaceful means, in accordance with Chapters VI and VIII of the Charter, to help protect populations from genocide, war crimes, ethnic cleansing and crimes against humanity. In this context, we are prepared to take collective action, in a timely and decisive manner, through the Security Council, in accordance with the Charter, including Chapter VII, on a case-by-case basis and in cooperation with relevant regional organizations as appropriate, should peaceful means be inadequate and national authorities manifestly fail to protect their populations from genocide, war crimes, ethnic cleansing and crimes against humanity. We stress the need for the General Assembly to continue consideration of the responsibility to protect populations from genocide, war crimes, ethnic cleansing and crimes against humanity and its implications, bearing in mind the principles of the Charter and international law. We also intend to commit ourselves, as necessary and appropriate, to helping States build capacity to protect their populations from genocide, war crimes, ethnic cleansing and crimes against humanity and to assisting those which are under stress before crises and conflicts break out."

This is the agreement at the Summit level. We have now to ensure its consistent practice. It would be a confirmation that international peace and security are indivisible. WMD threats directly impact human security, affecting all countries. Counter measures against WMD proliferation must therefore be implemented by the Security Council alone, or after Security Council authorization, to eliminate a WMD threat from states or non-state actors in exercise of the "responsibility to protect" principle. We must progress at the same time to eliminate all WMD possession itself from all countries as the surest guarantee against WMD proliferation.



SESSION 8



Chairman –
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The Nuclear Fuel Cycle — a Comparison of Current Proposals and Future Prospects

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What I would like to do is review the bidding on several of the proposals that have been made with regards to reforming the nuclear fuel cycle. I think it is also important to consider why they have been made now. And after this, I will try to make some bottom-line assessments as to where some of the gaps exist in the proposals that have been made. There has been a lot of hard and useful work put into this problem of supply guarantees and assurances on the structure of the fuel cycle. But I think it is critical that we keep these in context. There is a tendency to view these tools as an end to themselves and as some sort of cure-all. As Director General ElBaradei has said, the fuel cycle IS the Achilles heel of the non-proliferation system. But we are talking about a centipede with a lot of heels, and curing one problem does not cure all of our problems.

As Bill Potter has said, the problem we are dealing with is that peaceful nuclear technology is a question of intent, not capabilities. The same facilities used for peaceful applications can be used for weapons production. Safeguards help assure detection, but cannot prevent the misuse of facilities. While some of the facilities we are talking about may require a little

bit of rewiring, they are dual use. This is the inherent challenge. So what we are dealing with is not the difference between the nuclear cycle that can be used for nuclear weapons and the one that cannot. We are dealing with gradations of resistance to misuse. And what we are talking about on the supply side is often institutional barriers, which are useful, but they are not intrinsic barriers to misuse. I think we have to keep that in mind.

So why are we talking about this problem now? You know, even before my fresh face emerged on the scene, the international community wrestled with these issues several times. Even with the invention of the nuclear weapon, the scientific community and the political community began to wrestle with what was obvious even then. They turned to it again in the 1970s, and I will say it only once, so as not to upset people — INFCE. So, obviously, this is not a new issue. What we are dealing with is the reemergence of something we have known all along, even during the ratification of the NPT. This is recognized as a challenge.

We are facing it now again for obvious political and geo-strategic reasons, not the least of which is Iran. Iran has done what we have all feared might happen. They have called our bluff and sought to misuse the Treaty in developing weapon technology and then claim that this is simply their inherent right. But what really worries me is not so much Iran, although there is real reason to worry. What really worries me is what happens in another case when the next state does not violate the Treaty and the safeguard system systematically for 18 years. Without any sort of prejudgment as to what they might do, South Korea has a tremendous economic justification for developing domestic enrichment capability. Although they have been found in violation of the safeguards agreement in the past, they could easily start the enrichment facility with a strong economic justification and we would really be faced with a quandary. Because this is a westernized, rule of law, legitimately compliant country. And we still have the same inherent capabilities there. This is what we do in Japan, Germany and other countries. But we will be dealing with scientific and technical realities overlaid onto a regional instability, which I think will give everybody a sense of concern.

So this issue is linked to Iran, but we have to keep in mind that this is

larger than one country. And obviously it is also linked to the nuclear renaissance that many think is coming. It is not really a renaissance, but more of a re-birth. However, it has not happened yet. But let's assume that it does happen. Important groups have looked at these issues. MIT looked at the potential growth in nuclear power and stated very clearly that the world's current enrichment capacity is more than adequate to handle projected growth. The market works. And if you ever need any assurance of this, just look at the fact that the United States relies on Russia for 50% of its nuclear fuel. So somewhere on the order of 8 — 10% of U.S. electricity is directly linked to Russian supplies. So the market is robust. And some of the initiatives try to improve on the market. But there are even limitations in there.

So I think we are at the point where we should look at why countries pursue fuel cycle facilities. We all can, and many probably have sat down and worked out 47 different reasons why countries may proceed with nuclear capabilities. But the big three for me are up on the screen: 1) energy security and assurance of supply, 2) the profit motive — it can be financial largely, but also political, in the domestic political sense, and 3) security — not energy security but using technology as a weapons hedge. I think what we are finding is that we are trying to deal with the supply side and the energy security side, and I think we are making good progress on those. But what's lacking is the initiatives that would really address the other two.

So let's look at some of the proposals that have been made. And these are very shorthand summaries of just a few proposals that are out there. There is a lot of information available; many of you working on these issues are even more knowledgeable than I. My great fear is that, of course, Laura Holgate will show up, in which case I will have to give the microphone over to her, given her tremendous work on fuel bank issues. But you really have to give the U.S. President credit for getting out ahead of the curve in 2004 when he made his speech at the National Defense University. When he made it, it was really quite amazing. You had the President of the United States talking in quite amazing detail about the nuclear fuel cycle, supply assurances and reprocessing. It was really quite remarkable and I think welcome. Unfortunately, there has been no follow-up on the substance within the United States. There were attempts to try to draw the United States

along, and I will talk about that in a second.

The U.S. initiatives that have followed the President's speech seek to create new categories of "haves" and "have-nots" in the fuel cycle arena. Under this concept, the fuel-cycle-states will help the non-fuel-cycle-states by providing them services like fresh fuel and spent fuel management. And even in a good international nuclear environment I think that would have been a challenge. In the environment that we already discussed today and General Pan talked about in the last session, the perception exists that the advanced states are not treating countries as equals and that they are trying to take something away from them. This is a hard sales pitch, to say the least.

Much more interesting, and I think much more robust, has been the Russian initiative for an International Uranium Enrichment Center. I think Rose will talk about this in a little more detail, but the idea of turning a national facility into a multinational facility is a remarkable step, and I think it is one that should be encouraged and welcomed. Again, we have to understand in the Russian context why it's being done. This is not going to cure all our problems, and Rose will talk a little bit about that.

There is a more recent proposal — the 6 Nations contracting proposal. The 6 Nations involved in that are the United States, France, Russia, the U.K., Germany, and the Netherlands; these are the main enrichment service providers in the world. In a very interesting proposal they have come together and said: "Yes, we do compete with each other, and yes we do control the market, but we are also going to cooperate with each other to address this potential problem. So under this proposal, if the situation arises when one of the six states cannot supply contracted materials, as long as the IAEA is able to certify that a recipient state is in compliance with its non-proliferation obligations, we are going to back up each others' supply. We are going to make the market redundant. And we are going to do that through a contractual method, again using the market and the strength that it provides." So within the narrow context of supply insurances, this idea has real concrete value. To the extent that we can fulfill these proposals in reality, I think they are valuable.

There is also an important proposal from NTI. For those who do not

know about this, through NTI Warren Buffet has put up \$50,000,000 of his own money to create a fuel bank through the IAEA. Even for us it is a lot of money. And he said that he would provide this money to the IAEA to establish an International Fuel Bank of Uranium under IAEA control. But the offer is conditioned on governments matching his investment 2 to 1. So if others put up \$100,000,000, then his 50 million will become active. So \$150,000,000 will be made available for the IAEA to purchase and establish not a virtual fuel bank, but a real fuel bank, in the form of uranium hexafluoride, most likely. The details have to be worked out. Thus far the tally pitched in by other governments is zero. So we can see that there is concern about Iran, and there is concern about these issues, but we have yet to see dollars or rubles, or euros, or yen back up the idea, although I think it is the one that has great value.

Obviously many of us are familiar with the very good and I think praiseworthy efforts of the IAEA Director General to push the idea of multilateral fuel cycle concepts. Again, this is an exercise where it is easy to draw out the details on paper and say that the world would be better off from a comparative point of view if all facilities were under multinational control and no one country unilaterally possessed the means to produce materials for nuclear weapons. I think we have to continue the proceedings with something bigger. However, we exist within the laws nature. These facilities are going to exist on the territory of countries, and countries change. Having the institutional barrier of a blue flag flying on the building is useful, and I would argue it is an institutional step forward for international control, but is reversible in a day or less. And so when Iran says: "We think multinationally controlled fuel facilities are a great thing; build one here." I think that we see that there are limits even to these good proposals.

You can see where I think the impact of these different proposals is and where the gaps remain. I think these proposals all in different ways do an admirable job on the supply side, but only a few of them really touch on the profit motive, and only one, the idea of multinational control, in a small way gets to the idea of how you prevent these facilities from being used as a weapons hedge.

The supply efforts have obviously more than just a benefit for dealing

with supply. They can serve as an early detection system. It has been talked about at length: if you have a mechanism for guaranteed supply and states without an economic justification still proceed with their own fuel cycles, then it is obvious that something is going on. That is very useful. It is like a study that was funded at a university at the cost of millions of dollars. It found out that young men and young women in college are more sexually active than couples who are sixty years old. You do not need a lot of money and time to show you when you've got a potential problem, but it is useful to have evidence to prove your point. In the international legal context, having a more objective set of criteria and having the rhetorical ability to respond to countries that misuse the system is valuable.

Where I think we are seeing the gaps emerge, however, is that these efforts are disconnected from the much more pressing, broader security and proliferation issues. We can solve the supply side, but it does not do us any good if nuclear weapons are the new coins of the realm for security. You cannot have a secure international fuel cycle system and a rapidly proliferating world. The two are simply incompatible. Any investment will have to be cognizant of the problem.

What we see is that supply assurances, as difficult as they are, are really the easiest of these three to address. That is depressing, I recognize, but still, I think, the reality. The details of many of these measures still need to be worked out. The funding for these measures still needs to be worked out. The existing gaps even within the energy assurance side demonstrate that the major gap exists on the back end. We can provide uranium to a country, but there are still no countries that are demonstrably able and willing to handle the back end for a nuclear power producing country. Russia has changed its laws. They are interested in establishing the spent nuclear facility. But in the context of the U.S.-Russia negotiations on a nuclear co-operation agreement, this plan has been all that it is about. I think that is a temporary political move, but it's still the reality.

At the same time we see the demand side on weapons continue to increase. We see the norms of non-proliferation eroding. And we see the emergence of technical programs like the Global Nuclear Energy Partnership that are disconnected from these broader political realities. When you

ask the Department of Energy officials, who are developing and eventually implementing the GNEP, where the linkage is so that participating countries will forego their ability to have domestic fuel cycle facilities, they say very plainly: "They don't exist. We are not going to require participation in the GNEP on foregoing capabilities. If we did so, no one would participate." And their priority there is very clearly in the program, not the impact and the goal. I think that is a sign of where the U.S. political thinking is. I think what it always boils down to is the recognition that unless these efforts are both tied to the broader security landscape and unless they provide real economic incentives above and beyond the market place, they are unlikely to achieve their goals. If a country is offered the ability to depend on another country for supply and even for management of the back end, the question will be: "OK, there is a risk there; what is the benefit that makes that risk worthwhile?" Today it does not exist. "Is there an economic benefit?" Fuel is going to be sold at market rates, at least according to the current initiatives. "Is there a security benefit? If I forgo this, will the nuclear policies of other countries change? Am I free of the threat of nuclear attack? If I forgo these capabilities, even though I am entitled to them under treaty..." All of that is yet to be explored.

So I do not want to leave you with the idea that we should not proceed with these programs. I want you to appreciate that there is value in them. My concerns, I think, are significant when it comes to impact and the priority that has been put into them politically. And the last point — sometimes they are used as a substitute for dealing with the harder questions sometimes being sucked into a rhetorical game that Iran and others are playing. Here the priorities need to be placed also.

Global Nuclear Energy Partnership — Technical and Political Issues

Rose GOTTEMOELLER

Director of the Carnegie Moscow Center (USA)

Actually Jon Wolfsthal has made a great introduction to the remarks I am going to make today. On Jon's last slide there was a point about the GNEP being disconnected from political realities and indeed that is part of what I will be talking about in my presentation today. I was asked to comment on the technical and political issues of the Global Nuclear Energy Partnership, or GNEP as it is known. Before I launch into the discussion I would like to join the chorus of "thank yous" to the organizers of this conference. I have had a great time in the last couple of days talking to many old friends and colleagues and just providing that venue alone has been quite valuable. Never mind the very important and interesting substance of the debate we have been engaged in. Also I would like to mention to the conference as a whole that today I had an op-ed in *Nezavisimaya Gazeta* in Russia. There are copies of it both in Russian and English on the table outside. It is called "Back to Concrete Business". It picks up on Sergey Lavrov's comments when Condoleezza Rice was in Moscow last week that it is time to come back to concrete business. I heard from my colleague in Moscow that there are now already today 31 comments on *Nezavisimaya Gazeta's* website. I have not had a chance to look at them yet. But I am a little afraid to look,

keeping in mind what we talked about yesterday in terms of the overall mood in Moscow. And I urge you to have a look and I would be happy to hear your comments on the piece.

Now let's go back to the GNEP. Let me remind you that it was launched only over a year ago in February, 2006 by President Bush. I welcomed it actually as it is a way to return to consideration of nuclear power. We can debate and discuss whether it is a good thing. But it was quite interesting to me, as it was a sign that the Bush administration was finally backing into recognition that global warming was a problem. Not many people recognized this fact, but after years of denying that global warming was a problem, one of the main rationales for the Global Nuclear Energy Partnership as articulated by the Bush administration was concern about global warming. So it was a back door change in the Bush administration policy on this. And I think in that, alone, it is very important.

Let me just outline. As you know, the goals of the policy there are actually many, and they relate to being able to address spent fuel waste problems. Number one: being able to expend nuclear power in order to be able to deal with the needs for greater energy around the world, but also in a way that it does not contribute to global warming. But there are several other goals and programs that are important in policy terms and they are worth emphasizing at the outset. The first is to enable the benefits of nuclear energy, while discouraging the spread of sensitive fuel cycle technologies. The second, all important for this conference: non-proliferation policy objectives should be served by the Global Nuclear Energy Partnership. The third is: economic viability should be served by the Partnership, as well as environmental benefits and effective waste management. This is repeated time and time again in talking about the Global Nuclear Energy Partnership. But I have to say that considering the issues as they have emerged in the past year, and Jon Wolfsthal has already foreshadowed this, there are many problems and questions related to the fact that the proliferation problems associated with the expansion of nuclear power are actually getting a very short shrift under the GNEP efforts so far.

I mentioned yesterday that I have been to the USA for the past ten days and I spent considerable time in the Department of Energy, as well as Los

Alamos and Sandia, talking about the GNEP, among other things. After that visit I would say that there are actually three sets of issues, not just two. There are the technical issues indeed, and the political issues, but there is the third category that I would call "infrastructure" issues. That is, certain building blocks are absent in my view for expanding nuclear power on an international basis, either because of the long hiatus in the attention to nuclear energy around the world, or because this rapid burst in new attention to nuclear energy is creating new demands on the international system and on national systems.

Last summer there was a partnership established in St. Petersburg at the G8 summit; it was established between the Global Nuclear Energy Partnership and what was known as the Putin Initiative. This is the proposal by President Putin, announced in January 2006, to build a system of international fuel services. And you heard yesterday about that from Mr. Kirienko and about the efforts to establish a center in Angarsk, which have been successful so far. I say the establishment has been successful; now we have to see how the implementation works. Will it actually be able to attract a number of partners and to move forward to productive implementation? But the Russian Federation has moved quite quickly to establish Angarsk. And so I would say that they are first out of the blocks and actually being able to provide some international fuel services.

These discussions that I had in Washington and in the labs pointed out to me a key fact that follows on Jon's comment. It seems to me that despite the fact that technical issues are plenty daunting, nevertheless, they are less daunting than the political issues, as far as these new initiatives are concerned. The technical issues will take a long time to work out. The industrial implementation of fast reactors, for example, will take 50 years or more to actually work out. But I think the feeling in the technical community is that in fact these problems can be worked out and we will get to the point where we are able to deploy fast reactors. However, there is a sense that the political issues are much more daunting. Let me offer you a couple of examples to illustrate what I have to say here. First of all, let's talk about an example of a political project that has already been undertaken between the United States and Russia involving the development of transuranic

fuels for applications in fast reactors. It is a joint project that has already been agreed between the two sides. They have already been discussing a kind of work plan as to how to get extensive R & D done on these kinds of fuel over the next 10 years. And they are looking at the process already for fuel fabrication, for moving it into industrial implementation, doing active irradiation testing in the BOR-60 and BN-600 fast reactors in the Russian Federation, and doing performance modeling as well. So there is already a sense that there are some practical tasks in the R & D realm, with U.S. and Russian experts involved in them. However, the comments are very interesting. When talking to the scientists and the engineers involved in these efforts, they say: "Well, the political problems are out there. We don't know if we actually can succeed in the implementation because of political problems." Roald Sagdeev will probably be quite amused to hear that the reason given is concerns about the long experience of essentially political problems associated with the U.S. export control system, and an example was cited to me concerning the difficulties of conveying a space propulsion system back and forth, into and out of the United States for demonstration purposes. This was a project back in the late 1980s and early 1990s. Roald has often cited it in his own discussions on how to engage scientific cooperation between the United States and Russia. And again this problem is coming up: the scientists and engineers talk about how to transfer fresh fuel samples from the United States to Russia for irradiation in the BOR-60 and BN-600 reactors and how to get them back to the United States to check on the results of the experiment. So I think there is already a clear recognition that there will be some very knotty issues that will have to be addressed, and even though they seem quite boring and technical in nature, they will probably need some attention from the political levels of our governments to have them succeed.

I would say that some similar challenges exist at an even more serious level and more immediate level with regard to the completion of the 123 Agreement between the United States and Russia. The 123 Agreement is formally known as an "Agreement for peaceful nuclear cooperation under Sections 1, 2, 3 in the U.S. Atomic Energy Act." As many of you know, the process of negotiating this agreement between the U.S. and Russia has

been rather straightforward and quick. It is the basic legal document that will underpin cooperation in the GNEP between the United States and Russia. It is not the only necessary document, but it is the basic foundation that we will proceed from in this cooperation. However, there are some political conditions that have been attached to it, and before the 123 Agreement can be taken to the U.S. Congress to begin their process, President Bush will have to determine officially that the Russian Federation is quote being helpful on Iran unquote. So political issues are here, too, although it seems like quite a boring legal matter, a technical issue; nevertheless, there is a political overlay that will have to be addressed. I am hopeful myself that as we move forward to a third resolution in the UN Security Council addressed to Iran, if Russia and the United States are able to work together smoothly on putting that resolution in place, I am hopeful that President Bush will be willing to make this determination. We can initial the 123 Agreement, and it can move into the U.S. Congress for the ensuing process that they must undertake. That in itself will be a challenging effort, because, as you may be aware, in both the Senate and the House of Representatives there are two draft laws now that would impose further sanctions on any country that undertakes cooperation with Iran. It is directed, of course, at the Russian Federation, but it is also directed quite seriously at the European Union. And so we have some work to do with the Congress, as well. But it is just to illustrate the point that there are many political barriers affecting cooperation in the Global Nuclear Energy Partnership, as in other related areas.

I mentioned that there is a new issue area I called "infrastructure" issues. I want to differentiate between the set of political problems that I was just talking about and the technical problems. Here I actually see more hopeful signs. There are various kinds, subcategories of even infrastructure problems: what I called the "physical infrastructure" issues — in Russia, for example, there has not been adequate machine building capacity to provide for the expansion in nuclear power that Russia foresees even for its domestic market, not only for expansion into international sales of reactors and related equipment. So building up machine building capacity for the nuclear power industry is important for the Russian Federation. Concerning human capital, both the U.S. and Russian experts have been

talking about the need to build up the numbers of scientists and engineers trained and ready to work in the nuclear power establishment. However, we also need to rebuild the reserve of blue-collar workers again who are trained and ready to work in important nuclear energy projects. There are also legal and regulatory infrastructure issues. There are different kinds of infrastructures, but legal and regulatory issues must be worked out. Here again I see some hopeful signs. For example, in the United States for the first time since the Three Mile Island accident back in the late 1970s, a licensing procedure is being undertaken for a new power plant in the United States. It is not directly linked to the GNEP, and, in fact, many in the U.S. industry want to make sure that this licensing process remains disconnected from the GNEP, for fear that it might cause some braking functions. Nevertheless, I think it is good that we are thinking now in terms of licensing new projects and considering how to move forward in this area. Russia has made a great deal of progress in the past year in terms of establishing new legislation in the Russian Duma, a new body of law to support, for example, commercial investment in nuclear power projects. I think this is also a very important step.

Finally I would say that whether we have technical, political or infrastructure issues, they are being addressed. I wanted to mention a few points of a more positive nature to end on. First of all, with regard to technical infrastructure, I would like to underscore and emphasize that the Russian Nuclear Energy Complex in fact remained quite active after the Chernobyl accident, unlike nuclear energy complexes elsewhere in the world. Therefore it provides, I would say, a strong basis for progress now in the technical arena. I know that is one of the rationales in the U.S. industry for some very intensive cooperation now with the Russian nuclear energy establishment. Second, and this is a more difficult place to make a positive point, but on the political front, despite the difficult times between Moscow and Washington, we do see this pragmatic work continuing in the establishment of a partnership between the GNEP and the Putin Initiative. Reflecting on my conversations at the U.S. laboratories last week, I can say that Sandia and Los Alamos are both very enthusiastic about the cooperation, and they have also been able to get quite far in establishing some detailed projects with

their Russian counterparts. Finally, I just wanted to point again to some progress that is being made, in the form of the new changes in Russian law and the U.S. efforts to establish licensing, not only for a power plant, but also to think ahead about what will be required to license other types of facilities, such as recycling facilities. All of these are very difficult challenges for the United States in the realm of law and regulations.



CONCLUSION



Viatcheslav KANTOR, Ph.D.

Chairman of the Conference Organizing Committee

First of all, I would like to thank all of the participants in this forum, our honorary guests and the heads of state who sent letters of greeting to our conference. In particular, I would like to thank the conference working group headed by Professor Dvorkin, Professor Arbatov and Professor Oznobishchev, who spent the last six months preparing for this conference and, as we have seen, succeeded in bringing together a unique team, allowing our conference to achieve outstanding results.

I would like to call your attention to the fact that today is a very symbolic day. Today is the first day following the day when G-d gave the Ten Commandments to his people, as was mentioned here. I would like to remind you that the number of commandments is more than three hundred.

Naturally, when we talk about the declaration today, we are not referring to all three hundred commandments, or to all that should be said about this, but only to the most important points. Moving from the main points to more detailed points, we can make progress. I would like to urge the conference working group to consider each proposal in the most careful and thorough way and try to integrate the opinion of each participant into the final declaration. Our document will be truly valuable if it reflects the views of all of you. I urge the participants to do this in a most expedient manner.

To my regret, I cannot regard myself as an expert on many of the issues discussed, but as a public activist, let me point out one thing that became

clear to me as a result of the wide ranging discussion we have had over these two days. It seems to me that the final declaration should reflect another very important idea, namely, that all the measures and steps that are on the agenda today — the diplomatic steps, political steps and steps of a military nature that are being taken in order to influence threshold countries — to my mind are not sufficient. I believe that the scope of these measures should be supplemented by measures of public and cultural impact and by measures of an educational nature, in order to address the general public in these threshold countries, instead of the would-be or existing dictators, as they are not the best audience. Indeed, to organize this process I believe it is very important to consider all aspects, including financial issues.

On the whole, on behalf of the organizers, I would like to say that we are very pleased with the conference and, if you agree, we are ready to continue working on the issues discussed at this conference by establishing a permanent Luxembourg forum.

I would like to thank all of you once again for your fruitful cooperation during this fortnight.

I share the position of my colleagues who believe that we should not be embarrassed by the declaration of the Luxembourg conference when it is read by any of the addressees, whether that be the leader of a large country or the head of an authoritative international organization, such as the UN, the EU, the CIS, the IAEA, etc. I believe that our conference has already taken a serious step toward preventing nuclear catastrophe.



APPENDICES

APPENDIX 1

Declaration on Preventing Nuclear Catastrophe

On May 24-25, 2007, fifty seven independent experts in global security, arms control and disarmament from fourteen countries met at an international conference in Luxembourg to discuss the prevention of a nuclear catastrophe and ways of strengthening the nuclear non-proliferation regime.

Participants of the Luxembourg Conference concluded that the Treaty on the Non-Proliferation of Nuclear Weapons and the related nuclear non-proliferation and disarmament regimes are facing unprecedented challenges and need high-level political support to sustain and strengthen them.

First, the greatest direct threat for the foreseeable future stems from the possibility that terrorist organizations will gain access to nuclear explosive devices or nuclear materials. Second, there is a danger that the Treaty on the Non-Proliferation of Nuclear Weapons and the whole non-proliferation regime will collapse because of a failure to resolve on-going nuclear crises such as those in Iran and North Korea. Third, the most acute factor is the problem of poor compliance with, and weak enforcement of, non-proliferation obligations. This includes the lack of commitment by nuclear weapon states to nuclear disarmament, their continuing reliance on nuclear deterrence, and the disintegration of the nuclear arms control and disarmament process.

Conference participants emphasized that such developments will undercut not only regional, but also global security, and raise the danger of

terrorist use of nuclear explosive devices or combat employment of nuclear weapons. The international community must address this situation with the utmost urgency.

Participants noted that the promotion of peace, respect of each other's legitimate interests, and good neighborly relations among states are fundamental to international security and necessary as a pre-condition for the advancement of the non-proliferation regime, nuclear arms control and disarmament agreements.

Experts attending the Conference propose to the United Nations Secretary General, the Member States of the United Nations, the Group of Eight, the Organization for Security and Cooperation in Europe, the European Union, the North Atlantic Treaty Organization, the Commonwealth of Independent States, the Collective Security Treaty Organization, the Shanghai Cooperation Organization and other authoritative international organizations a roadmap embracing the following initiatives:

1. Reaffirmation of nuclear-weapon states' commitment to the goal of nuclear disarmament in accordance with Article VI of the Non-Proliferation Treaty; reduction of their reliance on nuclear deterrence; convening a special summit of nuclear-weapon states on nuclear disarmament and non-proliferation and a special session of the United Nations General Assembly on disarmament; urgent renewal of the dialogue between the United States of America and the Russian Federation on further nuclear arms reductions and limitations; enhancement of cooperation on the development of missile defense systems as provided for by the Joint Declaration on New Strategic Relations of 2002; initiation of consultations with the United Kingdom, France and China on their participation, in a format acceptable to them, in nuclear forces limitations, as well as in transparency and confidence-building measures existing between the United States of America and the Russian Federation; adoption by all nuclear-weapon states parties to the NPT of an unconditional obligation on the non-first use of nuclear weapons against any state party to this Treaty; initiation of international nego-

tiations on the Code of Conduct on peaceful space activities and on space security problems.

2. Signing and ratification of the Comprehensive Nuclear Test-Ban Treaty by all states, and in particular by the Annex II (44) states that have not yet done so, to bring about the early entry into force thereof.

3. Acknowledging certain progress achieved so far, all the parties in the six-party talks should take effective measures to implement the Joint Document regarding the Democratic Peoples' Republic of Korea's nuclear program. The Democratic Peoples' Republic of Korea should terminate its nuclear weapons program, return to the Non-Proliferation Treaty and International Atomic Energy Agency safeguards and abide by the international disarmament treaties and export control mechanisms related to weapons of mass destruction and delivery systems. In return, the international community, and the other five parties of the six-party talks in particular, should provide adequate security assurances, energy and humanitarian assistance and help in the development of energy industry.

4. Closer coordination of the positions of the six countries negotiating with Iran on the implementation of International Atomic Energy Agency safeguards in Iran. Iranian defiance of the United Nations resolutions is unacceptable. Iran must comply with United Nations Security Council resolutions and the International Atomic Energy Agency Board of Governors' resolutions, by resolving all outstanding issues with the Agency. Foremost, Iran must fulfill the United Nations Security Council's demand that Iran should without further delay suspend all enrichment-related and reprocessing activities, including research and development, to be verified by the IAEA, as well as work on all heavy-water related projects, including the construction of a research reactor moderated by heavy water, also to be verified by the IAEA. Failure to comply with these provisions will lead to strengthening sanctions against Iran, as specified in Chapter VII of the United Nations Charter, using all appropriate means within the authority of the United Nations Security Council. Iranian compliance with the United

Nations Security Council resolutions and removal of all non-compliance issues would make possible provision of a package of incentives, including assured delivery of low-enriched uranium or nuclear fuel and removal of irradiated fuel for reprocessing and storage abroad. Other incentives may include international help with developing the Iranian oil and gas industries, admittance to the World Trade Organization and, eventually, resumption of diplomatic relations with the United States of America. Iranian political circles and population at large should be informed of the considerable economic and social-political advantages pursuant to Iranian compliance with the United Nations Security Council resolutions, and the International Atomic Energy Agency Board of Governors' resolutions.

5. Encouraging India, Israel and Pakistan and providing to them incentives to come closer, where appropriate, to the nuclear non-proliferation regime through concluding the International Atomic Energy Agency 1997 Additional Protocol, signing and ratifying in full the Comprehensive Nuclear Test-Ban Treaty, joining negotiations on the Fissile Material Cut-off Treaty and international export control mechanisms, as well as undertaking confidence- and security-building measures, regarding nuclear weapons. It should be taken into consideration that Israel has already signed the CTBT. Such steps will be conducive to the broader involvement of these three countries in international peaceful nuclear cooperation programs, and other regional and global endeavors in the economic or security realm.

6. In view of the growing threat of nuclear terrorism much more intensive and broad preventive measures are urgently needed to enhance physical protection, accounting and control of fissile materials worldwide, and to accelerate disposition of highly-enriched uranium by its conversion to low-enriched uranium and application to peaceful purposes, capitalizing on the positive experience of the agreement on highly-enriched uranium and low-enriched uranium between the United States of America and the Russian Federation ("HEU-LEU deal"). Additional and, if necessary, international cooperative measures to protect nuclear power plants, research reactors and nuclear weapons storage sites should be undertaken.

7. Further enhancement of the International Atomic Energy Agency comprehensive safeguards, foremost by signing and ratifying the 1997 Additional Protocol to the International Atomic Energy Agency safeguards agreements by all states that have not yet done so; and for the 31 states — parties to the NPT — that have not yet concluded safeguards agreements, to do so as soon as possible. Strengthening barriers against withdrawal from the Non-Proliferation Treaty by strictly regulating the withdrawal procedure, inter alia by introducing a requirement for well-founded motivation for the withdrawal, and ensuring compliance with the withdrawal notice period pursuant to Article X, as well as by adopting regulations on maintaining International Atomic Energy Agency safeguards over any technologies and materials obtained under the Non-Proliferation Treaty. In case of withdrawal, dual-purpose technologies and materials should be returned to suppliers under the Agency's supervision, which should be ensured by agreeing on corresponding regulations with the Nuclear Suppliers Group and Zangger Committee.

8. Enhancing the role of the UN Security Council in strengthening the nuclear non-proliferation regime. Making all necessary efforts to consolidate positions of the UN Security Council permanent member-states in enforcing the NPT obligations. Improving the efficiency and ensuring compliance with international law of counter-proliferation measures regarding nuclear and other weapons of mass destruction (pursuant, for example, to the Proliferation Security Initiative, United Nations Security Council Resolutions 1540 and 1673, and the Convention on Nuclear Terrorism).

9. Coordinating international efforts to limit the spread of nuclear fuel cycle technologies to additional states, while developing a reliable mechanism for fuel supply assurances and solutions for spent fuel management and removal. Appointing a high level United Nations commission to consider various existing proposals on multilateral nuclear fuel cycle supplies and services, in particular capitalizing on the practical experience of the Russian Federation and other states in advancing such projects. Encouraging the Global Nuclear Energy Partnership as a program to provide for the

energy needs of emerging economies, while elevating non-proliferation standards to an equal level with environmental safety requirements.

10. Starting consultations on elevating the Missile Technology Control Regime and the International Code of Conduct Against Ballistic Missile Proliferation, as well as the system of control over the exports of nuclear materials and technologies within the Nuclear Suppliers Group, to the status of international conventions.

The Luxembourg conference participants consider the implementation of the above-mentioned measures by all concerned states and international organizations as a way to make a breakthrough in preventing further proliferation of nuclear weapons and in precluding their accessibility to terrorists, as well as building global and regional security.

The participants express their intent to establish a permanent Luxembourg Forum with the purpose of holding policy-oriented conferences and meetings of experts and issuing policy-relevant publications on nuclear non-proliferation and disarmament on a regular basis.

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18. **Carlo JEAN** *President of the Society for the Management of Nuclear Plants «SOGIN» (former Military Adviser to the President of Italy); General, ret. (Italy).*

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20. **Viatcheslav KANTOR** *Chairman of the Conference Organizing Committee; President of the European Jewish Congress; President of the Russian Jewish Congress; Chairman of the European Jewish Fund; Ph.D.*

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24. **Anton KHLOPKOV** *Executive Director of the PIR Center (Russia).*

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28. **Robert LEGVOLD** *Professor, Columbia University (USA).*

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35. **Alexander
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36. **William
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37. **Vasanth
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42. **Roland
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APPENDIX 2

Normative Documents on Non-Proliferation of Nuclear Issues

2.1. The Treaty on the Non-Proliferation of Nuclear Weapons

July 1, 1968

Washington, London and Moscow

The States concluding this Treaty, hereinafter referred to as the "Parties to the Treaty",

Considering the devastation that would be visited upon all mankind by a nuclear war and the consequent need to make every effort to avert the danger of such a war and to take measures to safeguard the security of peoples,

Believing that the proliferation of nuclear weapons would seriously enhance the danger of nuclear war,

In conformity with resolutions of the United Nations General Assembly calling for the conclusion of an agreement on the prevention of wider dissemination of nuclear weapons,

Undertaking to cooperate in facilitating the application of International Atomic Energy Agency safeguards on peaceful nuclear activities,

Expressing their support for research, development and other efforts to further the ap-

plication, within the framework of the International Atomic Energy Agency safeguards system, of the principle of safeguarding effectively the flow of source and special fissionable materials by use of instruments and other techniques at certain strategic points,

Affirming the principle that the benefits of peaceful applications of nuclear technology, including any technological by-products which may be derived by nuclear-weapon States from the development of nuclear explosive devices, should be available for peaceful purposes to all Parties of the Treaty, whether nuclear-weapon or non-nuclear weapon States,

Convinced that, in furtherance of this principle, all Parties to the Treaty are entitled to participate in the fullest possible exchange of scientific information for, and to contribute alone or in cooperation with other States to, the further development of the applications of atomic energy for peaceful purposes,

Declaring their intention to achieve at the earliest possible date the cessation of the nuclear arms race and to undertake effective measures in the direction of nuclear disarmament,

Urging the cooperation of all States in the attainment of this objective,

Recalling the determination expressed by the Parties to the 1963 Treaty banning nuclear weapon tests in the atmosphere, in outer space and under water in its Preamble to seek to achieve the discontinuance of all test explosions of nuclear weapons for all time and to continue negotiations to this end,

Desiring to further the easing of international tension and the strengthening of trust between States in order to facilitate the cessation of the manufacture of nuclear weapons, the liquidation of all their existing stockpiles, and the elimination from national arsenals of nuclear weapons and the means of their delivery pursuant to a Treaty on general and complete disarmament under strict and effective international control,

Recalling that, in accordance with the Charter of the United Nations, States must refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any State, or in any other manner inconsistent with the Purposes of the United Nations, and that the establishment and maintenance of international peace and security are to be promoted with the least diversion for armaments of the world's human and economic resources,

Have agreed as follows:

ARTICLE I

Each nuclear-weapon State Party to the Treaty undertakes not to transfer to any recipient whatsoever nuclear weapons or other nuclear explosive devices or control over such weapons or explosive devices directly, or indirectly; and not in any way to assist, en-

courage, or induce any non-nuclear weapon State to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices, or control over such weapons or explosive devices.

ARTICLE II

Each non-nuclear-weapon State Party to the Treaty undertakes not to receive the transfer from any transferor whatsoever of nuclear weapons or other nuclear explosive devices or of control over such weapons or explosive devices directly, or indirectly; not to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices; and not to seek or receive any assistance in the manufacture of nuclear weapons or other nuclear explosive devices.

ARTICLE III

1. Each non-nuclear-weapon State Party to the Treaty undertakes to accept safeguards, as set forth in an agreement to be negotiated and concluded with the International Atomic Energy Agency in accordance with the Statute of the International Atomic Energy Agency and the Agency's safeguards system, for the exclusive purpose of verification of the fulfillment of its obligations assumed under this Treaty with a view to preventing diversion of nuclear energy from peaceful uses to nuclear weapons or other nuclear explosive devices. Procedures for the safeguards required by this article shall be followed with respect to source or special fissionable material whether it is being produced, processed or used in any principal nuclear facility or is outside any such facility. The safeguards required by this article shall be applied to all source or special fissionable material in all peaceful nuclear activities within the territory of such State, under its jurisdiction, or carried out under its control anywhere.

2. Each State Party to the Treaty undertakes not to provide: (a) source or special fissionable material, or (b) equipment or material especially designed or prepared for the processing, use or production of special fissionable material, to any non-nuclear-weapon State for peaceful purposes, unless the source or special fissionable material shall be subject to the safeguards required by this article.
3. The safeguards required by this article shall be implemented in a manner designed to comply with article IV of this Treaty, and to avoid hampering the economic or technological development of the Parties or international cooperation in the field of peaceful nuclear activities, including the international exchange of nuclear material and equipment for the processing, use or production of nuclear material for peaceful purposes in accordance with the provisions of this article and the principle of safeguarding set forth in the Preamble of the Treaty.
4. Non-nuclear-weapon States Party to the Treaty shall conclude agreements with the International Atomic Energy Agency to meet the requirements of this article either individually or together with other States in accordance with the Statute of the International Atomic Energy Agency. Negotiation of such agreements shall commence within 180 days from the original entry into force of this Treaty. For States depositing their instruments of ratification or accession after the 180-day period, negotiation of such agreements shall commence not later than the date of such deposit. Such agreements shall enter into force not later than eighteen months after the date of initiation of negotiations.

ARTICLE IV

1. Nothing in this Treaty shall be interpreted as affecting the inalienable right

of all the Parties to the Treaty to develop research, production and use of nuclear energy for peaceful purposes without discrimination and in conformity with articles I and II of this Treaty.

2. All the Parties to the Treaty undertake to facilitate, and have the right to participate in, the fullest possible exchange of equipment, materials and scientific and technological information for the peaceful uses of nuclear energy. Parties to the Treaty in a position to do so shall also cooperate in contributing alone or together with other States or international organizations to the further development of the applications of nuclear energy for peaceful purposes, especially in the territories of non-nuclear-weapon States Party to the Treaty, with due consideration for the needs of the developing areas of the world.

ARTICLE V

Each party to the Treaty undertakes to take appropriate measures to ensure that, in accordance with this Treaty, under appropriate international observation and through appropriate international procedures, potential benefits from any peaceful applications of nuclear explosions will be made available to non-nuclear-weapon States Party to the Treaty on a nondiscriminatory basis and that the charge to such Parties for the explosive devices used will be as low as possible and exclude any charge for research and development. Non-nuclear-weapon States Party to the Treaty shall be able to obtain such benefits, pursuant to a special international agreement or agreements, through an appropriate international body with adequate representation of non-nuclear-weapon States. Negotiations on this subject shall commence as soon as possible after the Treaty enters into force. Non-nuclear-weapon States Party to the Treaty so desiring may also obtain such benefits pursuant to bilateral agreements.

ARTICLE VI

Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a Treaty on general and complete disarmament under strict and effective international control.

ARTICLE VII

Nothing in this Treaty affects the right of any group of States to conclude regional treaties in order to assure the total absence of nuclear weapons in their respective territories.

ARTICLE VIII

1. Any Party to the Treaty may propose amendments to this Treaty. The text of any proposed amendment shall be submitted to the Depositary Governments which shall circulate it to all Parties to the Treaty. Thereupon, if requested to do so by one-third or more of the Parties to the Treaty, the Depositary Governments shall convene a conference, to which they shall invite all the Parties to the Treaty, to consider such an amendment.
2. Any amendment to this Treaty must be approved by a majority of the votes of all the Parties to the Treaty, including the votes of all nuclear-weapon States Party to the Treaty and all other Parties which, on the date the amendment is circulated, are members of the Board of Governors of the International Atomic Energy Agency. The amendment shall enter into force for each Party that deposits its instrument of ratification of the amendment upon the deposit of such instruments of ratification by a majority of all the Parties, including the instruments of ratification of all nuclear-weapon States Party to the Treaty and all other Parties which, on the date the amendment is

circulated, are members of the Board of Governors of the International Atomic Energy Agency. Thereafter, it shall enter into force for any other Party upon the deposit of its instrument of ratification of the amendment.

3. Five years after the entry into force of this Treaty, a conference of Parties to the Treaty shall be held in Geneva, Switzerland, in order to review the operation of this Treaty with a view to assuring that the purposes of the Preamble and the provisions of the Treaty are being realized. At intervals of five years thereafter, a majority of the Parties to the Treaty may obtain, by submitting a proposal to this effect to the Depositary Governments, the convening of further conferences with the same objective of reviewing the operation of the Treaty.

ARTICLE IX

1. This Treaty shall be open to all States for signature. Any State which does not sign the Treaty before its entry into force in accordance with paragraph 3 of this article may accede to it at any time.
2. This Treaty shall be subject to ratification by signatory States. Instruments of ratification and instruments of accession shall be deposited with the Governments of the United States of America, the United Kingdom of Great Britain and Northern Ireland and the Union of Soviet Socialist Republics, which are hereby designated the Depositary Governments.
3. This Treaty shall enter into force after its ratification by the States, the Governments of which are designated Depositories of the Treaty, and forty other States signatory to this Treaty and the deposit of their instruments of ratification. For the purposes of this Treaty, a nuclear-weapon State is one which has manufactured

and exploded a nuclear weapon or other nuclear explosive device prior to January 1, 1967.

4. For States whose instruments of ratification or accession are deposited subsequent to the entry into force of this Treaty, it shall enter into force on the date of the deposit of their instruments of ratification or accession.
5. The Depositary Governments shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification or of accession, the date of the entry into force of this Treaty, and the date of receipt of any requests for convening a conference or other notices.
6. This Treaty shall be registered by the Depositary Governments pursuant to article 102 of the Charter of the United Nations.

ARTICLE X

1. Each Party shall in exercising its national sovereignty have the right to withdraw from the Treaty if it decides that extraordinary events, related to the subject matter of this Treaty, have jeopardized the supreme interests of its country. It shall give notice of such withdrawal to all other Parties to the Treaty and to the United

Nations Security Council three months in advance. Such notice shall include a statement of the extraordinary events it regards as having jeopardized its supreme interests.

2. Twenty-five years after the entry into force of the Treaty, a conference shall be convened to decide whether the Treaty shall continue in force indefinitely, or shall be extended for an additional fixed period or periods. This decision shall be taken by a majority of the Parties to the Treaty.

ARTICLE XI

This Treaty, the English, Russian, French, Spanish and Chinese texts of which are equally authentic, shall be deposited in the archives of the Depositary Governments. Duly certified copies of this Treaty shall be transmitted by the Depositary Governments to the Governments of the signatory and acceding States.

IN WITNESS WHEREOF the undersigned, duly authorized, have signed this Treaty.

DONE in triplicate, at the cities of Washington, London and Moscow, this first day of July one thousand nine hundred sixty-eight.

Source: Roland Timerbaev, *Russia and Nuclear Non-Proliferation, 1945—1968* (Moscow, 1999), pp.354—359.

2.2. The International Convention for the Suppression of Acts of Nuclear Terrorism

September 14, 2005
New-York

The States Parties to this Convention,

Having in mind the purposes and principles of the Charter of the United Nations concerning the maintenance of international peace and security and the promotion of good-neighbourliness and friendly relations and cooperation among States,

Recalling the Declaration on the Occasion of the Fiftieth Anniversary of the United Nations of 24 October 1995,

Recognizing the right of all States to develop and apply nuclear energy for peaceful purposes and their legitimate interests in the potential benefits to be derived from the peaceful application of nuclear energy,

Bearing in mind the Convention on the Physical Protection of Nuclear Material of 1980,

Deeply concerned about the worldwide esca-

lation of acts of terrorism in all its forms and manifestations,

Recalling the Declaration on Measures to Eliminate International Terrorism annexed to General Assembly resolution 49/60 of 9 December 1994, in which, inter alia, the States Members of the United Nations solemnly reaffirm their unequivocal condemnation of all acts, methods and practices of terrorism as criminal and unjustifiable, wherever and by whomever committed, including those which jeopardize the friendly relations among States and peoples and threaten the territorial integrity and security of States,

Noting that the Declaration also encouraged States to review urgently the scope of the existing international legal provisions on the prevention, repression and elimination of terrorism in all its forms and manifesta-

tions, with the aim of ensuring that there is a comprehensive legal framework covering all aspects of the matter,

Recalling General Assembly resolution 51/210 of 17 December 1996 and the Declaration to Supplement the 1994 Declaration on Measures to Eliminate International Terrorism annexed thereto,

Recalling also that, pursuant to General Assembly resolution 51/210, an ad hoc committee was established to elaborate, inter alia, an international convention for the suppression of acts of nuclear terrorism to supplement related existing international instruments,

Noting that acts of nuclear terrorism may result in the gravest consequences and may pose a threat to international peace and security,

Noting also that existing multilateral legal provisions do not adequately address those attacks,

Being convinced 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,

Noting that the activities of military forces of States are governed by rules of international law outside of the framework of this Convention and that the exclusion of certain actions from the coverage of this Convention does not condone or make lawful otherwise unlawful acts, or preclude prosecution under other laws,

Have agreed as follows:

ARTICLE 1

For the purposes of this Convention:

1. "Radioactive material" means nuclear material and other radioactive substances which contain nuclides which undergo spontaneous disintegration (a process

accompanied by emission of one or more types of ionizing radiation, such as alpha-, beta-, neutron particles and gamma rays) and which may, owing to their radiological or fissile properties, cause death, serious bodily injury or substantial damage to property or to the environment.

2. "Nuclear material" means plutonium, except that with isotopic concentration exceeding 80 per cent in plutonium-238; uranium-233; uranium enriched in the isotope 235 or 233; uranium containing the mixture of isotopes as occurring in nature other than in the form of ore or ore residue; or any material containing one or more of the foregoing; Whereby "uranium enriched in the isotope 235 or 233" means uranium containing the isotope 235 or 233 or both in an amount such that the abundance ratio of the sum of these isotopes to the isotope 238 is greater than the ratio of the isotope 235 to the isotope 238 occurring in nature.

3. "Nuclear facility" means:

- (a) Any nuclear reactor, including reactors installed on vessels, vehicles, aircraft or space objects for use as an energy source in order to propel such vessels, vehicles, aircraft or space objects or for any other purpose;
- (b) Any plant or conveyance being used for the production, storage, processing or transport of radioactive material.

4. "Device" means:

- (a) Any nuclear explosive device; or
- (b) Any radioactive material dispersal or radiation-emitting device which may, owing to its radiological properties, cause death, serious bodily injury or substantial damage to property or to the environment.

5. "State or government facility" includes

any permanent or temporary facility or conveyance that is used or occupied by representatives of a State, members of a Government, the legislature or the judiciary or by officials or employees of a State or any other public authority or entity or by employees or officials of an intergovernmental organization in connection with their official duties.

6. "Military forces of a State" means the armed forces of a State which are organized, trained and equipped under its internal law for the primary purpose of national defence or security and persons acting in support of those armed forces who are under their formal command, control and responsibility.

ARTICLE 2

1. Any person commits an offence within the meaning of this Convention if that person unlawfully and intentionally:
 - (a) Possesses radioactive material or makes or possesses a device:
 - (i) With the intent to cause death or serious bodily injury; or
 - (ii) With the intent to cause substantial damage to property or to the environment;
 - (b) Uses in any way radioactive material or a device, or uses or damages a nuclear facility in a manner which releases or risks the release of radioactive material:
 - (i) With the intent to cause death or serious bodily injury; or
 - (ii) With the intent to cause substantial damage to property or to the environment; or
 - (iii) With the intent to compel a natural or legal person, an international organization or a State to do or refrain from doing an act.

2. Any person also commits an offence if that person:

- (a) Threatens, under circumstances which indicate the credibility of the threat, to commit an offence as set forth in paragraph 1 (b) of the present article; or

- (b) Demands unlawfully and intentionally radioactive material, a device or a nuclear facility by threat, under circumstances which indicate the credibility of the threat, or by use of force.

3. Any person also commits an offence if that person attempts to commit an offence as set forth in paragraph 1 of the present article.

4. Any person also commits an offence if that person:

- (a) Participates as an accomplice in an offence as set forth in paragraph 1, 2 or 3 of the present article; or

- (b) Organizes or directs others to commit an offence as set forth in paragraph 1, 2 or 3 of the present article; or

- (c) In any other way contributes to the commission of one or more offences as set forth in paragraph 1, 2 or 3 of the present article by a group of persons acting with a common purpose; such contribution shall be intentional and either be made with the aim of furthering the general criminal activity or purpose of the group or be made in the knowledge of the intention of the group to commit the offence or offences concerned.

ARTICLE 3

This Convention shall not apply where the offence is committed within a single State, the alleged offender and the victims are nationals of that State, the alleged offender is found in the territory of that State and no other State has a basis under article 9, paragraph 1 or 2,

to exercise jurisdiction, except that the provisions of articles 7, 12, 14, 15, 16 and 17 shall, as appropriate, apply in those cases.

ARTICLE 4

1. Nothing in this Convention shall affect other rights, obligations and responsibilities of States and individuals under international law, in particular the purposes and principles of the Charter of the United Nations and international humanitarian law.
2. The activities of armed forces during an armed conflict, as those terms are understood under international humanitarian law, which are governed by that law are not governed by this Convention, and the activities undertaken by military forces of a State in the exercise of their official duties, inasmuch as they are governed by other rules of international law, are not governed by this Convention.
3. The provisions of paragraph 2 of the present article shall not be interpreted as condoning or making lawful otherwise unlawful acts, or precluding prosecution under other laws.
4. This Convention does not address, nor can it be interpreted as addressing, in any way, the issue of the legality of the use or threat of use of nuclear weapons by States.

ARTICLE 5

Each State Party shall adopt such measures as may be necessary:

- (a) To establish as criminal offences under its national law the offences set forth in article 2;
- (b) To make those offences punishable by appropriate penalties which take into account the grave nature of these offences.

ARTICLE 6

Each State Party shall adopt such measures as may be necessary, including, where appropriate, domestic legislation, to ensure that criminal acts within the scope of this Convention, in particular where they are intended or calculated to provoke a state of terror in the general public or in a group of persons or particular persons, are under no circumstances justifiable by considerations of a political, philosophical, ideological, racial, ethnic, religious or other similar nature and are punished by penalties consistent with their grave nature.

ARTICLE 7

1. States Parties shall cooperate by:
 - (a) Taking all practicable measures, including, if necessary, adapting their national law, to prevent and counter preparations in their respective territories for the commission within or outside their territories of the offences set forth in article 2, including measures to prohibit in their territories illegal activities of persons, groups and organizations that encourage, instigate, organize, knowingly finance or knowingly provide technical assistance or information or engage in the perpetration of those offences;
 - (b) Exchanging accurate and verified information in accordance with their national law and in the manner and subject to the conditions specified herein, and coordinating administrative and other measures taken as appropriate to detect, prevent, suppress and investigate the offences set forth in article 2 and also in order to institute criminal proceedings against persons alleged to have committed those crimes. In particular, a State Party shall take appropriate measures in order to inform without delay the other States referred to in article 9 in respect of the com-

mission of the offences set forth in article 2 as well as preparations to commit such offences about which it has learned, and also to inform, where appropriate, international organizations.

2. States Parties shall take appropriate measures consistent with their national law to protect the confidentiality of any information which they receive in confidence by virtue of the provisions of this Convention from another State Party or through participation in an activity carried out for the implementation of this Convention. If States Parties provide information to international organizations in confidence, steps shall be taken to ensure that the confidentiality of such information is protected.
3. States Parties shall not be required by this Convention to provide any information which they are not permitted to communicate pursuant to national law or which would jeopardize the security of the State concerned or the physical protection of nuclear material.
4. States Parties shall inform the Secretary-General of the United Nations of their competent authorities and liaison points responsible for sending and receiving the information referred to in the present article. The Secretary-General of the United Nations shall communicate such information regarding competent authorities and liaison points to all States Parties and the International Atomic Energy Agency. Such authorities and liaison points must be accessible on a continuous basis.

ARTICLE 8

For purposes of preventing offences under this Convention, States Parties shall make every effort to adopt appropriate measures to ensure the protection of radioactive material, taking into account relevant recommen-

dations and functions of the International Atomic Energy Agency.

ARTICLE 9

1. Each State Party shall take such measures as may be necessary to establish its jurisdiction over the offences set forth in article 2 when:
 - (a) The offence is committed in the territory of that State; or
 - (b) The offence is committed on board a vessel flying the flag of that State or an aircraft which is registered under the laws of that State at the time the offence is committed; or
 - (c) The offence is committed by a national of that State.
2. A State Party may also establish its jurisdiction over any such offence when:
 - (a) The offence is committed against a national of that State; or
 - (b) The offence is committed against a State or government facility of that State abroad, including an embassy or other diplomatic or consular premises of that State; or
 - (c) The offence is committed by a stateless person who has his or her habitual residence in the territory of that State; or
 - (d) The offence is committed in an attempt to compel that State to do or abstain from doing any act; or
 - (e) The offence is committed on board an aircraft which is operated by the Government of that State.
3. Upon ratifying, accepting, approving or acceding to this Convention, each State Party shall notify the Secretary-General of the United Nations of the jurisdiction it has established under its national law in accordance with paragraph 2 of the

present article. Should any change take place, the State Party concerned shall immediately notify the Secretary-General.

4. Each State Party shall likewise take such measures as may be necessary to establish its jurisdiction over the offences set forth in article 2 in cases where the alleged offender is present in its territory and it does not extradite that person to any of the States Parties which have established their jurisdiction in accordance with paragraph 1 or 2 of the present article.
5. This Convention does not exclude the exercise of any criminal jurisdiction established by a State Party in accordance with its national law.

ARTICLE 10

1. Upon receiving information that an offence set forth in article 2 has been committed or is being committed in the territory of a State Party or that a person who has committed or who is alleged to have committed such an offence may be present in its territory, the State Party concerned shall take such measures as may be necessary under its national law to investigate the facts contained in the information.
2. Upon being satisfied that the circumstances so warrant, the State Party in whose territory the offender or alleged offender is present shall take the appropriate measures under its national law so as to ensure that person's presence for the purpose of prosecution or extradition.
3. Any person regarding whom the measures referred to in paragraph 2 of the present article are being taken shall be entitled:
 - (a) To communicate without delay with the nearest appropriate representative of the State of which that person is a na-

tional or which is otherwise entitled to protect that person's rights or, if that person is a stateless person, the State in the territory of which that person habitually resides;

- (b) To be visited by a representative of that State;
- (c) To be informed of that person's rights under subparagraphs (a) and (b).
4. The rights referred to in paragraph 3 of the present article shall be exercised in conformity with the laws and regulations of the State in the territory of which the offender or alleged offender is present, subject to the provision that the said laws and regulations must enable full effect to be given to the purposes for which the rights accorded under paragraph 3 are intended.
5. The provisions of paragraphs 3 and 4 of the present article shall be without prejudice to the right of any State Party having a claim to jurisdiction in accordance with article 9, paragraph 1 (c) or 2 (c), to invite the International Committee of the Red Cross to communicate with and visit the alleged offender.
6. When a State Party, pursuant to the present article, has taken a person into custody, it shall immediately notify, directly or through the Secretary-General of the United Nations, the States Parties which have established jurisdiction in accordance with article 9, paragraphs 1 and 2, and, if it considers it advisable, any other interested States Parties, of the fact that that person is in custody and of the circumstances which warrant that person's detention. The State which makes the investigation contemplated in paragraph 1 of the present article shall promptly inform the said States Parties of its findings and shall indicate whether it intends to exercise jurisdiction.

ARTICLE 11

1. The State Party in the territory of which the alleged offender is present shall, in cases to which article 9 applies, if it does not extradite that person, be obliged, without exception whatsoever and whether or not the offence was committed in its territory, to submit the case without undue delay to its competent authorities for the purpose of prosecution, through proceedings in accordance with the laws of that State. Those authorities shall take their decision in the same manner as in the case of any other offence of a grave nature under the law of that State.
 2. Whenever a State Party is permitted under its national law to extradite or otherwise surrender one of its nationals only upon the condition that the person will be returned to that State to serve the sentence imposed as a result of the trial or proceeding for which the extradition or surrender of the person was sought, and this State and the State seeking the extradition of the person agree with this option and other terms they may deem appropriate, such a conditional extradition or surrender shall be sufficient to discharge the obligation set forth in paragraph 1 of the present article.
2. When a State Party which makes extradition conditional on the existence of a treaty receives a request for extradition from another State Party with which it has no extradition treaty, the requested State Party may, at its option, consider this Convention as a legal basis for extradition in respect of the offences set forth in article 2. Extradition shall be subject to the other conditions provided by the law of the requested State.
 3. States Parties which do not make extradition conditional on the existence of a treaty shall recognize the offences set forth in article 2 as extraditable offences between themselves, subject to the conditions provided by the law of the requested State.
 4. If necessary, the offences set forth in article 2 shall be treated, for the purposes of extradition between States Parties, as if they had been committed not only in the place in which they occurred but also in the territory of the States that have established jurisdiction in accordance with article 9, paragraphs 1 and 2.

ARTICLE 12

Any person who is taken into custody or regarding whom any other measures are taken or proceedings are carried out pursuant to this Convention shall be guaranteed fair treatment, including enjoyment of all rights and guarantees in conformity with the law of the State in the territory of which that person is present and applicable provisions of international law, including international law of human rights.

ARTICLE 13

1. The offences set forth in article 2 shall be

deemed to be included as extraditable offences in any extradition treaty existing between any of the States Parties before the entry into force of this Convention. States Parties undertake to include such offences as extraditable offences in every extradition treaty to be subsequently concluded between them.

5. The provisions of all extradition treaties and arrangements between States Parties with regard to offences set forth in article 2 shall be deemed to be modified as between States Parties to the extent that they are incompatible with this Convention.

ARTICLE 14

1. States Parties shall afford one another the greatest measure of assistance in con-

nection with investigations or criminal or extradition proceedings brought in respect of the offences set forth in article 2, including assistance in obtaining evidence at their disposal necessary for the proceedings.

2. States Parties shall carry out their obligations under paragraph 1 of the present article in conformity with any treaties or other arrangements on mutual legal assistance that may exist between them. In the absence of such treaties or arrangements, States Parties shall afford one another assistance in accordance with their national law.

ARTICLE 15

None of the offences set forth in article 2 shall be regarded, for the purposes of extradition or mutual legal assistance, as a political offence or as an offence connected with a political offence or as an offence inspired by political motives. Accordingly, a request for extradition or for mutual legal assistance based on such an offence may not be refused on the sole ground that it concerns a political offence or an offence connected with a political offence or an offence inspired by political motives.

ARTICLE 16

Nothing in this Convention shall be interpreted as imposing an obligation to extradite or to afford mutual legal assistance if the requested State Party has substantial grounds for believing that the request for extradition for offences set forth in article 2 or for mutual legal assistance with respect to such offences has been made for the purpose of prosecuting or punishing a person on account of that person's race, religion, nationality, ethnic origin or political opinion or that compliance with the request would cause prejudice to that person's position for any of these reasons.

ARTICLE 17

1. A person who is being detained or is serving a sentence in the territory of one State Party whose presence in another State Party is requested for purposes of testimony, identification or otherwise providing assistance in obtaining evidence for the investigation or prosecution of offences under this Convention may be transferred if the following conditions are met:
 - (a) The person freely gives his or her informed consent; and
 - (b) The competent authorities of both States agree, subject to such conditions as those States may deem appropriate.
2. For the purposes of the present article:
 - (a) The State to which the person is transferred shall have the authority and obligation to keep the person transferred in custody, unless otherwise requested or authorized by the State from which the person was transferred;
 - (b) The State to which the person is transferred shall without delay implement its obligation to return the person to the custody of the State from which the person was transferred as agreed beforehand, or as otherwise agreed, by the competent authorities of both States;
 - (c) The State to which the person is transferred shall not require the State from which the person was transferred to initiate extradition proceedings for the return of the person;
 - (d) The person transferred shall receive credit for service of the sentence being served in the State from which he or she was transferred for time spent in the custody of the State to which he or she was transferred.
3. Unless the State Party from which a person is to be transferred in accordance with the present article so agrees, that person,

whatever his or her nationality, shall not be prosecuted or detained or subjected to any other restriction of his or her personal liberty in the territory of the State to which that person is transferred in respect of acts or convictions anterior to his or her departure from the territory of the State from which such person was transferred.

ARTICLE 18

1. Upon seizing or otherwise taking control of radioactive material, devices or nuclear facilities, following the commission of an offence set forth in article 2, the State Party in possession of such items shall:
 - (a) Take steps to render harmless the radioactive material, device or nuclear facility;
 - (b) Ensure that any nuclear material is held in accordance with applicable International Atomic Energy Agency safeguards; and
 - (c) Have regard to physical protection recommendations and health and safety standards published by the International Atomic Energy Agency.
2. Upon the completion of any proceedings connected with an offence set forth in article 2, or sooner if required by international law, any radioactive material, device or nuclear facility shall be returned, after consultations (in particular, regarding modalities of return and storage) with the States Parties concerned to the State Party to which it belongs, to the State Party of which the natural or legal person owning such radioactive material, device or facility is a national or resident, or to the State Party from whose territory it was stolen or otherwise unlawfully obtained.
3.
 - (a) Where a State Party is prohibited by national or international law from returning or accepting such radioactive material, device or nuclear facility or where the States Parties concerned so agree, subject to paragraph 3 (b) of the present article, the State Party in possession of the radioactive material, devices or nuclear facilities shall continue to take the steps described in paragraph 1 of the present article; such radioactive material, devices or nuclear facilities shall be used only for peaceful purposes;
 - (b) Where it is not lawful for the State Party in possession of the radioactive material, devices or nuclear facilities to possess them, that State shall ensure that they are placed as soon as possible in the possession of a State for which such possession is lawful and which, where appropriate, has provided assurances consistent with the requirements of paragraph 1 of the present article in consultation with that State, for the purpose of rendering it harmless; such radioactive material, devices or nuclear facilities shall be used only for peaceful purposes.
4. If the radioactive material, devices or nuclear facilities referred to in paragraphs 1 and 2 of the present article do not belong to any of the States Parties or to a national or resident of a State Party or were not stolen or otherwise unlawfully obtained from the territory of a State Party, or if no State is willing to receive such items pursuant to paragraph 3 of the present article, a separate decision concerning its disposition shall, subject to paragraph 3 (b) of the present article, be taken after consultations between the States concerned and any relevant international organizations.
5. For the purposes of paragraphs 1, 2, 3 and 4 of the present article, the State Party in possession of the radioactive material, device or nuclear facility may request the assistance and cooperation of other States Parties, in particular the States Parties concerned, and any relevant international organizations, in particular

the International Atomic Energy Agency. States Parties and the relevant international organizations are encouraged to provide assistance pursuant to this paragraph to the maximum extent possible.

6. The States Parties involved in the disposition or retention of the radioactive material, device or nuclear facility pursuant to the present article shall inform the Director General of the International Atomic Energy Agency of the manner in which such an item was disposed of or retained. The Director General of the International Atomic Energy Agency shall transmit the information to the other States Parties.
7. In the event of any dissemination in connection with an offence set forth in article 2, nothing in the present article shall affect in any way the rules of international law governing liability for nuclear damage, or other rules of international law.

ARTICLE 19

The State Party where the alleged offender is prosecuted shall, in accordance with its national law or applicable procedures, communicate the final outcome of the proceedings to the Secretary-General of the United Nations, who shall transmit the information to the other States Parties.

ARTICLE 20

States Parties shall conduct consultations with one another directly or through the Secretary-General of the United Nations, with the assistance of international organizations as necessary, to ensure effective implementation of this Convention.

ARTICLE 21

The States Parties shall carry out their obligations under this Convention in a manner consistent with the principles of sovereign equality and territorial integrity of States

and that of non-intervention in the domestic affairs of other States.

ARTICLE 22

Nothing in this Convention entitles a State Party to undertake in the territory of another State Party the exercise of jurisdiction and performance of functions which are exclusively reserved for the authorities of that other State Party by its national law.

ARTICLE 23

1. Any dispute between two or more States Parties concerning the interpretation or application of this Convention which cannot be settled through negotiation within a reasonable time shall, at the request of one of them, be submitted to arbitration. If, within six months of the date of the request for arbitration, the parties are unable to agree on the organization of the arbitration, any one of those parties may refer the dispute to the International Court of Justice, by application, in conformity with the Statute of the Court.
2. Each State may, at the time of signature, ratification, acceptance or approval of this Convention or accession thereto, declare that it does not consider itself bound by paragraph 1 of the present article. The other States Parties shall not be bound by paragraph 1 with respect to any State Party which has made such a reservation.
3. Any State which has made a reservation in accordance with paragraph 2 of the present article may at any time withdraw that reservation by notification to the Secretary-General of the United Nations.

ARTICLE 24

1. This Convention shall be open for signature by all States from 14 September 2005 until 31 December 2006 at United Nations Headquarters in New York.

2. This Convention is subject to ratification, acceptance or approval. The instruments of ratification, acceptance or approval shall be deposited with the Secretary-General of the United Nations.
3. This Convention shall be open to accession by any State. The instruments of accession shall be deposited with the Secretary-General of the United Nations.

ARTICLE 25

1. This Convention shall enter into force on the thirtieth day following the date of the deposit of the twenty-second instrument of ratification, acceptance, approval or accession with the Secretary-General of the United Nations.
2. For each State ratifying, accepting, approving or acceding to the Convention after the deposit of the twenty-second instrument of ratification, acceptance, approval or accession, the Convention shall enter into force on the thirtieth day after deposit by such State of its instrument of ratification, acceptance, approval or accession.

ARTICLE 26

1. A State Party may propose an amendment to this Convention. The proposed amendment shall be submitted to the depositary, who circulates it immediately to all States Parties.
2. If the majority of the States Parties request the depositary to convene a conference to consider the proposed amendments, the depositary shall invite all States Parties to attend such a conference to begin no sooner than three months after the invitations are issued.
3. The conference shall make every effort to ensure amendments are adopted by consensus. Should this not be possible, amendments shall be adopted by a two-

thirds majority of all States Parties. Any amendment adopted at the conference shall be promptly circulated by the depositary to all States Parties.

4. The amendment adopted pursuant to paragraph 3 of the present article shall enter into force for each State Party that deposits its instrument of ratification, acceptance, accession or approval of the amendment on the thirtieth day after the date on which two thirds of the States Parties have deposited their relevant instrument. Thereafter, the amendment shall enter into force for any State Party on the thirtieth day after the date on which that State deposits its relevant instrument.

ARTICLE 27

1. Any State Party may denounce this Convention by written notification to the Secretary-General of the United Nations.
2. Denunciation shall take effect one year following the date on which notification is received by the Secretary-General of the United Nations.

ARTICLE 28

The original of this Convention, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Secretary-General of the United Nations, who shall send certified copies thereof to all States.

IN WITNESS WHEREOF, the undersigned, being duly authorized thereto by their respective Governments, have signed this Convention, opened for signature at United Nations Headquarters in New York on 14 September 2005.

Source: The International Convention for the Suppression of Acts of Nuclear Terrorism/ United Nations' official site// http://untreaty.un.org/English/Terrorism/English_18_15.pdf.

2.3. United Nations Security Council Resolution 1540

*April 28, 2004
New-York*

The Security Council,

Affirming that proliferation of nuclear, chemical and biological weapons, as well as their means of delivery¹, constitutes a threat to international peace and security,

Reaffirming, in this context, the Statement of its President adopted at the Council's meeting at the level of Heads of State and Government on 31 January 1992 (S/23500), including the need for all Member States to fulfill their obligations in relation to arms control and disarmament and to prevent proliferation in all its aspects of all weapons of mass destruction,

Recalling also that the Statement underlined the need for all Member States to resolve peacefully in accordance with the Charter

any problems in that context threatening or disrupting the maintenance of regional and global stability,

Affirming its resolve to take appropriate and effective actions against any threat to international peace and security caused by the proliferation of nuclear, chemical and biological weapons and their means of delivery, in conformity with its primary responsibilities, as provided for in the United Nations Charter,

Affirming its support for the multilateral treaties whose aim is to eliminate or prevent the proliferation of nuclear, chemical or biological weapons and the importance for all States parties to these treaties to implement them fully in order to promote international stability,

Welcoming efforts in this context by multilateral arrangements which contribute to non-proliferation,

Affirming that prevention of proliferation of

¹ Definitions for the purpose of this resolution only:
Means of delivery: missiles, rockets and other unmanned systems capable of delivering nuclear, chemical, or biological weapons, that are specially designed for such use.

nuclear, chemical and biological weapons should not hamper international cooperation in materials, equipment and technology for peaceful purposes while goals of peaceful utilization should not be used as a cover for proliferation,

Gravely concerned by the threat of terrorism and the risk that non-State actors² such as those identified in the United Nations list established and maintained by the Committee established under Security Council resolution 1267 and those to whom resolution 1373 applies, may acquire, develop, traffic in or use nuclear, chemical and biological weapons and their means of delivery,

Gravely concerned by the threat of illicit trafficking in nuclear, chemical, or biological weapons and their means of delivery, and related materials³, which adds a new dimension to the issue of proliferation of such weapons and also poses a threat to international peace and security,

Recognizing the need to enhance coordination of efforts on national, subregional, regional and international levels in order to strengthen a global response to this serious challenge and threat to international security,

Recognizing that most States have undertaken binding legal obligations under treaties to which they are parties, or have made other commitments aimed at preventing the proliferation of nuclear, chemical or biological weapons, and have taken effective measures to account for, secure and physically protect sensitive materials, such as those required by the Convention on the Physical Protection of

Nuclear Materials and those recommended by the IAEA Code of Conduct on the Safety and Security of Radioactive Sources,

Recognizing further the urgent need for all States to take additional effective measures to prevent the proliferation of nuclear, chemical or biological weapons and their means of delivery,

Encouraging all Member States to implement fully the disarmament treaties and agreements to which they are party,

Reaffirming the need to combat by all means, in accordance with the Charter of the United Nations, threats to international peace and security caused by terrorist acts,

Determined to facilitate henceforth an effective response to global threats in the area of non-proliferation,

Acting under Chapter VII of the Charter of the United Nations,

1. *Decides that* all States shall refrain from providing any form of support to non-State actors that attempt to develop, acquire, manufacture, possess, transport, transfer or use nuclear, chemical or biological weapons and their means of delivery;
2. *Decides also* that all States, in accordance with their national procedures, shall adopt and enforce appropriate effective laws which prohibit any non-State actor to manufacture, acquire, possess, develop, transport, transfer or use nuclear, chemical or biological weapons and their means of delivery, in particular for terrorist purposes, as well as attempts to engage in any of the foregoing activities, participate in them as an accomplice, assist or finance them;
3. *Decides also* that all States shall take and enforce effective measures to establish domestic controls to prevent the proliferation of nuclear, chemical, or biological

2 Non-State actor: individual or entity, not acting under the lawful authority of any State in conducting activities which come within the scope of this resolution.

3 Related materials: materials, equipment and technology covered by relevant multilateral treaties and arrangements, or included on national control lists, which could be used for the design, development, production or use of nuclear, chemical and biological weapons and their means of delivery.

cal weapons and their means of delivery, including by establishing appropriate controls over related materials and to this end shall:

- (a) Develop and maintain appropriate effective measures to account for and secure such items in production, use, storage or transport;
 - (b) Develop and maintain appropriate effective physical protection measures;
 - (c) Develop and maintain appropriate effective border controls and law enforcement efforts to detect, deter, prevent and combat, including through international cooperation when necessary, the illicit trafficking and brokering in such items in accordance with their national legal authorities and legislation and consistent with international law;
 - (d) Establish, develop, review and maintain appropriate effective national export and trans-shipment controls over such items, including appropriate laws and regulations to control export, transit, trans-shipment and re-export and controls on providing funds and services related to such export and trans-shipment such as financing, and transporting that would contribute to proliferation, as well as establishing end-user controls; and establishing and enforcing appropriate criminal or civil penalties for violations of such export control laws and regulations;
4. *Decides* to establish, in accordance with rule 28 of its provisional rules of procedure, for a period of no longer than two years, a Committee of the Security Council, consisting of all members of the Council, which will, calling as appropriate on other expertise, report to the Security Council for its examination, on the implementation of this resolution, and to this end calls upon States to present a first report no later than six months from the adoption of this resolution to the Committee on steps they have taken or intend to take to implement this resolution;
 5. *Decides* that none of the obligations set forth in this resolution shall be interpreted so as to conflict with or alter the rights and obligations of State Parties to the Nuclear Non-Proliferation Treaty, the Chemical Weapons Convention and the Biological and Toxin Weapons Convention or alter the responsibilities of the International Atomic Energy Agency or the Organization for the Prohibition of Chemical Weapons;
 6. *Recognizes* the utility in implementing this resolution of effective national control lists and calls upon all Member States, when necessary, to pursue at the earliest opportunity the development of such lists;
 7. *Recognizes* that some States may require assistance in implementing the provisions of this resolution within their territories and invites States in a position to do so to offer assistance as appropriate in response to specific requests to the States lacking the legal and regulatory infrastructure, implementation experience and/or resources for fulfilling the above provisions;
 8. *Calls upon* all States:
 - (a) To promote the universal adoption and full implementation, and, where necessary, strengthening of multilateral treaties to which they are parties, whose aim is to prevent the proliferation of nuclear, biological or chemical weapons;
 - (b) To adopt national rules and regulations, where it has not yet been done, to ensure compliance with their commitments under the key multilateral nonproliferation treaties;

- (c) To renew and fulfill their commitment to multilateral cooperation, in particular within the framework of the International Atomic Energy Agency, the Organization for the Prohibition of Chemical Weapons and the Biological and Toxin Weapons Convention, as important means of pursuing and achieving their common objectives in the area of non-proliferation and of promoting international cooperation for peaceful purposes;
 - (d) To develop appropriate ways to work with and inform industry and the public regarding their obligations under such laws;
9. *Calls upon* all States to promote dialogue and cooperation on nonproliferation so as to address the threat posed by proliferation of nuclear, chemical, or biological weapons, and their means of delivery;
 10. *Further to counter* that threat, calls upon all States, in accordance with their national legal authorities and legislation and consistent with international law, to take cooperative action to prevent illicit trafficking in nuclear, chemical or biological weapons, their means of delivery, and related materials;
 11. *Expresses* its intention to monitor closely the implementation of this resolution and, at the appropriate level, to take further decisions which may be required to this end;
 12. *Decides* to remain seized of the matter.
- Source:** United Nations Security Council Resolution 1540/ United Nations' official site// <http://daccessdds.un.org/doc/UN-DOC/GEN/N04/328/43/PDF/N0432843.pdf?OpenElement> .

2.4. United Nations Security Council Resolution 1718 (North Korea)

October 14, 2006
New-York

The Security Council,

Recalling its previous relevant resolutions, including resolution 825 (1993), resolution 1540 (2004) and, in particular, resolution 1695 (2006), as well as the statement of its President of 6 October 2006 (S/PRST/2006/41),

Reaffirming that proliferation of nuclear, chemical and biological weapons, as well as their means of delivery, constitutes a threat to international peace and security,

Expressing the gravest concern at the claim by the Democratic People's Republic of Korea (DPRK) that it has conducted a test of a nuclear weapon on 9 October 2006, and at the challenge such a test constitutes to the Treaty on the Non-Proliferation of Nuclear Weapons and to international efforts aimed at strengthening the global regime of non-proliferation of nuclear weapons, and the

danger it poses to peace and stability in the region and beyond,

Expressing its firm conviction that the international regime on the non-proliferation of nuclear weapons should be maintained and recalling that the DPRK cannot have the status of a nuclear-weapon state in accordance with the Treaty on the Non-Proliferation of Nuclear Weapons,

Deploing the DPRK's announcement of withdrawal from the Treaty on the Non-Proliferation of Nuclear Weapons and its pursuit of nuclear weapons,

Deploing further that the DPRK has refused to return to the Six-Party talks without precondition,

Endorsing the Joint Statement issued on 19 September 2005 by China, the DPRK, Japan, the Republic of Korea, the Russian Federation and the United States,

Underlining the importance that the DPRK respond to other security and humanitarian concerns of the international community,

Expressing profound concern that the test claimed by the DPRK has generated increased tension in the region and beyond, and

Determining therefore that there is a clear threat to international peace and security,

Acting under Chapter VII of the Charter of the United Nations, and taking measures under its Article 41,

1. *Condemns* the nuclear test proclaimed by the DPRK on 9 October 2006 in flagrant disregard of its relevant resolutions, in particular resolution 1695 (2006), as well as of the statement of its President of 6 October 2006 (S/PRST/2006/41), including that such a test would bring universal condemnation of the international community and would represent a clear threat to international peace and security;
2. *Demands* that the DPRK not conduct any further nuclear test or launch of a ballistic missile;
3. *Demands* that the DPRK immediately retract its announcement of withdrawal from the Treaty on the Non-Proliferation of Nuclear Weapons;
4. *Demands* further that the DPRK return to the Treaty on the Non-Proliferation of Nuclear Weapons and International Atomic Energy Agency (IAEA) safeguards, and underlines the need for all States Parties to the Treaty on the Non-Proliferation of Nuclear Weapons to continue to comply with their Treaty obligations;
5. *Decides* that the DPRK shall suspend all activities related to its ballistic missile programme and in this context re-establish its pre-existing commitments to a moratorium on missile launching;
6. *Decides* that the DPRK shall abandon all nuclear weapons and existing nuclear programmes in a complete, verifiable and irreversible manner, shall act strictly in accordance with the obligations applicable to parties under the Treaty on the Non-Proliferation of Nuclear Weapons and the terms and conditions of its International Atomic Energy Agency (IAEA) Safeguards Agreement (IAEA INFCIRC/403) and shall provide the IAEA transparency measures extending beyond these requirements, including such access to individuals, documentation, equipments and facilities as may be required and deemed necessary by the IAEA;
7. *Decides* also that the DPRK shall abandon all other existing weapons of mass destruction and ballistic missile programmes in a complete, verifiable and irreversible manner;
8. *Decides* that:
 - (a) All Member States shall prevent the direct or indirect supply, sale or transfer to the DPRK, through their territories or by their nationals, or using their flag vessels or aircraft, and whether or not originating in their territories, of:
 - (i) Any battle tanks, armoured combat vehicles, large calibre artillery systems, combat aircraft, attack helicopters, warships, missiles or missile systems as defined for the purpose of the United Nations Register on Conventional Arms, or related materiel including spare parts, or items as determined by the Security Council or the Committee established by paragraph 12 below (the Committee);
 - (ii) All items, materials, equipment, goods and technology as set out in the lists in documents S/2006/814 and S/2006/815, unless within 14 days of adoption of this resolution the Committee has amended

or completed their provisions also taking into account the list in document S/2006/816, as well as other items, materials, equipment, goods and technology, determined by the Security Council or the Committee, which could contribute to DPRK's nuclear-related, ballistic missile-related or other weapons of mass destruction related programmes;

(iii) Luxury goods;

(b) The DPRK shall cease the export of all items covered in subparagraphs (a) (i) and (a) (ii) above and that all Member States shall prohibit the procurement of such items from the DPRK by their nationals, or using their flagged vessels or aircraft, and whether or not originating in the territory of the DPRK;

(c) All Member States shall prevent any transfers to the DPRK by their nationals or from their territories, or from the DPRK by its nationals or from its territory, of technical training, advice, services or assistance related to the provision, manufacture, maintenance or use of the items in subparagraphs (a) (i) and (a) (ii) above;

(d) All Member States shall, in accordance with their respective legal processes, freeze immediately the funds, other financial assets and economic resources which are on their territories at the date of the adoption of this resolution or at any time thereafter, that are owned or controlled, directly or indirectly, by the persons or entities designated by the Committee or by the Security Council as being engaged in or providing support for, including through other illicit means, DPRK's nuclear-related, other weapons of mass destruction-related and ballistic missile related programmes, or by persons or entities acting on their behalf or at their direction, and ensure that

any funds, financial assets or economic resources are prevented from being made available by their nationals or by any persons or entities within their territories, to or for the benefit of such persons or entities;

(e) All Member States shall take the necessary steps to prevent the entry into or transit through their territories of the persons designated by the Committee or by the Security Council as being responsible for, including through supporting or promoting, DPRK policies in relation to the DPRK's nuclear-related, ballistic missile-related and other weapons of mass destruction-related programmes, together with their family members, provided that nothing in this paragraph shall oblige a state to refuse its own nationals entry into its territory;

(f) In order to ensure compliance with the requirements of this paragraph, and thereby preventing illicit trafficking in nuclear, chemical or biological weapons, their means of delivery and related materials, all Member States are called upon to take, in accordance with their national authorities and legislation, and consistent with international law, cooperative action including through inspection of cargo to and from the DPRK, as necessary;

9. *Decides* that the provisions of paragraph 8 (d) above do not apply to financial or other assets or resources that have been determined by relevant States:

(a) To be necessary for basic expenses, including payment for foodstuffs, rent or mortgage, medicines and medical treatment, taxes, insurance premiums, and public utility charges, or exclusively for payment of reasonable professional fees and reimbursement of incurred expenses associated with the provision of legal services, or fees or service charges, in ac-

cordance with national laws, for routine holding or maintenance of frozen funds, other financial assets and economic resources, after notification by the relevant States to the Committee of the intention to authorize, where appropriate, access to such funds, other financial assets and economic resources and in the absence of a negative decision by the Committee within five working days of such notification;

- (b) To be necessary for extraordinary expenses, provided that such determination has been notified by the relevant States to the Committee and has been approved by the Committee; or
- (c) To be subject of a judicial, administrative or arbitral lien or judgment, in which case the funds, other financial assets and economic resources may be used to satisfy that lien or judgment provided that the lien or judgment was entered prior to the date of the present resolution, is not for the benefit of a person referred to in paragraph 8 (d) above or an individual or entity identified by the Security Council or the Committee, and has been notified by the relevant States to the Committee;

10. *Decides* that the measures imposed by paragraph 8 (e) above shall not apply where the Committee determines on a case-by-case basis that such travel is justified on the grounds of humanitarian need, including religious obligations, or where the Committee concludes that an exemption would otherwise further the objectives of the present resolution;

11. *Calls upon* all Member States to report to the Security Council within thirty days of the adoption of this resolution on the steps they have taken with a view to implementing effectively the provisions of paragraph 8 above;

12. *Decides* to establish, in accordance with

rule 28 of its provisional rules of procedure, a Committee of the Security Council consisting of all the members of the Council, to undertake the following tasks:

- (a) To seek from all States, in particular those producing or possessing the items, materials, equipment, goods and technology referred to in paragraph 8 (a) above, information regarding the actions taken by them to implement effectively the measures imposed by paragraph 8 above of this resolution and whatever further information it may consider useful in this regard;
- (b) To examine and take appropriate action on information regarding alleged violations of measures imposed by paragraph 8 of this resolution;
- (c) To consider and decide upon requests for exemptions set out in paragraphs 9 and 10 above;
- (d) To determine additional items, materials, equipment, goods and technology to be specified for the purpose of paragraphs 8 (a) (i) and 8 (a) (ii) above;
- (e) To designate additional individuals and entities subject to the measures imposed by paragraphs 8 (d) and 8 (e) above;
- (f) To promulgate guidelines as may be necessary to facilitate the implementation of the measures imposed by this resolution;
- (g) To report at least every 90 days to the Security Council on its work, with its observations and recommendations, in particular on ways to strengthen the effectiveness of the measures imposed by paragraph 8 above;

13. *Welcomes and encourages further* the efforts by all States concerned to intensify their diplomatic efforts, to refrain from any actions that might aggravate tension

and to facilitate the early resumption of the Six-Party Talks, with a view to the expeditious implementation of the Joint Statement issued on 19 September 2005 by China, the DPRK, Japan, the Republic of Korea, the Russian Federation and the United States, to achieve the verifiable denuclearization of the Korean Peninsula and to maintain peace and stability on the Korean Peninsula and in north-east Asia;

14. *Calls upon* the DPRK to return immediately to the Six-Party Talks without precondition and to work towards the expeditious implementation of the Joint Statement issued on 19 September 2005 by China, the DPRK, Japan, the Republic of Korea, the Russian Federation and the United States;
15. *Affirms* that it shall keep DPRK's actions

under continuous review and that it shall be prepared to review the appropriateness of the measures contained in paragraph 8 above, including the strengthening, modification, suspension or lifting of the measures, as may be needed at that time in light of the DPRK's compliance with the provisions of the resolution;

16. *Underlines* that further decisions will be required, should additional measures be necessary;
17. *Decides* to remain actively seized of the matter.

Source: United Nations Security Council Resolution 1718/ United Nations' official site// <http://daccessdds.un.org/doc/UN-DOC/GEN/N06/572/07/PDF/N0657207.pdf?OpenElement> .

2.5. United Nations Security Council Resolution 1737 (Iran)

*December 23, 2006
New-York*

The Security Council,

Recalling the Statement of its President, S/PRST/2006/15, of 29 March 2006, and its resolution 1696 (2006) of 31 July 2006,

Reaffirming its commitment to the Treaty on the Non-Proliferation of Nuclear Weapons, and recalling the right of States Party, in conformity with Articles I and II of that Treaty, to develop research, production and use of nuclear energy for peaceful purposes without discrimination,

Reiterating its serious concern over the many reports of the IAEA Director General and resolutions of the IAEA Board of Governors related to Iran's nuclear programme, reported to it by the IAEA Director General, including IAEA Board resolution GOV/2006/14,

Reiterating its serious concern that the IAEA Director General's report of 27 February 2006 (GOV/2006/15) lists a number of outstanding issues and concerns on Iran's nuclear pro-

gramme, including topics which could have a military nuclear dimension, and that the IAEA is unable to conclude that there are no undeclared nuclear materials or activities in Iran,

Reiterating its serious concern over the IAEA Director General's report of 28 April 2006 (GOV/2006/27) and its findings, including that, after more than three years of Agency efforts to seek clarity about all aspects of Iran's nuclear programme, the existing gaps in knowledge continue to be a matter of concern, and that the IAEA is unable to make progress in its efforts to provide assurances about the absence of undeclared nuclear material and activities in Iran,

Noting with serious concern that, as confirmed by the IAEA Director General's reports of 8 June 2006 (GOV/2006/38), 31 August 2006 (GOV/2006/53) and 14 November 2006 (GOV/2006/64), Iran has not established full and sustained suspension of all enrichment-related and reprocessing ac-

tivities as set out in resolution 1696 (2006), nor resumed its cooperation with the IAEA under the Additional Protocol, nor taken the other steps required of it by the IAEA Board of Governors, nor complied with the provisions of Security Council resolution 1696 (2006) and which are essential to build confidence, and deploring Iran's refusal to take these steps,

Emphasizing the importance of political and diplomatic efforts to find a negotiated solution guaranteeing that Iran's nuclear programme is exclusively for peaceful purposes, and noting that such a solution would benefit nuclear nonproliferation elsewhere, and welcoming the continuing commitment of China, France, Germany, the Russian Federation, the United Kingdom and the United States, with the support of the European Union's High Representative to seek a negotiated solution,

Determined to give effect to its decisions by adopting appropriate measures to persuade Iran to comply with resolution 1696 (2006) and with the requirements of the IAEA, and also to constrain Iran's development of sensitive technologies in support of its nuclear and missile programmes, until such time as the Security Council determines that the objectives of this resolution have been met,

Concerned by the proliferation risks presented by the Iranian nuclear programme and, in this context, by Iran's continuing failure to meet the requirements of the IAEA Board of Governors and to comply with the provisions of Security Council resolution 1696 (2006), mindful of its primary responsibility under the Charter of the United Nations for the maintenance of international peace and security,

Acting under Article 41 of Chapter VII of the Charter of the United Nations,

1. *Affirms* that Iran shall without further delay take the steps required by the IAEA

Board of Governors in its resolution GOV/2006/14, which are essential to build confidence in the exclusively peaceful purpose of its nuclear programme and to resolve outstanding questions;

2. *Decides*, in this context, that Iran shall without further delay suspend the following proliferation sensitive nuclear activities:

(a) all enrichment-related and reprocessing activities, including research and development, to be verified by the IAEA; and

(b) work on all heavy water-related projects, including the construction of a research reactor moderated by heavy water, also to be verified by the IAEA;

3. *Decides* that all States shall take the necessary measures to prevent the supply, sale or transfer directly or indirectly from their territories, or by their nationals or using their flag vessels or aircraft to, or for the use in or benefit of, Iran, and whether or not originating in their territories, of all items, materials, equipment, goods and technology which could contribute to Iran's enrichment-related, reprocessing or heavy water-related activities, or to the development of nuclear weapon delivery systems, namely:

(a) those set out in sections B.2, B.3, B.4, B.5, B.6 and B.7 of INFCIRC/254/Rev.8/Part 1 in document S/2006/814;

(b) those set out in sections A.1 and B.1 of INFCIRC/254/Rev.8/Part 1 in document S/2006/814, except the supply, sale or transfer of:

(i) equipment covered by B.1 when such equipment is for light water reactors;

(ii) low-enriched uranium covered by A.1.2 when it is incorporated in assembled nuclear fuel elements for such reactors;

(c) those set out in document S/2006/815, except the supply, sale or transfer of

- items covered by 19.A.3 of Category II;
- (d) any additional items, materials, equipment, goods and technology, determined as necessary by the Security Council or the Committee established by paragraph 18 below (herein "the Committee"), which could contribute to enrichment-related, or reprocessing, or heavy water-related activities, or to the development of nuclear weapon delivery systems;
4. *Decides* that all States shall take the necessary measures to prevent the supply, sale or transfer directly or indirectly from their territories, or by their nationals or using their flag vessels or aircraft to, or for the use in or benefit of, Iran, and whether or not originating in their territories, of the following items, materials, equipment, goods and technology:
 - (a) those set out in INFCIRC/254/Rev.7/Part2 of document S/2006/814 if the State determines that they would contribute to enrichment-related, reprocessing or heavy water-related activities;
 - (b) any other items not listed in documents S/2006/814 or S/2006/815 if the State determines that they would contribute to enrichment-related, reprocessing or heavy water-related activities, or to the development of nuclear weapon delivery systems;
 - (c) any further items if the State determines that they would contribute to the pursuit of activities related to other topics about which the IAEA has expressed concerns or identified as outstanding;
 5. *Decides* that, for the supply, sale or transfer of all items, materials, equipment, goods and technology covered by documents S/2006/814 and S/2006/815 the export of which to Iran is not prohibited by subparagraphs 3 (b), 3 (c) or 4 (a) above, States shall ensure that:
 - (a) the requirements, as appropriate, of the Guidelines as set out in documents S/2006/814 and S/2006/985 have been met; and
 - (b) they have obtained and are in a position to exercise effectively a right to verify the end-use and end-use location of any supplied item; and
 - (c) they notify the Committee within ten days of the supply, sale or transfer; and
 - (d) in the case of items, materials, equipment, goods and technology contained in document S/2006/814, they also notify the IAEA within ten days of the supply, sale or transfer;
 6. *Decides* that all States shall also take the necessary measures to prevent the provision to Iran of any technical assistance or training, financial assistance, investment, brokering or other services, and the transfer of financial resources or services, related to the supply, sale, transfer, manufacture or use of the prohibited items, materials, equipment, goods and technology specified in paragraphs 3 and 4 above;
 7. *Decides* that Iran shall not export any of the items in documents S/2006/814 and S/2006/815 and that all Member States shall prohibit the procurement of such items from Iran by their nationals, or using their flag vessels or aircraft, and whether or not originating in the territory of Iran;
 8. *Decides* that Iran shall provide such access and cooperation as the IAEA requests to be able to verify the suspension outlined in paragraph 2 and to resolve all outstanding issues, as identified in IAEA reports, and calls upon Iran to ratify promptly the Additional Protocol;
 9. *Decides* that the measures imposed by paragraphs 3, 4 and 6 above shall not apply where the Committee determines in

advance and on a case-by-case basis that such supply, sale, transfer or provision of such items or assistance would clearly not contribute to the development of Iran's technologies in support of its proliferation sensitive nuclear activities and of development of nuclear weapon delivery systems, including where such items or assistance are for food, agricultural, medical or other humanitarian purposes, provided that:

- (a) contracts for delivery of such items or assistance include appropriate end-user guarantees; and
- (b) Iran has committed not to use such items in proliferation sensitive nuclear activities or for development of nuclear weapon delivery systems;

10. *Calls upon* all States to exercise vigilance regarding the entry into or transit through their territories of individuals who are engaged in, directly associated with or providing support for Iran's proliferation sensitive nuclear activities or for the development of nuclear weapon delivery systems, and decides in this regard that all States shall notify the Committee of the entry into or transit through their territories of the persons designated in the Annex to this resolution (herein "the Annex"), as well as of additional persons designated by the Security Council or the Committee as being engaged in, directly associated with or providing support for Iran's proliferation sensitive nuclear activities and for the development of nuclear weapon delivery systems, including through the involvement in procurement of the prohibited items, goods, equipment, materials and technology specified by and under the measures in paragraphs 3 and 4 above, except where such travel is for activities directly related to the items in subparagraphs 3 (b) (i) and (ii) above;

11. *Underlines* that nothing in the above paragraph requires a State to refuse its own nationals entry into its territory, and that all States shall, in the implementation of the above paragraph, take into account humanitarian considerations as well as the necessity to meet the objectives of this resolution, including where Article XV of the IAEA Statute is engaged;

12. *Decides* that all States shall freeze the funds, other financial assets and economic resources which are on their territories at the date of adoption of this resolution or at any time thereafter, that are owned or controlled by the persons or entities designated in the Annex, as well as those of additional persons or entities designated by the Security Council or by the Committee as being engaged in, directly associated with or providing support for Iran's proliferation sensitive nuclear activities or the development of nuclear weapon delivery systems, or by persons or entities acting on their behalf or at their direction, or by entities owned or controlled by them, including through illicit means, and that the measures in this paragraph shall cease to apply in respect of such persons or entities if, and at such time as, the Security Council or the Committee removes them from the Annex, and decides further that all States shall ensure that any funds, financial assets or economic resources are prevented from being made available by their nationals or by any persons or entities within their territories, to or for the benefit of these persons and entities;

13. *Decides* that the measures imposed by paragraph 12 above do not apply to funds, other financial assets or economic resources that have been determined by relevant States:

- (a) to be necessary for basic expenses, including payment for foodstuffs, rent or mort-

gage, medicines and medical treatment, taxes, insurance premiums, and public utility charges or exclusively for payment of reasonable professional fees and reimbursement of incurred expenses associated with the provision of legal services, or fees or service charges, in accordance with national laws, for routine holding or maintenance of frozen funds, other financial assets and economic resources, after notification by the relevant States to the Committee of the intention to authorize, where appropriate, access to such funds, other financial assets or economic resources and in the absence of a negative decision by the Committee within five working days of such notification;

- (b) to be necessary for extraordinary expenses, provided that such determination has been notified by the relevant States to the Committee and has been approved by the Committee;
- (c) to be the subject of a judicial, administrative or arbitral lien or judgment, in which case the funds, other financial assets and economic resources may be used to satisfy that lien or judgment provided that the lien or judgment was entered into prior to the date of the present resolution, is not for the benefit of a person or entity designated pursuant to paragraphs 10 and 12 above, and has been notified by the relevant States to the Committee;
- (d) to be necessary for activities directly related to the items specified in subparagraphs 3 (b) (i) and (ii) and have been notified by the relevant States to the Committee;

14. *Decides* that States may permit the addition to the accounts frozen pursuant to the provisions of paragraph 12 above of interests or other earnings due on those accounts or payments due under con-

tracts, agreements or obligations that arose prior to the date on which those accounts became subject to the provisions of this resolution, provided that any such interest, other earnings and payments continue to be subject to these provisions and are frozen;

15. *Decides* that the measures in paragraph 12 above shall not prevent a designated person or entity from making payment due under a contract entered into prior to the listing of such a person or entity, provided that the relevant States have determined that:

- (a) the contract is not related to any of the prohibited items, materials, equipment, goods, technologies, assistance, training, financial assistance, investment, brokering or services referred to in paragraphs 3, 4 and 6 above;
- (b) the payment is not directly or indirectly received by a person or entity designated pursuant to paragraph 12 above; and after notification by the relevant States to the Committee of the intention to make or receive such payments or to authorize, where appropriate, the unfreezing of funds, other financial assets or economic resources for this purpose, ten working days prior to such authorization;

16. *Decides* that technical cooperation provided to Iran by the IAEA or under its auspices shall only be for food, agricultural, medical, safety or other humanitarian purposes, or where it is necessary for projects directly related to the items specified in subparagraphs 3 (b) (i) and (ii) above, but that no such technical cooperation shall be provided that relates to the proliferation sensitive nuclear activities set out in paragraph 2 above;

17. *Calls upon* all States to exercise vigilance and prevent specialized teaching or training of Iranian nationals, within their

territories or by their nationals, of disciplines which would contribute to Iran's proliferation sensitive nuclear activities and development of nuclear weapon delivery systems;

18. *Decides* to establish, in accordance with rule 28 of its provisional rules of procedure, a Committee of the Security Council consisting of all the members of the Council, to undertake the following tasks:
 - (a) to seek from all States, in particular those in the region and those producing the items, materials, equipment, goods and technology referred to in paragraphs 3 and 4 above, information regarding the actions taken by them to implement effectively the measures imposed by paragraphs 3, 4, 5, 6, 7, 8, 10 and 12 of this resolution and whatever further information it may consider useful in this regard;
 - (b) to seek from the secretariat of the IAEA information regarding the actions taken by the IAEA to implement effectively the measures imposed by paragraph 16 of this resolution and whatever further information it may consider useful in this regard;
 - (c) to examine and take appropriate action on information regarding alleged violations of measures imposed by paragraphs 3, 4, 5, 6, 7, 8, 10 and 12 of this resolution;
 - (d) to consider and decide upon requests for exemptions set out in paragraphs 9, 13 and 15 above;
 - (e) to determine as may be necessary additional items, materials, equipment, goods and technology to be specified for the purpose of paragraph 3 above;
 - (f) to designate as may be necessary additional individuals and entities subject to the measures imposed by paragraphs 10 and 12 above;
 - (g) to promulgate guidelines as may be necessary to facilitate the implementation of the measures imposed by this resolution and include in such guidelines a requirement on States to provide information where possible as to why any individuals and/or entities meet the criteria set out in paragraphs 10 and 12 and any relevant identifying information;
 - (h) to report at least every 90 days to the Security Council on its work and on the implementation of this resolution, with its observations and recommendations, in particular on ways to strengthen the effectiveness of the measures imposed by paragraphs 3, 4, 5, 6, 7, 8, 10 and 12 above;
19. *Decides* that all States shall report to the Committee within 60 days of the adoption of this resolution on the steps they have taken with a view to implementing effectively paragraphs 3, 4, 5, 6, 7, 8, 10, 12 and 17 above;
20. *Expresses* the conviction that the suspension set out in paragraph 2 above as well as full, verified Iranian compliance with the requirements set out by the IAEA Board of Governors, would contribute to a diplomatic, negotiated solution that guarantees Iran's nuclear programme is for exclusively peaceful purposes, underlines the willingness of the international community to work positively for such a solution, encourages Iran, in conforming to the above provisions, to re-engage with the international community and with the IAEA, and stresses that such engagement will be beneficial to Iran;
21. *Welcomes* the commitment of China, France, Germany, the Russian Federation, the United Kingdom and the United States, with the support of the European Union's High Representative, to a negotiated solution to this issue and encourages Iran to engage with their June 2006

proposals (S/2006/521), which were endorsed by the Security Council in resolution 1696 (2006), for a long-term comprehensive agreement which would allow for the development of relations and cooperation with Iran based on mutual respect and the establishment of international confidence in the exclusively peaceful nature of Iran's nuclear programme;

22. *Reiterates* its determination to reinforce the authority of the IAEA, strongly supports the role of the IAEA Board of Governors, commends and encourages the Director General of the IAEA and its secretariat for their ongoing professional and impartial efforts to resolve all remaining outstanding issues in Iran within the framework of the IAEA, underlines the necessity of the IAEA continuing its work to clarify all outstanding issues relating to Iran's nuclear programme;

23. *Requests* within 60 days a report from the Director General of the IAEA on whether Iran has established full and sustained suspension of all activities mentioned in this resolution, as well as on the process of Iranian compliance with all the steps required by the IAEA Board and with the other provisions of this resolution, to the IAEA Board of Governors and in parallel to the Security Council for its consideration;

24. *Affirms* that it shall review Iran's actions in the light of the report referred to in paragraph 23 above, to be submitted within 60 days, and:

- (a) that it shall suspend the implementation of measures if and for so long as Iran suspends all enrichment-related and reprocessing activities, including research and development, as verified by the IAEA, to allow for negotiations;
- (b) that it shall terminate the measures specified in paragraphs 3, 4, 5, 6, 7, 10 and 12 of this resolution as soon as it determines

that Iran has fully complied with its obligations under the relevant resolutions of the Security Council and met the requirements of the IAEA Board of Governors, as confirmed by the IAEA Board;

- (c) that it shall, in the event that the report in paragraph 23 above shows that Iran has not complied with this resolution, adopt further appropriate measures under Article 41 of Chapter VII of the Charter of the United Nations to persuade Iran to comply with this resolution and the requirements of the IAEA, and underlines that further decisions will be required should such additional measures be necessary;

25. *Decides* to remain seized of the matter.

ANNEX

A. Entities Involved in the Nuclear Programme

1. Atomic Energy Organisation of Iran.
2. Mesbah Energy Company (provider for A40 research reactor — Arak).
3. Kala-Electric (aka Kalaye Electric) (provider for PFEP — Natanz).
4. Pars Trash Company (involved in centrifuge programme, identified in IAEA reports).
5. Farayand Technique (involved in centrifuge programme, identified in IAEA reports).
6. Defence Industries Organisation (overarching MODAFL-controlled entity, some of whose subordinates have been involved in the centrifuge programme making components, and in the missile programme).
7. 7th of Tir (subordinate of DIO, widely recognized as being directly involved in the nuclear programme).

B. Entities Involved in the Ballistic Missile Programme

1. Shahid Hemmat Industrial Group (SHIG) (subordinate entity of AIO).

2. Shahid Bagheri Industrial Group (SBIG) (subordinate entity of AIO).
3. Fajr Industrial Group (formerly Instrumentation Factory Plant, subordinate entity of AIO).

C. Persons Involved in the Nuclear Programme

1. Mohammad Qannadi, AEOI Vice President for Research & Development.
2. Behman Asgarpour, Operational Manager (Arak).
3. Dawood Agha-Jani, Head of the PFEP (Natanz).
4. Ehsan Monajemi, Construction Project Manager, Natanz.
5. Jafar Mohammadi, Technical Adviser to the AEOI (in charge of managing the production of valves for centrifuges).
6. Ali Hajinia Leilabadi, Director General of Mesbah Energy Company.
7. Lt Gen Mohammad Mehdi Nejad Nouri, Rector of Malek Ashtar University of De-

fence Technology (chemistry dept, affiliated to MODALF, has conducted experiments on beryllium).

D. Persons Involved in the Ballistic Missile Programme

1. Gen Hosein Salimi, Commander of the Air Force, IRGC (Pasdaran).
2. Ahmad Vahid Dastjerdi, Head of the AIO.
3. Reza-Gholi Esmaeli, Head of Trade & International Affairs Dept, AIO.
4. Bahmanyar Morteza Bahmanyar, Head of Finance & Budget Dept, AIO.

E. Persons Involved in Both the Nuclear and Ballistic Missile Programmes

1. Maj Gen Yahya Rahim Safavi, Commander, IRGC (Pasdaran).

Source: United Nations Security Council Resolution 1737/ United Nations' official site// <http://daccessdds.un.org/doc/UN-DOC/GEN/N06/681/42/PDF/N0668142.pdf?OpenElement> .

2.6. United Nations Security Council Resolution 1747 (Iran)

*March 24, 2007
New-York*

The Security Council,

Recalling the Statement of its President, S/PRST/2006/15, of 29 March 2006, and its resolution 1696 (2006) of 31 July 2006, and its resolution 1737 (2006) of 23 December 2006, and reaffirming their provisions,

Reaffirming its commitment to the Treaty on the Non-Proliferation of Nuclear Weapons, the need for all States Party to that Treaty to comply fully with all their obligations, and recalling the right of States Party, in conformity with Articles I and II of that Treaty, to develop research, production and use of nuclear energy for peaceful purposes without discrimination,

Recalling its serious concern over the reports of the IAEA Director General as set out in its resolutions 1696 (2006) and 1737 (2006),

Recalling the latest report by the IAEA Director General (GOV/2007/8) of 22 February 2007 and deploring that, as indicated there-

in, Iran has failed to comply with resolution 1696 (2006) and resolution 1737 (2006),

Emphasizing the importance of political and diplomatic efforts to find a negotiated solution guaranteeing that Iran's nuclear programme is exclusively for peaceful purposes, and noting that such a solution would benefit nuclear nonproliferation elsewhere, and welcoming the continuing commitment of China, France, Germany, the Russian Federation, the United Kingdom and the United States, with the support of the European Union's High Representative to seek a negotiated solution,

Recalling the resolution of the IAEA Board of Governors (GOV/2006/14), which states that a solution to the Iranian nuclear issue would contribute to global non-proliferation efforts and to realizing the objective of a Middle East free of weapons of mass destruction, including their means of delivery,

Determined to give effect to its decisions by adopting appropriate measures to persuade Iran to comply with resolution 1696 (2006) and resolution 1737 (2006) and with the requirements of the IAEA, and also to constrain Iran's development of sensitive technologies in support of its nuclear and missile programmes, until such time as the Security Council determines that the objectives of these resolutions have been met,

Recalling the requirement on States to join in affording mutual assistance in carrying out the measures decided upon by the Security Council,

Concerned by the proliferation risks presented by the Iranian nuclear programme and, in this context, by Iran's continuing failure to meet the requirements of the IAEA Board of Governors and to comply with the provisions of Security Council resolutions 1696 (2006) and 1737 (2006), mindful of its primary responsibility under the Charter of the United Nations for the maintenance of international peace and security,

Acting under Article 41 of Chapter VII of the Charter of the United Nations,

1. *Reaffirms* that Iran shall without further delay take the steps required by the IAEA Board of Governors in its resolution GOV/2006/14, which are essential to build confidence in the exclusively peaceful purpose of its nuclear programme and to resolve outstanding questions, and, in this context, affirms its decision that Iran shall without further delay take the steps required in paragraph 2 of resolution 1737 (2006);
2. *Calls upon* all States also to exercise vigilance and restraint regarding the entry into or transit through their territories of individuals who are engaged in, directly associated with or providing support for Iran's proliferation sensitive nuclear activities or for the development of nuclear
- weapon delivery systems, and decides in this regard that all States shall notify the Committee established pursuant to paragraph 18 of resolution 1737 (2006) (herein "the Committee") of the entry into or transit through their territories of the persons designated in the Annex to resolution 1737 (2006) or Annex I to this resolution, as well as of additional persons designated by the Security Council or the Committee as being engaged in, directly associated with or providing support for Iran's proliferation sensitive nuclear activities or for the development of nuclear weapon delivery systems, including through the involvement in procurement of the prohibited items, goods, equipment, materials and technology specified by and under the measures in paragraphs 3 and 4 of resolution 1737 (2006), except where such travel is for activities directly related to the items in subparagraphs 3 (b) (i) and (ii) of that resolution;
3. *Underlines* that nothing in the above paragraph requires a State to refuse its own nationals entry into its territory, and that all States shall, in the implementation of the above paragraph, take into account humanitarian considerations, including religious obligations, as well as the necessity to meet the objectives of this resolution and resolution 1737 (2006), including where Article XV of the IAEA Statute is engaged;
4. *Decides* that the measures specified in paragraphs 12, 13, 14 and 15 of resolution 1737 (2006) shall apply also to the persons and entities listed in Annex I to this resolution;
5. *Decides* that Iran shall not supply, sell or transfer directly or indirectly from its territory or by its nationals or using its flag vessels or aircraft any arms or related materiel, and that all States shall prohibit the procurement of such items from Iran

by their nationals, or using their flag vessels or aircraft, and whether or not originating in the territory of Iran;

6. *Calls upon* all States to exercise vigilance and restraint in the supply, sale or transfer directly or indirectly from their territories or by their nationals or using their flag vessels or aircraft of any battle tanks, armoured combat vehicles, large calibre artillery systems, combat aircraft, attack helicopters, warships, missiles or missile systems as defined for the purpose of the United Nations Register on Conventional Arms to Iran, and in the provision to Iran of any technical assistance or training, financial assistance, investment, brokering or other services, and the transfer of financial resources or services, related to the supply, sale, transfer, manufacture or use of such items in order to prevent a destabilising accumulation of arms;
7. *Calls upon* all States and international financial institutions not to enter into new commitments for grants, financial assistance, and concessional loans, to the government of the Islamic Republic of Iran, except for humanitarian and developmental purposes;
8. *Calls upon* all States to report to the Committee within 60 days of the adoption of this resolution on the steps they have taken with a view to implementing effectively paragraphs 2, 4, 5, 6 and 7 above;
9. *Expresses* the conviction that the suspension set out in paragraph 2 of resolution 1737 (2006) as well as full, verified Iranian compliance with the requirements set out by the IAEA Board of Governors would contribute to a diplomatic, negotiated solution that guarantees Iran's nuclear programme is for exclusively peaceful purposes, underlines the willingness of the international community to work positively for such a solution, encourages Iran, in conforming to the above provisions, to re-engage with the international community and with the IAEA, and stresses that such engagement will be beneficial to Iran;
10. *Welcomes* the continuous affirmation of the commitment of China, France, Germany, the Russian Federation, the United Kingdom and the United States, with the support of the European Union's High Representative, to a negotiated solution to this issue and encourages Iran to engage with their June 2006 proposals (S/2006/521), attached in Annex II to this resolution, which were endorsed by the Security Council in resolution 1696 (2006), and acknowledges with appreciation that this offer to Iran remains on the table, for a long-term comprehensive agreement which would allow for the development of relations and cooperation with Iran based on mutual respect and the establishment of international confidence in the exclusively peaceful nature of Iran's nuclear programme;
11. *Reiterates* its determination to reinforce the authority of the IAEA, strongly supports the role of the IAEA Board of Governors, commends and encourages the Director General of the IAEA and its secretariat for their ongoing professional and impartial efforts to resolve all outstanding issues in Iran within the framework of the IAEA, underlines the necessity of the IAEA, which is internationally recognized as having authority for verifying compliance with safeguards agreements, including the non-diversion of nuclear material for non-peaceful purposes, in accordance with its Statute, to continue its work to clarify all outstanding issues relating to Iran's nuclear programme;
12. *Requests* within 60 days a further report from the Director General of the IAEA on whether Iran has established full and sus-

tained suspension of all activities mentioned in resolution 1737 (2006), as well as on the process of Iranian compliance with all the steps required by the IAEA Board and with the other provisions of resolution 1737 (2006) and of this resolution, to the IAEA Board of Governors and in parallel to the Security Council for its consideration;

13. *Affirms* that it shall review Iran's actions in light of the report referred to in paragraph 12 above, to be submitted within 60 days, and:

- (a) that it shall suspend the implementation of measures if and for so long as Iran suspends all enrichment-related and reprocessing activities, including research and development, as verified by the IAEA, to allow for negotiations in good faith in order to reach an early and mutually acceptable outcome;
- (b) that it shall terminate the measures specified in paragraphs 3, 4, 5, 6, 7 and 12 of resolution 1737 (2006) as well as in paragraphs 2, 4, 5, 6 and 7 above as soon as it determines, following receipt of the report referred to in paragraph 12 above, that Iran has fully complied with its obligations under the relevant resolutions of the Security Council and met the requirements of the IAEA Board of Governors, as confirmed by the IAEA Board;
- (c) that it shall, in the event that the report in paragraph 12 above shows that Iran has not complied with resolution 1737 (2006) and this resolution, adopt further appropriate measures under Article 41 of Chapter VII of the Charter of the United Nations to persuade Iran to comply with these resolutions and the requirements of the IAEA, and underlines that further decisions will be required should such additional measures be necessary;

14. Decides to remain seized of the matter.

ANNEX I

Entities Involved in Nuclear or Ballistic Missile Activities

1. Ammunition and Metallurgy Industries Group (AMIG) (aka Ammunition Industries Group) (AMIG controls 7th of Tir, which is designated under resolution 1737 (2006) for its role in Iran's centrifuge programme. AMIG is in turn owned and controlled by the Defence Industries Organization (DIO), which is designated under resolution 1737 (2006)).
2. Esfahan Nuclear Fuel Research and Production Centre (NFRPC) and Esfahan Nuclear Technology Centre (ENTC) (Parts of the Atomic Energy Organization of Iran's (AEOI) Nuclear Fuel Production and Procurement Company, which is involved in enrichment-related activities. AEOI is designated under resolution 1737 (2006)).
3. Kavoshyar Company (Subsidiary company of AEOI, which has sought glass fibres, vacuum chamber furnaces and laboratory equipment for Iran's nuclear programme).
4. Parchin Chemical Industries (Branch of DIO, which produces ammunition, explosives, as well as solid propellants for rockets and missiles).
5. Karaj Nuclear Research Centre (Part of AEOI's research division).
6. Novin Energy Company (aka Pars Novin) (Operates within AEOI and has transferred funds on behalf of AEOI to entities associated with Iran's nuclear programme).
7. Cruise Missile Industry Group (aka Naval Defence Missile Industry Group) (Production and development of cruise missiles. Responsible for naval missiles including cruise missiles).
8. Bank Sepah and Bank Sepah International

(Bank Sepah provides support for the Aerospace Industries Organization (AIO) and subordinates, including Shahid Hemmat Industrial Group (SHIG) and Shahid Bagheri Industrial Group (SBIG), both of which were designated under resolution 1737 (2006).

9. Sanam Industrial Group (subordinate to AIO, which has purchased equipment on AIO's behalf for the missile programme).
10. Ya Mahdi Industries Group (subordinate to AIO, which is involved in international purchases of missile equipment).
4. Amir Rahimi (Head of Esfahan Nuclear Fuel Research and Production Center, which is part of the AEOI's Nuclear Fuel Production and Procurement Company, which is involved in enrichment-related activities).
5. Mohsen Hojati (Head of Fajr Industrial Group, which is designated under resolution 1737 (2006) for its role in the ballistic missile programme).
6. Mehردادا Akhlaghi Ketabachi (Head of SBIG, which is designated under resolution 1737 (2006) for its role in the ballistic missile programme).

Iranian Revolutionary Guard Corps Entities

1. Qods Aeronautics Industries (Produces unmanned aerial vehicles (UAVs), parachutes, para-gliders, para-motors, etc. Iranian Revolutionary Guard Corps (IRGC) has boasted of using these products as part of its asymmetric warfare doctrine).
2. Pars Aviation Services Company (Maintains various aircraft including MI-171, used by IRGC Air Force).
3. Sho'a' Aviation (Produces micro-lights which IRGC has claimed it is using as part of its asymmetric warfare doctrine).
7. Naser Maleki (Head of SHIG, which is designated under resolution 1737 (2006) for its role in Iran's ballistic missile programme. Naser Maleki is also a MODAFL official overseeing work on the Shahab-3 ballistic missile programme. The Shahab-3 is Iran's long range ballistic missile currently in service).
8. Ahmad Derakhshandeh (Chairman and Managing Director of Bank Sepah, which provides support for the AIO and subordinates, including SHIG and SBIG, both of which were designated under resolution 1737 (2006)).

Persons Involved in Nuclear or Ballistic Missile Activities

1. Fereidoun Abbasi-Davani (Senior Ministry of Defence and Armed Forces Logistics (MODAFL) scientist with links to the Institute of Applied Physics, working closely with Mohsen Fakhrizadeh-Mahabadi, designated below).
2. Mohsen Fakhrizadeh-Mahabadi (Senior MODAFL scientist and former head of the Physics Research Centre (PHRC). The IAEA has asked to interview him about the activities of the PHRC over the period he was head but Iran has refused).
3. Seyed Jaber Safdari (Manager of the Natanz Enrichment Facilities).

Iranian Revolutionary Guard Corps Key Persons

1. Brigadier General Morteza Rezaie (Deputy Commander of IRGC).
2. Vice Admiral Ali Akbar Ahmadian (Chief of IRGC Joint Staff.).
3. Brigadier General Mohammad Reza Zaheidi (Commander of IRGC Ground Forces).
4. Rear Admiral Morteza Safari (Commander of IRGC Navy).
5. Brigadier General Mohammad Hejazi (Commander of Bassij resistance force).
6. Brigadier General Qasem Soleimani (Commander of Qods force).

7. General Zolqadr (IRGC officer, Deputy Interior Minister for Security Affairs).

- Resume the implementation of the Additional Protocol.

ANNEX II

Elements of a Long-term Agreement

Our goal is to develop relations and cooperation with Iran, based on mutual respect and the establishment of international confidence in the exclusively peaceful nature of the nuclear programme of the Islamic Republic of Iran. We propose a fresh start in the negotiation of a comprehensive agreement with Iran. Such an agreement would be deposited with the International Atomic Energy Agency (IAEA) and endorsed in a Security Council resolution. To create the right conditions for negotiations,

We will:

- Reaffirm Iran's right to develop nuclear energy for peaceful purposes in conformity with its obligations under the Treaty on the Non-Proliferation of Nuclear Weapons (hereinafter, NPT), and in this context reaffirm our support for the development by Iran of a civil nuclear energy programme.
- Commit to support actively the building of new light water reactors in Iran through international joint projects, in accordance with the IAEA statute and NPT.
- Agree to suspend discussion of Iran's nuclear programme in the Security Council upon the resumption of negotiations.

Iran will:

- Commit to addressing all of the outstanding concerns of IAEA through full cooperation with IAEA,
- Suspend all enrichment-related and reprocessing activities to be verified by IAEA, as requested by the IAEA Board of Governors and the Security Council, and commit to continue this during these negotiations.

Areas of Future Cooperation to Be Covered in Negotiations on a Long-term Agreement

Nuclear

We will take the following steps:

Iran's Rights to Nuclear Energy

- Reaffirm Iran's inalienable right to nuclear energy for peaceful purposes without discrimination and in conformity with articles I and II of NPT, and cooperate with Iran in the development by Iran of a civil nuclear power programme.
- Negotiate and implement a Euratom/Iran nuclear cooperation agreement.

Light Water Reactors

- Actively support the building of new light water power reactors in Iran through international joint projects, in accordance with the IAEA statute and NPT, using state-of-the-art technology, including by authorizing the transfer of necessary goods and the provision of advanced technology to make its power reactors safe against earthquakes.
- Provide cooperation with the management of spent nuclear fuel and radioactive waste through appropriate arrangements.

Research and Development in Nuclear Energy

- Provide a substantive package of research and development cooperation, including possible provision of light water research reactors, notably in the fields of radioisotope production, basic research and nuclear applications in medicine and agriculture.

Fuel Guarantees

Give legally binding, multilayered fuel assurances to Iran, based on:

- Participation as a partner in an international facility in Russia to provide enrichment services for a reliable supply of fuel to Iran's nuclear reactors. Subject to negotiations, such a facility could enrich all uranium hexafluoride (UF₆) produced in Iran.
- Establishment on commercial terms of a buffer stock to hold a reserve of up to five years' supply of nuclear fuel dedicated to Iran, with the participation and under supervision of IAEA.
- Development with IAEA of a standing multilateral mechanism for reliable access to nuclear fuel, based on ideas to be considered at the next meeting of the Board of Governors.

Review of Moratorium

The long-term agreement would, with regard to common efforts to build international confidence, contain a clause for review of the agreement in all its aspects, to follow:

- Confirmation by IAEA that all outstanding issues and concerns reported by it, including those activities which could have a military nuclear dimension, have been resolved;
- Confirmation that there are no undeclared nuclear activities or materials in Iran and that international confidence in the exclusively peaceful nature of Iran's civil nuclear programme has been restored.

Political and Economic Regional Security Cooperation

Support for a new conference to promote dialogue and cooperation on regional security issues.

International Trade and Investment

Improving Iran's access to the international

economy, markets and capital, through practical support for full integration into international structures, including the World Trade Organization and to create the framework for increased direct investment in Iran and trade with Iran (including a trade and economic cooperation agreement with the European Union). Steps would be taken to improve access to key goods and technology.

Civil Aviation

Civil aviation cooperation, including the possible removal of restrictions on United States and European manufacturers in regard to the export of civil aircraft to Iran, thereby widening the prospect of Iran renewing its fleet of civil airliners.

Energy Partnership

Establishment of a long-term energy partnership between Iran and the European Union and other willing partners, with concrete and practical applications.

Telecommunications Infrastructure

Support for the modernization of Iran's telecommunication infrastructure and advanced Internet provision, including by possible removal of relevant United States and other export restrictions.

High Technology Cooperation

Cooperation in fields of high technology and other areas to be agreed upon.

Agriculture

Support for agricultural development in Iran.

Source: United Nations Security Council Resolution 1747/ United Nations' official site// <http://daccessdds.un.org/doc/UN-DOC/GEN/N07/281/40/PDF/N0728140.pdf?OpenElement>.

2.7. Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolution 1737 (2006) in the Islamic Republic of Iran

*February 22, 2007
Vienna*

A report of the International Atomic Energy Agency Director General

1. On 14 November 2006, the Director General reported on the implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran (Iran) (GOV/2006/64).
2. On 23 December 2006, the United Nations Security Council adopted resolution 1737 (2006), in which the Council, inter alia:
 - affirmed that Iran shall without further delay take the steps required by the Board of Governors in resolution GOV/2006/14, which are essential to build confidence in the exclusively peaceful purpose of its nuclear programme and to resolve outstanding questions (operative para. 1);
 - decided that Iran shall without further delay suspend the following proliferation sensitive nuclear activities:
 - all enrichment related and reprocessing activities, including research and development, to be verified by the Agency; and
 - work on all heavy water related projects, including the construction of a research reactor moderated by heavy water, also to be verified by the Agency (operative para. 2);
 - decided that Iran shall provide such access and cooperation as the Agency requests to be able to verify the suspension outlined above and to resolve all outstanding issues, as identified in Agency reports, and called upon Iran to ratify promptly the Additional Protocol (operative para. 8);

- requested within 60 days a report from the Director General on whether Iran has established full and sustained suspension of all activities mentioned in the resolution, as well as on the process of Iranian compliance with all the steps required by the Board of Governors and with the other provisions of the resolution, to the Board and in parallel to the Security Council for its consideration (operative para. 23).
3. This report, which is being submitted to the Board, and in parallel to the Security Council, covers developments since the Director General's report of 14 November 2006.

A. Enrichment Related Activities

4. Since 14 November 2006, Iran has continued to operate single machines, as well as the 10-, 24- and 164-machine cascades, at the Pilot Fuel Enrichment Plant (PFEP), and to feed UF₆ intermittently into these machines. Between 2 November 2006 and 17 February 2007, a total of approximately 66 kg of UF₆ was declared by Iran as having been fed into the process and enriched to levels below 5% U-235. The environmental sample results thus far indicate a maximum enrichment of 4.2% U-235 in the first 164-machine cascade (GOV/2006/64, para. 4).
5. The Agency has completed its evaluation of the physical inventory verification (PIV) of nuclear material at PFEP carried out between 16 and 18 September 2006 (GOV/2006/64, para. 3), and has concluded that the inventory of nuclear material, as declared by Iran, was consistent with the results of the PIV.
6. On 18 December 2006, Iran provided Agency inspectors access to operating records concerning the product and tails assay at PFEP (GOV/2006/64, para. 4). During meetings held in Iran between 15 and 18 January 2007, the Agency sought additional clarification from Iran on the information provided by it, which clarification is still pending.
7. During the meetings in Iran in January 2007, Iran informed the Agency of its plan to start feeding UF₆ into the cascades installed at the Fuel Enrichment Plant (FEP) by the end of February 2007, to continue progressively with the installation of the 18 cascades of the 3000-machine hall and to bring them gradually into operation by May 2007. The Agency recalled the safeguards measures that needed to be implemented at FEP (GOV/2006/53, para. 6), and reiterated that such measures needed to be in place prior to the introduction of nuclear material into the facility. The Agency also again raised with Iran the need for remote monitoring at FEP and PFEP as one of those required measures.
8. In a letter dated 23 January 2007, Iran declined to agree at this stage on the use of remote monitoring, and requested the Agency to provide a detailed legal basis for the implementation of remote monitoring, as well as examples of where such measures were already being implemented in sensitive facilities in other States. The Agency provided clarifications to Iran in a letter dated 9 February 2007 and is awaiting Iran's response. In the meantime, the Agency agreed to interim verification arrangements at FEP, involving frequent inspector access but not remote monitoring, provided that these arrangements were in place before Iran started feeding UF₆ into the cascades. Iran was informed that these arrangements (which are now in place) would be valid only for as long as the number of machines installed at FEP did not exceed 500, and that, once that number was exceeded, all required safeguards measures would need to be implemented.

9. During the design information verification (DIV) carried out at FEP on 17 February 2007, Agency inspectors were informed that two 164-machine cascades had been installed and were operating under vacuum and that another two 164-machine cascades were in the final stages of installation. In light of this, in a letter dated 19 February 2007, the Agency requested that arrangements be made for the relocation of cameras into the cascade hall during the Agency's next visit to FEP, which is scheduled to take place between 3 and 5 March 2007. The issue of remote monitoring remains to be resolved.
10. During January and February 2007, the Agency collected baseline environmental samples, and began the installation of containment and surveillance measures, at FEP. On 31 January 2007, Iran transferred approximately 8.7 t of natural UF₆ in a container from the Uranium Conversion Facility (UCF) to FEP and connected the container to the feed autoclave, which is under Agency seal. As of 17 February 2007, no UF₆ had been fed into the process at FEP.
11. The Agency has no information to report regarding the assembly of centrifuges, or the manufacture of centrifuge components or associated equipment in Iran. However, Iran is pre-treating rotors for FEP at PFEP.

B. Reprocessing Activities

12. The Agency has been monitoring the use of hot cells at the Tehran Research Reactor (TRR) and at the Molybdenum, Iodine and Xenon Radioisotope Production Facility, and the construction of hot cells at the Iran Nuclear Research Reactor (IR-40) at Arak, through inspections, DIV and analysis of satellite imagery. There are no indications of ongoing reprocessing activities at those facilities, or at any other declared facilities in Iran.

C. Heavy Water Related Projects

13. On 29 January 2007, the Agency carried out a DIV at the IR-40 Reactor, where, it was noted, civil construction is ongoing. Satellite imagery indicates that the operation of the Heavy Water Production Plant is also continuing.

D. Outstanding Issues

14. On 15 February 2007, the Agency wrote to Iran inquiring whether it intended to take any action to resolve the outstanding issues, to suspend the activities identified in Security Council resolution 1737 (2006), and to ratify the Additional Protocol. In its reply dated 19 February 2007, Iran reiterated its "full readiness and willingness to negotiate on the modality for the resolution of the outstanding issues with the IAEA, subject to the assurances for dealing with the issues in the framework of the Agency, without the interference of the United Nations Security Council".

D.1. Enrichment Programme

D.1.1. Contamination

15. The issue of the source(s) of low enriched uranium (LEU) and high enriched uranium (HEU) particles found at locations where Iran has declared that centrifuge components had been manufactured, used and/or stored remains unresolved (GOV/2006/53, para. 11). Particle contamination similar to that in Iran was also detected in samples taken from centrifuge equipment and components found in the Libyan Arab Jamahiriya which are said to have originated from the same country. The Agency has received additional information from the country from which the components originated. This information, however, does not fully explain the presence of some of the LEU

and HEU particles. While this information has been helpful, existing measurement and evaluation methodologies do not permit a clear determination of the origin of the HEU or LEU contamination on the basis of the information currently available to the Agency from Iran and elsewhere. Therefore, verification of the correctness and completeness of Iran's declarations in this regard can progress only with a full understanding of the scope and chronology of Iran's centrifuge enrichment programme, which can only be achieved through the implementation by Iran of the Additional Protocol and required transparency measures.

16. In a letter dated 30 November 2006, Iran agreed to permit the Agency to re-sample equipment at the technical university in Tehran where a small number of natural uranium (NU) and HEU particles were found on samples collected in January 2006 (GOV/2006/53, para. 24). The re-sampling was carried out on 22 December 2006, the results of which showed NU and LEU particle contamination. The Agency is awaiting clarification by Iran with regard to the origin of the uranium particle contamination found in the January and December 2006 samples.
17. Iran has not yet responded to the Agency's long outstanding requests for clarification concerning, and access to carry out further environmental sampling of, other equipment and materials related to the Physics Research Centre (PHRC); nor has Iran agreed to permit the Agency to interview another former Head of the PHRC.

D.1.2. Acquisition of P-1 and P-2 Centrifuge Technology

18. Iran has not made available to the Agency any new information concerning its P-1 or P-2 centrifuge programmes (GOV/2006/53, paras 12–13).

D.2. Uranium Metal

19. Iran has still not provided a copy of the 15-page document describing the procedures for the reduction of UF₆ to uranium metal and the casting and machining of enriched and depleted uranium metal into hemispheres (GOV/2006/53, para. 14). The document remains under Agency seal, however, and is accessible to Agency inspectors.

D.3. Plutonium Experiments

20. The Agency has continued to seek clarification from Iran about its plutonium separation experiments (GOV/2006/53, paras 15–17). During a meeting on 17 January 2007, the Agency reminded Iran of the outstanding inconsistencies relating to the plutonium experiments and indicated that, unless additional information was provided by Iran, this issue could not be resolved satisfactorily. Iran stated that no other relevant information was available. Verification of the completeness and correctness of Iran's declarations in this regard can progress only through the implementation of the Additional Protocol and required transparency measures.
21. During the 17 January 2007 meeting, the Agency also discussed the presence of HEU particles found as a result of the analysis of environmental samples taken from the spent fuel containers at the Karaj Waste Storage Facility (GOV/2006/53, para. 17), as well as the additional analytical results, communicated to Iran in a letter dated 12 January 2007, from environmental samples collected from similar spent fuel containers located at the Tehran Nuclear Research Centre (TNRC). Iran reiterated its position that the HEU contamination found in the containers located at Karaj originated from leaking reactor fuel assemblies taken from TRR. Following receipt from Iran of a letter dated 28 January 2007, in which Iran re-

confirmed its position with respect to the source of HEU contamination, the Agency again requested, in a letter dated 9 February 2007, detailed information and supporting documentation with respect to the reactor fuel assemblies.

E. Other Implementation Issues

E.1. Uranium Conversion

22. During the conversion campaign at UCF, which was started in June 2006, a total of 110 t of uranium in the form of uranium ore concentrate was fed into the process. The operator is scheduled to carry out an annual physical inventory in February 2007, which will be verified by the Agency in March 2007. As of the end of January 2007, approximately 175 t of uranium in the form of UF₆ had been produced since the commissioning of UCF. All UF₆ produced remains under Agency containment and surveillance measures.

E.2. Designation Of Inspectors

23. On 17 January 2007, the Agency received from Iran a letter informing the Agency that Iran was not in a position to approve the designation of 10 inspectors proposed as replacements for inspectors who had left the Agency and objecting to the continued designation of an additional 38 inspectors previously designated for Iran. In a Note Verbale dated 23 January 2007, the Agency expressed its regret over Iran's decision and requested Iran to reconsider it. The Agency informed Iran that its decision would lead to diminished operational flexibility and less efficient use of resources. The Agency has received no reply from Iran in this regard.

E.3. Other Matters

24. There are no new developments to report with respect to Iran's uranium mining ac-

tivities or its experiments involving polonium (GOV/2005/67, paras 26 – 31 and 34).

F. Transparency Measures

25. Iran has not agreed to any of the required transparency measures, which are essential for the clarification of certain aspects of the scope and nature of its nuclear programme. In addition to the measures mentioned above, these include discussions about information provided to the Agency concerning alleged studies related to the so-called Green Salt Project concerning the conversion of uranium dioxide into UF₄ (known as "green salt"), to high explosives testing and to the design of a missile re-entry vehicle (GOV/2006/64, para. 19).

G. Summary

26. Pursuant to its NPT Safeguards Agreement, Iran has been providing the Agency with access to declared nuclear material and facilities, and has provided the required nuclear material accountancy reports in connection with such material and facilities.

27. The Agency is able to verify the non-diversion of declared nuclear material in Iran. The Agency remains unable, however, to make further progress in its efforts to verify fully the past development of Iran's nuclear programme and certain aspects relevant to its scope and nature. Hence, the Agency is unable to verify the absence of undeclared nuclear material and activities in Iran unless Iran addresses the long outstanding verification issues through the implementation of the Additional Protocol (which it signed on 18 December 2003, but has not yet brought into force) and the required transparency measures.

28. Iran has not suspended its enrichment related activities. Iran has continued

with the operation of PFEP. It has also continued with the construction of FEP, including the installation of cascades, and has transferred UF₆ to FEP. Iran has also continued with its heavy water related projects. Construction of the IR-40 Reactor, and operation of the Heavy Water Production Plant, are continuing. In contrast, there has been no indication of reprocessing related activities at any declared sites in Iran.

29. As underscored by the Director General at the meeting of the Board of Governors in November 2006 (GOV/OR. 1174, paras 86–94), given the existence in Iran of activities undeclared to the Agency for 20 years, it is necessary for Iran to enable the Agency, through maximum

cooperation and transparency, to fully reconstruct the history of Iran's nuclear programme. Without such cooperation and transparency, the Agency will not be able to provide assurances about the absence of undeclared nuclear material and activities in Iran or about the exclusively peaceful nature of that programme.

30. The Director General will continue to report as appropriate.

Source: Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolution 1737 (2006) in the Islamic Republic of Iran// International Atomic Energy Agency official site// <http://www.iaea.org/Publications/Documents/Board/2007/gov2007-08.pdf>.

2.8. Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions 1737 (2006) and 1747 (2007) in the Islamic Republic of Iran

*November 15, 2007
Vienna*

A report of the International Atomic Energy Agency Director General

1. On 30 August 2007, the Director General reported to the Board of Governors on the implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions 1737 (2006) and 1747 (2007) in the Islamic Republic of Iran (Iran) (GOV/2007/48 and Corr.1). This report covers the relevant developments since that date.

A. Implementation of the Work Plan on Outstanding Issues

2. On 21 August 2007, the Secretariat and Iran reached understandings on a work plan for resolving outstanding safeguards implementation issues (GOV/2007/48, Attachment). Since the previous report, the following progress has been made in

the implementation of the work plan.

A.1. P-1 and P-2 Centrifuges

3. The chronology of activities since the previous report is as follows:
 - On 31 August 2007, the Agency provided to Iran in writing the outstanding questions relating to the P-1 and P-2 uranium enrichment programme;
 - On 24 and 25 September 2007, a meeting took place in Tehran between the Agency and Iranian officials to clarify the questions provided to Iran;
 - From 9 to 11 October 2007, another meeting took place in Tehran between the Agency and the Iranian authorities, at which Iran provided oral answers to the questions and the Agency requested additional clarifications and amplifications;

- On 15 October 2007, the Agency received preliminary written answers to the questions;
- From 20 to 24 October 2007, an Agency technical team visited Tehran to review in detail the answers and supporting documentation, and to interview officials involved in the P-1 and P-2 uranium enrichment programme;
- From 29 October to 1 November 2007, the Agency continued discussions with the Iranian authorities on the centrifuge enrichment programme. Iran provided additional supporting documentation and written amplifications and the Agency held discussions and interviews with Iranian officials involved in nuclear activities in the 1980s and 1990s;
- On 5 and 12 November 2007, Iran provided in writing its response to the Agency's questions about the P-1 and P-2 uranium enrichment programme.

A.1.1. Acquisition of Fuel Cycle Facilities and Technology 1972–1995

4. According to Iran, in its early years, the Atomic Energy Organization of Iran (AEOI) concluded a number of contracts with entities from France, Germany, the United Kingdom and the United States of America to enable it to acquire nuclear power and a wide range of related nuclear fuel cycle services, but after the 1979 revolution, these contracts with a total value of around \$10 billion were not fulfilled. Iran noted that one of the contracts, signed in 1976, was for the development of a pilot plant for laser enrichment⁴. Senior Iranian
5. Parallel to the activities related to nuclear power plants, Iran started to build supporting infrastructure by establishing nuclear technology centres in Esfahan and Karaj. However, apart from uranium conversion technology acquired from an entity in China, Iran was not able to acquire other nuclear fuel cycle facilities or technology from abroad. As a result, according to Iran, a decision was made in the mid-1980s to acquire uranium enrichment technology on the black market.
6. To assess the detailed information provided by Iran, the Agency held discussions with senior current and former Iranian officials. The Agency also examined supporting documentation, including Iranian legislation, contracts with foreign companies, agreements with other States and nuclear site surveys.
7. Bearing in mind the long history and complexity of the programme and the dual nature of enrichment technology, the Agency is not in a position, based on the information currently available to

⁴ In addition to the 1976 contract for the laser enrichment pilot plant, concluded with a US company, Iran has reported the conclusion of the following contracts related to laser enrichment (GOV/2004/60, Annex, para. 30):

- 1975 — for the establishment of a laboratory to study the spectroscopic behaviour of uranium metal

(Germany);

- 1991 — for the establishment of a Laser Spectroscopy Laboratory and a Comprehensive Separation Laboratory (China);
- 1998 — to obtain information related to laser enrichment, and the supply of relevant equipment (Russian Federation).

it, to draw conclusions about the original underlying nature of parts of the programme. Further light may be shed on this question when other aspects of the work plan have been addressed and when the Agency has been able to verify the completeness of Iran's declarations.

A.1.2. Acquisition of P-1 Centrifuge Technology

The 1987 Offer

8. As previously reported to the Board (GOV/2005/67, paras 14–15), the Agency was shown by Iran in January 2005 a copy of a hand-written one-page document reflecting an offer for certain components and equipment said to have been made to Iran in 1987 by a foreign intermediary. Iran stated in 2005 that this was the only remaining documentary evidence relevant to the scope and content of the 1987 offer. On 9 October 2007, the Agency was provided with a copy of the document. Certain aspects of the document indicate that it dates from 1987. However, the originator of the document has still not been identified.
9. On 5 November 2007, Iran provided the Agency with an updated chronology of meetings between Iran and the supply network covering the period 1986 to 1987. Iran maintains that only some components of two disassembled centrifuges, plus supporting drawings and specifications, were delivered in 1987 by the network. Iran reiterated that it did not acquire uranium casting and reconversion technology or equipment from the network, nor did it ask for the 15-page document describing the procedures for the reduction of UF₆ to uranium metal, and its casting into hemispheres (GOV/2005/87, para. 6). These points are addressed in A.3 below.
10. According to Iran, the decision to acquire

centrifuge technology was taken by the President of the AEOI and endorsed by the Prime Minister of Iran. In response to its enquiries about possible additional documentation relevant to the 1987 offer, the Agency was provided on 8 November 2007 with a copy of a confidential communication from the President of the AEOI to the Prime Minister, dated 28 February 1987, which also carried the Prime Minister's endorsement, dated 5 March 1987. In his communication, the AEOI President indicated that the activities "should be treated fully confidentially." In response to the Agency's enquiry as to whether there was any military involvement in the programme, Iran has stated that no institution other than the AEOI was involved in the decisionmaking process or in the implementation of the centrifuge enrichment programme.

11. Based on interviews with available Iranian officials and members of the supply network, limited documentation provided by Iran and procurement information collected through the Agency's independent investigations, the Agency has concluded that Iran's statements are consistent with other information available to the Agency concerning Iran's acquisition of declared P-1 centrifuge enrichment technology in 1987.

Early Research and Development

12. Iran has stated that, during the first phase of P-1 research and development (R&D) in 1987–1993, it devoted only limited financial and human resources (three researchers) to the project. According to Iran, emphasis was put on understanding the behaviour of centrifuges and their assembly and on domestic production of components. Iran has also stated that during this period, the R&D work was conducted only by the AEOI, without the support of universities or the Physics Re-

search Centre (PHRC). According to Iran, no contacts were made during this period with the supply network to seek support in solving technical problems which Iran had encountered.

13. Iran's statements about this phase of R&D are not inconsistent with the Agency's findings, which are based on interviews with available Iranian officials and members of the supply network, supporting documentation provided by Iran and procurement information collected during the Agency's investigations. However, the role of the technical university at which uranium particle contamination was found still needs to be examined (see A.2 below).

The 1993 Offer and Subsequent R&D

14. As previously reported to the Board (GOV/2006/15, para. 15), statements made by Iran and key members of the supply network about the events leading up to the mid-1990s offer have been at variance with each other. Over the course of meetings held in October 2007, Iran provided the Agency with an updated chronology of events from 1993 to 1999 which clarified certain details concerning meetings, participants and deliveries of P-1 centrifuge equipment by the network during this period.
15. Iran stated again that in 1993 the supply network, on its own initiative, had approached an Iranian company with an offer to sell enrichment technology. This offer was brought to the attention of the Head of Iran's Budget and Planning Organization, who was also a member of the country's Atomic Energy Council. The offer was then further pursued by the AEOI (GOV/2005/67, para. 16).
16. The Agency has so far not been able to confirm Iran's statement that the supply network initiated the 1993 offer. Information provided by Iran on the deliveries and technical meetings after 1993 is consistent with that given to the Agency in interviews with some of the network members. Based on interviews with Libyan officials and supply network members and information from other sources, the Agency has concluded that most of the items related to the 1993 offer had originally been ordered by the Libyan Arab Jamahiriya but were in fact delivered to Iran in the period 1994 – 1996.
17. Iran stated that, during the period 1993 to 1999, it was still experiencing difficulty in producing components for P-1 centrifuges and manufacturing reliable P-1 centrifuges. It said that only limited human resources were devoted to the project until 1997 and that, around 1998, additional theoretical and experimental studies were initiated at the Amir Khabir University. Its statements in this regard are supported by the technical questions raised by AEOI staff with the network and procurement information available to the Agency.
18. Iran stated that it successfully tested P-1 centrifuges at the end of the 1990s and that a decision was made to go ahead with larger-scale R&D and eventually with an enrichment plant. To that end, Iran stated that it considered locations at Hashtgerd Karaj, Natanz and Esfahan before deciding to build the enrichment plant at Natanz. During this period, procurement activities were intensified and vacuum equipment, as well as special raw materials such as maraging steel and high strength aluminium, were acquired from abroad. Iran has provided names, locations and activities of the workshops involved in the domestic production of centrifuge components, most of which are owned by military industrial organizations (GOV/2004/11, para. 37). Information provided by Iran on the timing of these purchases and the

quantities involved is consistent with the Agency's findings.

A.1.3. Acquisition of P-2 Centrifuge Technology

19. Iran has stated that, in order to compensate it for the poor quality of the P-1 centrifuge components provided by the supply network, the network provided Iran at a meeting in Dubai in 1996 with a full set of general P-2 centrifuge drawings. This statement was confirmed to the Agency in interviews with key members of the network.
20. Iran has reiterated that, although the drawings were acquired in 1996, no work on P-2 centrifuges was begun until 2002. According to the former and current senior management of the AEOI, Iran did not yet have the technical and scientific capabilities to master centrifuge manufacturing during this period. The Agency does not have credible procurement related information pointing to the actual acquisition by Iran of P-2 centrifuges or components during this period (an earlier indication which appeared to support this (GOV/2006/15, para. 18) could not be substantiated).
21. In 2002, the AEOI concluded a contract with a private company to manufacture a modified P-2 centrifuge (GOV/2004/11, para. 45). On 5 November 2007, the Agency received a copy of the contract, the content of which is consistent with earlier interviews with the company owner, who was not available for interview on this occasion. The contract was terminated in March 2003, but the company owner has stated that he continued to work "on his own initiative" until June 2003.
22. The owner of the company stated in earlier interviews that he was able to obtain all raw materials and minor items, with the exception of bearings, oils and mag-

nets, from domestic sources, which is consistent with the procurement information currently available to the Agency. The owner stated that he acquired 150 magnets with P-2 specifications and attempted to buy tens of thousands more, but these orders were cancelled by the suppliers. The AEOI stated that, after termination of his contract with the AEOI, the company owner sought to secure the supply of additional magnets for the AEOI but that his attempts to do so failed, which is consistent with the information available to the Agency through its investigations. Iran acknowledged that composite rotors for P-2 centrifuges had been manufactured in a workshop situated on a Defence Industries Organisation (DIO) site (GOV/2004/34, para. 22).

23. Based on visits made by Agency inspectors to the P-2 workshop in 2004, examination of the company owner's contract, progress reports and logbooks, and information available on procurement enquiries, the Agency has concluded that Iran's statements on the content of the declared P-2 R&D activities are consistent with the Agency's findings. Environmental samples taken at declared R&D locations and from equipment did not indicate that nuclear material was used in these experiments.

A.2. Source of Contamination

24. On 15 September 2007, the Agency provided Iran with questions in writing in connection with the source of uranium particle contamination at the technical university and requested access to relevant documentation and to individuals, as well as to relevant equipment and locations for samplertaking. The questions were, inter alia, about the origin of the uranium particle contamination of equipment (GOV/2006/53, para. 24), the

nature of the equipment, the envisioned use of the equipment and the names and roles of individuals and entities involved (including PHRC). In accordance with the work plan, Iran should provide answers to the questions and the requested access in the next few weeks.

A.3. Uranium Metal Document

25. On 8 November 2007, the Agency received a copy of the 15-page document describing the procedures for the reduction of UF₆ to uranium metal and casting it into hemispheres. Iran has reiterated that this document was received along with the P-1 centrifuge documentation in 1987. The Agency has shared this document with Pakistan, the purported country of origin, and is seeking more information. Iran stated that the reconversion unit with casting equipment mentioned in the one-page 1987 offer was not pursued with the supply network. Apart from the conversion experiments of UF₄ to uranium metal at the Tehran Nuclear Research Centre (GOV/2004/60 Annex, para. 2), the Agency has seen no indication of any UF₆ reconversion and casting activity in Iran. It should be noted, however, that a small UF₆ to uranium metal conversion line in the Uranium Conversion Facility (UCF) was declared by Iran in the design information questionnaire for the UCF (GOV/2003/75, Annex 1, para. 3). This line has not been built, as verified by the Agency's inspectors.

A.4. Polonium-210

26. On 15 September 2007, the Agency provided questions in writing to Iran concerning Iran's activities involving polonium and requested access to relevant documentation, individuals and equipment. The questions were, inter alia, about the scope and objectives of the polonium-

210 studies (GOV/2004/11, para. 28), whether any bismuth acquisitions from abroad had been made or attempted and whether any related theoretical or R&D studies had been carried out in Iran. In accordance with the work plan, Iran should provide answers to the questions and the requested access in the next few weeks.

A.5. Gchine Mine

27. On 15 September 2007, the Agency provided questions in writing to Iran concerning the Gchine Mine and requested access to relevant documentation, individuals and equipment. The questions were, inter alia, about the ownership of the mining area and mill, why activities took place at this location when suitable infrastructure was available elsewhere and why AEOI activities at the mine ceased around 1993 (GOV/2005/67, para. 26). In accordance with the work plan, Iran should provide answers to the questions and the requested access in the next few weeks.

A.6. Alleged Studies

28. The Agency has urged Iran to address at an early date the alleged studies concerning the conversion of uranium dioxide into UF₄ (the green salt project), high explosive testing and the design of a missile re-entry vehicle (GOV/2006/15, paras 38 – 39). In accordance with the work plan, Iran should address this topic in the next few weeks. In the meantime, the Agency is working on arrangements for sharing with Iran documents provided by third parties related to the alleged studies.

A.7. Facility Attachment for the Natanz Fuel Enrichment Plant

29. On 17 and 18 September 2007, an Agency technical team discussed with the Iranian authorities details of a draft Facility Attachment for the Fuel Enrichment Plant (FEP) at

Natanz. Further discussions from 20 to 24 September led to the entry into force of the Facility Attachment on 30 September 2007.

B. Current Enrichment Related Activities

30. On 3 November 2007, the Agency verified that Iran had finished installing eighteen 164-machine cascades at FEP and that UF₆ had been fed into all 18 cascades. There has been no installation of centrifuges or centrifuge pipework outside the original 18-cascade area. Work to install feed and withdrawal infrastructure and auxiliary systems is continuing.

31. Since February 2007, Iran has fed approximately 1240 kg of UF₆ into the cascades at FEP. The feed rate has remained below the expected quantity for a facility of this design. While Iran has stated that it has reached enrichment levels up to 4.8% U-235 at FEP, the highest U-235 enrichment measured so far from the environmental samples taken by the Agency from cascade components and related equipment is 4.0%. Detailed nuclear material accountancy will be carried out during the annual physical inventory taking which is scheduled from 16 to 19 December 2007. Since March 2007, a total of seven unannounced inspections have been carried out at FEP.

32. Since August 2007, Iran has continued to test single centrifuge machines, the 10- and 20-machine cascades and one 164-machine cascade at the Pilot Fuel Enrichment Plant (PFEP). Between 23 July and 22 October 2007, Iran fed 5 kg of UF₆ into the single machines; no nuclear material was fed into the cascades. From 15 to 18 September 2007, the Agency performed a physical inventory verification at PFEP. Although some of the sample results are not yet available, the Agency's provisional evaluation tends to confirm the physical inventory as declared by Iran.

33. There have been several press reports about statements by high level Iranian officials concerning R&D and testing of P-2 centrifuges by Iran (GOV/2006/27, para. 14). In a communication to the Agency received on 8 November 2007, Iran wrote: "Iran voluntarily has informed the IAEA on the status of mechanical test (without UF₆ feeding) of new generation of centrifuge design." In the communication, Iran added that it "agreed that exchanging of the new centrifuge generation information" would be discussed with the Agency in December 2007.

C. Reprocessing Activities

34. The Agency has continued monitoring the use and construction of hot cells at the Tehran Research Reactor (TRR), the Molybdenum, Iodine and Xenon Radioisotope Production Facility (the MIX Facility) and the Iran Nuclear Research Reactor (IR-40) through inspections and design information verification. There have been no indications of ongoing reprocessing related activities at those facilities.

D. Heavy Water Reactor Related Projects

35. On 11 November 2007, the Agency conducted design information verification at the IR-40 and noted that construction of the facility was proceeding. Satellite imagery appears to indicate that the Heavy Water Production Plant is operating. The Agency must rely on satellite imagery of this plant as it does not have routine access to it while the Additional Protocol remains unimplemented.

E. Other Implementation Issues

E.1. Uranium Conversion

36. During the current conversion campaign at UCF, which began on 31 March 2007, approximately 78 tonnes of uranium in the form of UF₆ had been produced as of

5 November 2007. This brings the total amount of UF₆ produced at UCF since March 2004 to approximately 266 tonnes, all of which remains under Agency containment and surveillance.

E.2. Design Information

37. On 30 March 2007, the Agency requested Iran to reconsider its decision to suspend the implementation of the modified text of its Subsidiary Arrangements General Part, Code 3.1. (GOV/2007/22, paras 12–14), but there has been no progress on this issue.

E.3. Other Matters

38. The Agency has made arrangements to verify and seal the fresh fuel foreseen for the Bushehr nuclear power plant on 26 November 2007, before shipment of the fuel from the Russian Federation to Iran.

F. Summary

39. The Agency has been able to verify the non-diversion of declared nuclear material in Iran. Iran has provided the Agency with access to declared nuclear material, and has provided the required nuclear material accountancy reports in connection with declared nuclear material and activities. Iran concluded a Facility Attachment for FEP. However, it should be noted that, since early 2006, the Agency has not received the type of information that Iran had previously been providing, pursuant to the Additional Protocol and as a transparency measure. As a result, the Agency's knowledge about Iran's current nuclear programme is diminishing.

40. Contrary to the decisions of the Security Council, Iran has not suspended its enrichment related activities, having continued the operation of PFEP and FEP. Iran has also continued the construction

of the IR-40 and operation of the Heavy Water Production Plant.

41. There are two remaining major issues relevant to the scope and nature of Iran's nuclear programme: Iran's past and current centrifuge enrichment programme and the alleged studies. The Agency has been able to conclude that answers provided on the declared past P-1 and P-2 centrifuge programmes are consistent with its findings. The Agency will, however, continue to seek corroboration and is continuing to verify the completeness of Iran's declarations. The Agency intends in the next few weeks to focus on the contamination issue as well as the alleged studies and other activities that could have military applications.

42. Iran has provided sufficient access to individuals and has responded in a timely manner to questions and provided clarifications and amplifications on issues raised in the context of the work plan. However, its cooperation has been reactive rather than proactive. As previously stated, Iran's active cooperation and full transparency are indispensable for full and prompt implementation of the work plan.

43. In addition, Iran needs to continue to build confidence about the scope and nature of its present programme. Confidence in the exclusively peaceful nature of Iran's nuclear programme requires that the Agency be able to provide assurances not only regarding declared nuclear material, but, equally importantly, regarding the absence of undeclared nuclear material and activities in Iran. Although the Agency has no concrete information, other than that addressed through the work plan, about possible current undeclared nuclear material and activities in Iran, the Agency is not in a position to provide credible assurances about the

absence of undeclared nuclear material and activities in Iran without full implementation of the Additional Protocol. This is especially important in the light of Iran's undeclared activities for almost two decades and the need to restore confidence in the exclusively peaceful nature of its nuclear programme. Therefore, the Director General again urges Iran to implement the Additional Protocol at the earliest possible date. The Director General also urges Iran to implement all the confidence building measures required

by the Security Council, including the suspension of all enrichment related activities.

44. The Director General will continue to report as appropriate.

Source: Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions 1737 (2006) and 1747 (2007) in the Islamic Republic of Iran// International Atomic Energy Agency official site// <http://www.iaea.org/Publications/Documents/Board/2007/gov2007-58.pdf>.

2.9. G8 Declaration on Counter-Terrorism

*July 16, 2006
St. Petersburg*

We, the Leaders of the G8, meeting in St. Petersburg, categorically denounce terrorist attacks worldwide and condemn in the strongest terms those who perpetrate these atrocities and bring untold suffering and death to citizens. We express our deepest sympathy with all victims of these attacks. If terrorism and violent extremism are permitted to exist anywhere, they diminish our societies everywhere. Today we pledge that we will not rest until the terrible blight of terrorism has been removed from our daily lives.

The global terrorist threat requires a global response. Coordinated action on our part, and with our international partners, will reduce the likelihood of attacks and address their terrible consequences. To that end, and with unified resolve, we will enhance cooperation among ourselves and with other States in the following priority areas:

1. We recognize that the United Nations has a central role and is uniquely suited

to achieve universal agreement among States on the condemnation of terrorism. In the attached statement, we express our resolve to support and strengthen the United Nations' (UN) counter-terrorism efforts and to enhance the role of the entire UN system in coordinating its important work in this area. We will report next year at our Summit in Germany on the results of our efforts.

2. We recognize the urgency of enhancing our cooperation with regard to counter terrorist and other criminal attacks on critical energy infrastructure facilities. We announce a plan of action to secure global critical energy infrastructure, including defining and ranking vulnerabilities of critical energy infrastructure sites, assessing emerging and potential risks of terrorist attacks, and developing best practices for effective security across all energy sectors within our countries.

3. We emphasize the importance in a globalized world of working closely with our private sector partners in our efforts to counter terrorism and to bolster capacity to protect our citizens and businesses as they pursue their work and leisure. We commend the Global Forum for Partnerships between Government and Businesses to Counter-Terrorism, to be held in Moscow in November 2006 and commit to close cooperation within the G8, with other States and with business partners to make this initiative a sustained and successful process.
4. We reaffirm our commitment to collaborative work, with our international partners, to combat the terrorist threat, including:
 - implementing and improving the international legal framework on counter-terrorism;
 - ensuring national legislation is adapted, as appropriate, to address new terrorist challenges;
 - suppressing attempts by terrorists to gain access to weapons and other means of mass destruction;
 - engaging in active dialogue with civil society to help prevent terrorism;
 - enhancing efforts to counter the financing of terrorism based on agreed standards;
 - developing and implementing an effective strategy to counter terrorist propaganda and recruitment, including with regard to the use of suicide bombers;
 - effectively countering attempts to misuse cyberspace for terrorist purposes, including incitement to commit terrorist acts, to communicate and plan terrorist acts, as well as recruitment and training of terrorists;
 - preventing any abuse of the migration regime for terrorist purposes while at the same time facilitating legitimate travel;
 - bringing to justice, in accordance with obligations under international law, those guilty of terrorist acts, as well as their sponsors, supporters, those who plan such acts and those who incite terrorist acts;
 - ensuring and promoting respect for international law, including international human rights law, refugee law and humanitarian law in all our counter-terrorism efforts;
 - promoting supply chain security, based on existing international standards and best practices;
 - promoting international cooperation in subway, rail and road security and in raising standards in aviation, and maritime security.

In the area of transport security, we welcome the declaration and statements adopted at the Ministerial Conference on International Transport Security in Tokyo on January 12-13, 2006, and its first operational outcomes, particularly the international working group on land transport security. We also welcome the outcome of the International Ministerial Conference on Combating Drug Routes from Afghanistan ("Paris 2 - Moscow 1") that took place in Moscow on June 26-28, 2006.

Our collective determination to prevent terrorism and to ensure peace and freedom for our citizens and the people of the world is undiminished. We reiterate our continued resolve to work together to reduce the terrorist threat while protecting fundamental rights and liberties that we have struggled so long to establish. We reaffirm our unshakable belief that terrorism will not succeed. We will advance the ideals of peace, freedom and democracy based on the rule of law.

Source: G8 Declaration on Counter-Terrorism// The official site of Russia's G8 Presidency// <http://en.g8russia.ru/docs/17.html>.

2.10. G8 Statement on Strengthening the UN's Counter-Terrorism Program

*July 16, 2006
St. Petersburg*

1. We, the Leaders of the G8, renew our pledge of solidarity in the continuing struggle against the world-wide scourge of terrorism. At Gleneagles, we denounced all terrorist acts as criminal for which there can be neither excuse nor justification. We agreed to respond resolutely to bring terrorists to justice wherever they are. And, we renewed our commitment to work with partners in the United Nations (UN) and in other international and regional fora.
2. At Evian, we recognized the key role of the UN in the global fight against terrorism and committed to strengthening and enhancing the effectiveness of its efforts. In that regard, we agreed to support the UN Security Council's Counter-Terrorism Committee (CTC) in a variety of ways to broaden its reach and enhance its effectiveness. Recognizing that developing successful capacity to fight terrorism was essential for all countries, we also created the Counter-Terrorism Action Group (CTAG) to focus on building political will and coordinating capacity building assistance while working closely with the CTC. We look forward to working to expand such coordination activity with other partners.
3. Today, in St. Petersburg, we reiterate our condemnation of terrorism in all its forms, clearly and resolutely. As the only truly world body, the UN is the sole organization with the stature and reach to achieve universal agreement on the condemnation of terrorism. We call upon the Secretary-General to continue to use the unique international stature of his office to reinforce this point.
4. A comprehensive response to the urgent threat of terrorism must be a core focus

of the UN. While the Security Council should continue to play its crucial role, as illustrated by the adoption, since Gleaneagles, of resolutions 1617, 1624 and 1673, other UN organs, organizations and bodies must strengthen their efforts as well, thus, contributing to the broader counter-terrorism effort through capacity building, education, economic development and by addressing the facilitating factors that may breed terrorists. Countering terrorism, state-building and development are mutually dependent and mutually supporting. Counter-terrorism should be addressed across the UN system in a coherent and coordinated way. Thus, we welcome the Secretary-General's commitment to help achieve this. Enhanced UN counter-terrorism capacity will have far-reaching benefits. It will reduce the likelihood of conflict and social unrest and contribute to increased foreign investment, good governance and long-term development.

5. Since 2001, the number of UN counter-terrorism-related programs has grown considerably with overlapping monitoring and capacity-building efforts. More should be done to integrate the disparate programs, and we specifically take note of the work initiated by the Secretary-General in this area. We pledge to work with the UN to ensure that each of its programs is results-focused and calibrated to maximize its impact and that subsidiary bodies and their staffs are streamlined and engage with each other and with other relevant international bodies with increased cooperation and systemic coherence.
6. In the 2005 World Summit Outcome document, we, along with the other Heads of State and Government, emphasized that the UN must do more "to assist States in building national and regional capacity

to combat terrorism" and recognized that "many States continue to require assistance in implementing relevant Security Council resolutions." We warmly welcome the emphasis on capacity building in the Secretary-General's recommendations for a global counter-terrorism strategy. The UN must make the best use of limited resources by focusing on the most vulnerable States and identifying and meeting priority needs, working with the donor community. It must engage proactively specialized organizations and agencies, with particular regard to ICAO, WCO, IMO, as well as relevant regional organizations and international financial institutions. We call upon the CTC, relying on its Counter-Terrorism Executive Directorate, to take those steps necessary to make their work more relevant and accessible to both the donor and recipient communities.

7. We observe that, too often states do not comply with their obligations under UN Security Council counter-terrorism resolutions. We call for the Council and its counter-terrorism bodies to redouble efforts to ensure universal compliance. We agree with the Secretary-General that there must be standards of accountability — against which the compliance efforts of each State can be measured with a view to ensure the implementation of the international counter-terrorism obligations. We encourage the UN to develop such concrete standards. Keeping in mind the primary responsibility of the member States to ensure implementation of their counter-terrorism obligations, we reaffirm our commitment to such implementation and call upon all States to meet their obligations.
8. In order to help States meet their obligations under UNSC counter-terrorism resolutions, we encourage the Council,

including through its CTC, 1267 and 1540 committees, to endorse on an expedited basis the counter-terrorism-related recommendations developed by international bodies such as IAEA, ICAO, IMO, and WCO, as well as the FATF, and, most importantly, we support the development of best practices in areas in which none currently exist.

9. The international conventions and protocols related to terrorism adopted by the UN and its specialized agencies have established an important legal framework for international cooperation in investigating and prosecuting terrorist acts. We welcome the efforts of the UNODC's Terrorism Prevention Branch to provide States with technical assistance to enable them to join and implement these instruments. Much more work remains to be done, however, as less than one-half of the UN membership has ratified all twelve of the basic international instruments currently in force. We call on States to redouble their efforts on an urgent basis and to do so, whether or not they are a party to regional conventions.
10. At Gleneagles, we welcomed the adoption by the General Assembly of the International Convention for the Suppression of Acts of Nuclear Terrorism, initiated by the Russian Federation. We call upon all States to ratify this instrument and look forward to its early entry into force. We reiterate our call for the UN General Assembly to conclude swiftly the draft Comprehensive Convention on International Terrorism, which will complement the broad legal framework set out in Security Council resolutions and the other international conventions and protocols

related to terrorism. It is time to conclude this negotiation.

11. We welcome efforts by the UN General Assembly to prioritize its work on counter-terrorism. We commit to work constructively with all UN Member States in concluding our deliberations on the UN strategy as soon as possible. In particular we welcome the emphasis on concrete and practical contributions the UN system is capable of making to the global fight against terrorism and on coordination of donor activities with the United Nations, to ensure resources are effectively invested where they will have the greatest impact in providing further deterrence to terrorism.
12. We recognize that international cooperation to fight terrorism must be conducted in conformity with international law, including the Charter and relevant international conventions and protocols. States must ensure that any measures taken to combat terrorism comply with their obligations under international law, in particular human rights law, refugee law and international humanitarian law.
13. As G8 Leaders, we pledge the sustained commitment required to identify and counter the terrorist threat, and to work together to strengthen the UN's counter-terrorism efforts. We seek to ensure that the UN makes a significant and long-lasting contribution to the global counter-terrorism effort with the ultimate goal of eliminating the terrorist threat. We call upon all States to join us in this crucial endeavor.

Source: G8 Statement on Strengthening the UN's Counter-Terrorism Program// The official site of Russia's G8 Presidency// <http://en.g8russia.ru/docs/18.html>.

2.11. G8 Statement on Non-Proliferation

*July 16, 2006
St. Petersburg*

The proliferation of weapons of mass destruction (WMD) and their means of delivery, together with international terrorism remain the pre-eminent threat to international peace and security. The international community must therefore boldly confront this challenge, and act decisively to tackle this threat. We reaffirm our determination and commitment to work together and with other states and institutions in the fight against the proliferation of WMD, including by preventing them from falling into hands of terrorists.

As an essential element of our efforts to confront proliferation, we are determined to fulfill arms control, disarmament and non-proliferation obligations and commitments under relevant international treaties, conventions and multilaterally agreed arrangements to which we are parties or in which we participate. We call on all other states to meet their obligations and commitments in full in this regard. We rededicate ourselves

to the re-invigoration of relevant multilateral fora, beginning with the Conference on Disarmament. These efforts will contribute to the further reinforcement of the global non-proliferation regime.

We call on all states not Party to the Treaty on the Non-proliferation of Nuclear Weapons (NPT), the Chemical Weapons Convention (CWC), the Biological and Toxin Weapons Convention (BTWC) and the 1925 Geneva Protocol to accede to them without delay and those states that have not yet done so to subscribe to the Hague Code of Conduct Against Ballistic Missile Proliferation. We urge all states concerned to strictly observe a moratorium on nuclear weapon test explosions or any other nuclear explosions.

NUCLEAR NON-PROLIFERATION

NPT

We reaffirm our full commitment to all three pillars of the NPT. We call on all states to

comply with their NPT obligations, including IAEA safeguards as well as developing effective measures aimed at preventing trafficking in nuclear equipment, technology and materials.

IAEA Safeguards

We stress the importance of the IAEA safeguards system. We are seeking universal adherence to IAEA comprehensive safeguards agreements for the effective implementation of Article III of the NPT and to the Additional Protocol. In this context we urge all states that have not yet done so, to sign, ratify and implement these instruments promptly. We are actively engaged in efforts toward this goal, with a view to make comprehensive safeguards agreements together with an Additional Protocol the universally accepted verification standard. We will also work together vigorously to establish the Additional Protocol as an essential new standard in the field of nuclear supply arrangements.

Peaceful Use of Nuclear Energy

We recall that Article IV of the NPT stipulates that nothing in the Treaty shall be interpreted as affecting the inalienable right of all the Parties to the Treaty to develop research, production and use of nuclear energy for peaceful purposes without discrimination and in conformity with Articles I and II of the Treaty. We are committed to facilitate the exchange of equipment, materials and information for the peaceful use of nuclear energy. Full compliance with NPT non-proliferation obligations, including safeguards agreements, is an essential condition for such exchange.

An expansion of the peaceful use of nuclear energy must be carried forward in a manner consistent with nuclear non-proliferation commitments and standards. In this regard, it is important to develop and implement mechanisms assuring access to nuclear fuel

related services to states as an alternative to pursuing enrichment and reprocessing activities. In this respect we appreciate the recent potentially complementary Initiative of the President of the Russian Federation on multinational centers to provide nuclear fuel cycle services and the Initiative of the President of the United States on the Global Nuclear Energy Partnership as well as the recent initiative tabled at the IAEA by France, Germany, the Netherlands, the Russian Federation, the United Kingdom and the United States regarding a concept for a multilateral mechanism for reliable access to enrichment services for nuclear fuel. We will work to elaborate further these initiatives. To further strengthen this common approach we will:

- continue reviewing multinational approaches to the fuel cycle, including international centers to provide nuclear fuel cycle services, with the IAEA, as well as relevant practical, legal and organizational solutions;
- facilitate developing credible international assurances of access to nuclear fuel related services; while
- those of us who have or are considering plans relating to use and/or development of safe and secure nuclear energy will promote research and development for safer, more efficient, more environmentally friendly and more proliferation resistant nuclear energy systems, including relevant technologies of the nuclear fuel cycle. Until advanced systems are in place, appropriate interim solutions could be pursued to address back-end fuel cycle issues in accordance with national choices and non-proliferation objectives.

FMCT

We support the early commencement of negotiations on the Fissile Material Cut-Off Treaty in the Conference on Disarmament.

Enrichment and Reprocessing

In accordance with approaches agreed upon at the G8 summits at Sea Island and in Gleneagles, we support the development of measures to prevent transfers of sensitive nuclear equipment, materials and technologies to states that may seek to use them for weapons purposes, or allow them to fall into terrorists' hands.

We will exercise enhanced vigilance with respect to the transfers of nuclear technology, equipment and material, whether in the trigger list, in the dual-use list, or unlisted, which could contribute to enrichment-related and reprocessing activities, and will be particularly vigilant with respect to attempts to acquire such technology, equipment and material by covert and illicit means.

We agreed at Sea Island that the export of such items should occur only pursuant to criteria consistent with global non-proliferation norms and to those states rigorously committed to these norms. Over the last two years we have made significant progress in the development of such criteria. We welcome the progress noted by the Nuclear Suppliers Group and its commitment to work actively with a view to reaching consensus on this issue by 2007.

In aid of this process we continue to agree, as we did at Sea Island and Gleneagles, that it would be prudent in the next year not to inaugurate new initiatives involving transfer of enrichment and reprocessing technologies to additional states. We call upon all other states to adopt this strategy of prudence.

India

We look forward to reinforcing our partnership with India. We note the commitments India has made, and encourage India to take further steps towards integration into the mainstream of strengthening the non-proliferation regime, so as to facilitate a more

forthcoming approach towards nuclear co-operation to address its energy requirements, in a manner that enhances and reinforces the global non-proliferation regime.

BTWC

We look forward to a successful 6th BTWC Review Conference dedicated to the effective review of the operation of the Convention. We will facilitate adoption by the Review Conference of decisions aimed at strengthening and enhancing the implementation of the BTWC.

We call upon all States Parties to take necessary measures, including as appropriate the adoption of and implementation of national legislation, including penal legislation, in the framework of the BTWC, in order to prohibit and prevent the proliferation of biological and toxin weapons and to ensure control over pathogenic micro organisms and toxins. We invite the States Parties that have not yet done so to take such measures at the earliest opportunity and stand ready to consider appropriate assistance. In this regard, we welcome initiatives such as the 2006 EU Joint Action in support of the BTWC.

CWC

We continue to support full implementation of the CWC. We note the ongoing destruction of chemical weapons by the possessor states and are encouraged by the fact that the stockpiles of these deadly weapons are gradually decreasing. We acknowledge their obligations to destroy chemical weapons and to destroy or convert chemical weapons production facilities within the time limits provided for by the Chemical Weapons Convention.

We welcome the increasing number of States Parties to the Convention. We acknowledge the value of the Organization for the Prohibition of Chemical Weapons' Action Plan on national implementation measures and improve-

ment of the situation with adoption of such measures. We urge States Parties to continue and intensify efforts in this direction. We stand ready to provide appropriate assistance.

UNITED NATIONS SECURITY COUNCIL RESOLUTION 1540

We reaffirm the key role of the UN Security Council in addressing the challenges of proliferation. We urge all states to implement fully UNSC Resolution 1540, including reporting on their implementation of the Resolution.

We welcome the decision of UN Security Council Resolution 1673 to extend the mandate of the 1540 Committee in promoting the full implementation of the resolution. We intend to continue working actively at national and international levels to achieve this important aim, and stand ready to consider all requests for assistance in this regard.

HCOC

We reaffirm our commitment to work toward the, universalisation of the Hague Code of Conduct Against Ballistic Missile Proliferation, and the full implementation of its confidence-building measures.

PSI

We reaffirm our commitment to the Proliferation Security Initiative, which constitutes an important means to counter trafficking in WMD, their delivery means and related materials. We welcome the increasing international endorsement for the Initiative as it was demonstrated at the High Level Political Meeting in Warsaw. We take note of the discussion at that meeting on how PSI states can work cooperatively to prevent and disrupt proliferation finance, in furtherance of the objectives of UNSCR 1540.

Libya

The international community's positive re-

sponse to Libya's renunciation of weapons of mass destruction demonstrates the benefits that follow a strategic decision to cooperate with the international community and be a part of the global nonproliferation mainstream.

Iran

We remain seriously concerned over the proliferation implications of Iran's advanced nuclear programme and we remain united in our commitment to see those implications resolved.

We stand fully behind the far reaching proposals presented to Iran on June 6, 2006 on behalf of China, France, Germany, Russia, the United Kingdom, the United States of America with the support of the High Representative of the European Union for a long-term comprehensive agreement with Iran based on cooperation and mutual respect.

We fully support the Statement of the Foreign Ministers of China, France, Germany, Russia, the United Kingdom, the United States of America issued on July 12, Paris, in which the Ministers and the High Representative of the European Union expressed their profound disappointment over the absence of any indication at all from the Iranians that Iran is ready to engage seriously on the substance of the above-mentioned proposals. Iran has failed to take the steps needed to allow negotiations to begin, specifically the suspension of all enrichment related and reprocessing activities, as required by the IAEA and supported in the United Nations Security Council Presidential Statement. The Ministers therefore decided to return the issue to the United Nations Security Council. We, the Leaders of the G-8, fully support this decision and the clear messages it sends to Iran about the choice it must make. We support the Paris appeal to Iran to respond positively to the substantive proposals made on June 6, 2006.

DPRK

We welcome the unanimously adopted UN Security Council Resolution 1695 which represents the clear and strong will of the international community.

We condemn the launching by the Democratic People's Republic of Korea (DPRK) of multiple ballistic missiles on July 5 local time and express serious concerns as this jeopardizes peace, stability and security in the region and beyond. This action violated the DPRK's pledge to maintain a moratorium on missile launches and is inconsistent with the purposes of the Six-Party Talks Joint Statement of September 19, 2005, in which all parties — including the DPRK — committed to joint efforts to lasting peace and stability in Northeast Asia. We also express our grave concern about the DPRK's indication of possible additional launches. We call on the DPRK to reestablish its preexisting commitments to a moratorium on missile launches and to refrain from contributing to missile proliferation. In accordance with the UN Security Council Resolution 1695 we will exercise vigilance in preventing any external cooperation with the DPRK's missile and WMD programmes.

These missile launches intensify our deep concern over the DPRK's nuclear weapons programmes. We reiterate the necessity for the DPRK promptly to return to full compliance with the NPT. We strongly urge the DPRK to abandon all nuclear weapons and existing nuclear programmes. We reaffirm our full support for the September 19, 2005 Joint Statement and the Six-Party talks. We urge the DPRK to expeditiously return to these talks without precondition and to cooperate to settle the outstanding issues of concern on the basis of this Statement,

which reaffirms the common objective of Six Parties; all participants should intensify their efforts to achieve the verifiable denuclearization of the Korean Peninsula in a peaceful manner and to maintain peace and stability on the Korean Peninsula and in Northeast Asia.

Global Partnership

The Global Partnership against the Spread of Weapons and Materials of Mass Destruction has continued its progress in the past year towards achieving the goals set out at Kananaskis. It has become a significant force to enhance international security and safety. Much has been accomplished in all areas but more has to be done to increase the efficiency of our cooperation.

We reaffirm our commitment to the full implementation of all G8 Global Partnership objectives. We also reaffirm our openness to examine the expansion of the Partnership to other recipient countries and donor states which support the Kananaskis documents and to embrace the goals and priorities of all Partnership members. We welcome the progress GP members have made working with Ukraine.

We appreciate the contribution of 13 non-G8 states who joined the Global Partnership.

We remain committed to our pledges in Kananaskis to raise up to \$20 billion through 2012 for the Global Partnership, initially in Russia, to support projects to address priority areas identified in Kananaskis and to continue to turn these pledges into concrete actions.

Source: G8 Statement on Non-Proliferation// The official site of Russia's G8 Presidency// <http://en.g8russia.ru/docs/20.html>.

2.12. G8 Global Energy Security

*July 16, 2006
St. Petersburg*

Global Energy Challenges

1. Energy is essential to improving the quality of life and opportunities in developed and developing nations. Therefore, ensuring sufficient, reliable and environmentally responsible supplies of energy at prices reflecting market fundamentals is a challenge for our countries and for mankind as a whole.

2. To tackle this overarching goal we have to deal with serious and linked challenges such as:

- high and volatile oil prices;
- growing demand for energy (estimated to rise by more than 50% by the year 2030,
- approximately 80% of which would still be met by fossil fuels, which are limited resources);
- increasing import dependence in many countries;

- enormous investment requirements along the entire energy chain;
- the need to protect the environment and to tackle climate change;
- the vulnerability of the critical energy infrastructure;
- political instability, natural disasters and other threats.

The global nature of these challenges and the growing interdependence between producing, consuming and transiting countries require strengthened partnership between all stakeholders to enhance global energy security. We agree that development of transparent, efficient and competitive global energy markets is the best way to achieve our objectives on this score. We recognize that governments and relevant international organizations also play an important role in addressing global energy challenges.

3. Neither global energy security, nor the Millennium Development Goals can be fully achieved without sustainable access to fuels for the 2.4 billion people and to electricity for the 1.6 billion people currently without such access in developing countries. They cannot be forgotten or marginalized.

Response of the International Community

4. Given political will, the international community can effectively address three interrelated issues: energy security, economic growth and environmental protection (the "3Es"). Applying fair and competitive market-based responses to the global energy challenges will help preclude potentially disruptive actions affecting energy sources, supplies and transit, and create a secure basis for dynamic and sustainable development of our civilization over the long term.
5. We will pursue energy security through a comprehensive and concerted approach consistent with our common environmental goals. Last year in Gleneagles, we agreed to enhance our work under the Plan of Action for Climate Change, Clean Energy and Sustainable Development and resolved to take forward the dialogue on these issues whose results will be reported at the 2008 G8 Summit in Japan. We reaffirm this commitment.

We also reaffirm our commitment to the United Nations Framework Convention on Climate Change (UNFCCC) and to meet our shared multiple objectives of reducing greenhouse gas emissions, improving the global environment, enhancing energy security, and cutting air pollution in conjunction with our vigorous efforts to reduce energy poverty. We also agree to work to improve access to energy in developing countries.

Statement on Global Energy Security Principles

6. Recognizing the shared interest of energy producing and consuming countries in promoting global energy security, we, the Leaders of the G8, commit to:
 - strong global economic growth, effective market access, and investment in all stages of the energy supply chain;
 - open, transparent, efficient and competitive markets for energy production, supply, use, transmission and transit services as a key to global energy security;
 - transparent, equitable, stable and effective legal and regulatory frameworks, including the obligation to uphold contracts, to generate sufficient, sustainable international investments upstream and downstream;
 - enhanced dialogue on relevant stakeholders' perspectives on growing interdependence, security of supply and demand issues;
 - diversification of energy supply and demand, energy sources, geographical and sectoral markets, transportation routes and means of transport;
 - promotion of energy saving and energy efficiency measures through initiatives on both national and international levels;
 - environmentally sound development and use of energy, and deployment and transfer of clean energy technologies which help to tackle climate change;
 - promotion of transparency and good governance in the energy sector to discourage corruption;
 - cooperative energy emergency response, including coordinated planning of strategic stocks;

- safeguarding critical energy infrastructure;
 - addressing the energy challenges for the poorest populations in developing countries.
7. Based on the above objectives, principles and approaches, we will implement our common global energy security strategy through the following Plan of Action. We invite other states, relevant international organizations and other stakeholders to join us in these efforts.

ST. PETERSBURG PLAN OF ACTION GLOBAL ENERGY SECURITY

1. We reaffirm our commitment to implement and build upon the agreements related to energy reached at previous G8 summits. We will enhance global energy security through actions in the following key areas:
 - increasing transparency, predictability and stability of global energy markets;
 - improving the investment climate in the energy sector;
 - enhancing energy efficiency and energy saving;
 - diversifying energy mix;
 - ensuring physical security of critical energy infrastructure;
 - reducing energy poverty;
 - addressing climate change and sustainable development.
2. Free, competitive and open markets are essential to the efficient functioning of the global energy system. Efforts to advance transparency; to deepen and spread the rule of law; to establish and strengthen predictable, efficient fiscal and regulatory regimes; and to encourage sound energy supply and demand policies all play significant roles in maintaining global energy security. By reducing uncertainty these efforts improve understanding of energy market developments, and therefore sound investment decisions and competitiveness. Regular exchanges of timely and reliable information among all market participants are also essential for the smooth functioning of world energy markets. Transparent, predictable national energy policies and regulatory environments facilitate development of efficient energy markets. We invite the International Energy Forum (IEF) to study ways of broadening the dialogue between energy producing and consuming countries on these issues including information exchange on their medium- and long-term respective policy plans and programs.
3. We welcome the beginning of implementation of the Joint Oil Data Initiative (JODI) and will take further action to improve and enhance the collection and reporting of market data on oil and other energy sources by all countries including through development of a global common standard for reporting oil and other energy reserves. In this respect, we will invite the IEF to work on the expansion of JODI membership and to continue to improve the quality and timeliness of data.
4. As a critical tool in the fight against corruption, we will also take forward efforts to make management of public revenues from energy exports more transparent, including in the context of the Extractive Industries Transparency Initiative (EITI) and the IMF Guide on Resource Revenue Transparency (GRRT).
5. Clear, stable and predictable national regulatory frameworks significantly con-

Increasing Transparency, Predictability and Stability of Global Energy Markets

2. Free, competitive and open markets are essential to the efficient functioning of the global energy system. Efforts to advance transparency; to deepen and spread the rule of law; to establish and strengthen predictable, efficient fiscal and regulatory

tribute to global energy security, and multilateral arrangements can further enhance these frameworks. We support the principles of the Energy Charter and the efforts of participating countries to improve international energy cooperation.

6. Concerted actions of energy producers and consumers are of critical importance in times of supply crises. We encourage further efforts under the IEA aegis to promote international best practices related to emergency response measures, including establishment, coordination and release of strategic stocks, where appropriate, as well as measures to implement demand restraint and fuel-switching. We note constructive steps by major producing countries to increase oil output in response to recent tight market conditions and support additional actions.

Improving the Investment Climate in the Energy Sector

7. Ensuring an adequate global energy supply will require trillions of U.S. dollars in investment through the entire energy chain by 2030, a substantial share of which will be needed by developing countries. We will create and maintain the conditions to attract these funds into the energy sector through competitive, open, equitable and transparent markets. We understand that governments' environmental and energy policies are critical for investment decisions. In producing, consuming and transit states, therefore, we will promote predictable regulatory regimes, including stable, market-based legal frameworks for investments, medium and long-term forecasts of energy demand, clear and consistent tax regulation, removal of unjustified administrative barriers, timely and effective contract enforcement and access to effective dispute settlement procedures.
8. We shall take measures both nationally and internationally to facilitate investments into a sustainable global energy value chain to:
 - further save energy through demand-side measures as well as introduce advanced energy-efficient technologies;
 - introduce cleaner, more efficient technologies and practices including carbon capture and storage;
 - promote wider use of renewable and alternative energy sources;
 - expand the hydrocarbon proven reserves in a way that would outpace their depletion and increase the recovery of energy resources;
 - increase the efficiency of oil and gas production, and develop resources on the continental shelf;
 - establish, expand and improve the efficiency of oil-refining, petrochemical and gas processing industries' capacity;
 - develop global LNG market;
 - establish or upgrade infrastructure for energy transport and storage;
 - develop efficient power generating facilities; and
 - expand and improve the efficiency, safety and reliability of electricity transmission facilities and power grids and their international connectivity including, where appropriate, in developing countries.
9. We encourage construction and development of hydrocarbon-processing facilities to increase energy market flexibility and confidence, as well as expansion, where economically viable, of trade in hydrocarbon products. We will work with all stakeholders to improve energy regulatory regimes, inter alia, through feasible technical standards harmonization. We

will ask the International Standards Organization to study ways and means of harmonizing relevant standards in this context.

10. We consider it important to facilitate capital flows into power generation, including to build new, more efficient power plants, upgrading existing plants to include wider use of renewables, and to construct transmission lines, develop interregional energy infrastructure and facilitate exchange of electrical power, including trans-border and transit arrangements. We encourage the development of competitive power markets, interregional energy infrastructure, and exchange of electrical power.
11. Rapidly growing LNG trade is gradually supplementing the existing regional systems of pipeline gas supplies. To reduce huge investment risks and facilitate smooth functioning of the emerging global LNG market, we will seek to create appropriate investment conditions.
12. High and increasing investment exposure calls for better risks sharing between all stakeholders in energy supply chain which will ensure reliable and sustainable energy flows. Economically sound diversification between different types of contracts, including market-based long-term and spot contracts, could contribute to such risks mitigation, as would timely decision-making and appropriate adherence and enforcement of contractual agreements.
13. We will work to reduce barriers to energy investment and trade. It is especially important that companies from energy producing and consuming countries can invest in and acquire upstream and downstream assets internationally in a mutually beneficial way and respecting competition rules to improve the global

efficiency of energy production and consumption. Market-based investment flows between and among nations will also enhance energy security by increasing confidence in access to markets or sources of supply.

14. Ensuring the long-term availability of skilled workforce throughout the energy sector is critical to energy security. We encourage institutions of higher learning and the private sector to take the necessary steps in providing appropriate training to adequately develop human resources in the energy sector, including new and innovative energy sources and technologies needed for ensuring longer-term energy security.

Enhancing Energy Efficiency and Energy Saving

15. Energy saved is energy produced and is often a more affordable and environmentally responsible option to meet the growing energy demand. Efforts to improve energy efficiency and energy saving contribute greatly to lowering the energy intensity of economic development thus strengthening global energy security. Increased energy efficiency and conservation reduce stress on infrastructure and contribute to a healthier environment through decreased emission of greenhouse gases and pollutants.
16. We will move forward with timely implementation of the Gleneagles Plan of Action. We have instructed our relevant ministers to continue the Dialogue on Climate Change, Clean Energy and Sustainable Development and report its outcomes to the G8 Summit in 2008. We call upon other states, especially fast-growing developing economies, to join the corresponding G8 initiatives. These outcomes can also be relevant to the dialogue on long-term co-operation to address climate change under

the UNFCCC. Those of us who have ratified the Kyoto Protocol recognize the role of its flexibility mechanisms in promoting energy efficiency. It is important to engage the private sector and other stakeholders in achieving these ends.

17. A comprehensive approach within the international community to energy saving, energy efficiency and the extension of relevant efforts, including sharing best practices, to the entire energy value chain are important in this respect. For this purpose, we shall undertake to:

- strengthen and elaborate the system of national and multilateral energy efficiency statistics;
- consider national goals for reducing energy intensity of economic development to be reported by the end of the year;
- for energy intensive products, encourage the development, extension and deployment of best practice energy efficiency labeling programs, and increase efforts to adopt the most stringent energy efficiency standards that are technically feasible and economically justified. Individual countries should set these standards taking into account national conditions. In this context the IEA initiatives on standby power ("1 Watt" initiative), minimum efficiency standards for television set-top boxes and digital television appliances, energy efficient lighting and fuel-efficient tire program are promising and should be examined in more detail;
- take necessary measures, including financial and tax incentives at home for the promotion of energy-efficient technologies, and the actual use of those available technologies on a wide-scale basis;
- demonstrate leadership at the national level by incorporating energy efficient technologies and practices in govern-

ment buildings and drawing upon alternative energy resources to help power them;

- raise public awareness about the importance and benefits of energy efficiency and energy saving.
- encourage relevant actions taken by multilateral development banks (MDBs), including EBRD and the World Bank;
- increase the Global Environment Facility's involvement in energy efficiency projects.

18. We will invite the World Bank, the IEA, and other organizations as appropriate to work on improvement of internationally accepted standards, labeling and best practices, and public awareness campaigns, in accordance with their respective mandates and comparative advantages.

19. As part of an integrated approach to the entire resource cycle we reaffirm our commitment to comprehensive measures to optimize the resource cycle within the 3Rs Initiative (Reduce, Reuse, Recycle). In furthering these efforts, we will set targets as appropriate taking account of resource productivity. We will also raise awareness of the importance of energy efficiency and environmental protection through national as well as international efforts.

20. Increasing energy saving and efficiency we will pay more attention to the energy sector itself, which can contribute significantly to this end by reducing losses in production and transportation. Our priority measures in this area will include:

- raising the environmental and efficiency levels for processing hydrocarbons;
- reducing gas flaring to minimal levels and promoting utilization of associated gas;

- improving energy infrastructure, including minimizing oil and oil products losses in transportation and gas emissions from gas systems;
 - using methane otherwise released in the atmosphere from coal mining, landfills, and agricultural operations.
21. Since 2/3 of world oil is consumed by the transportation sector and its fuel consumption is outpacing general energy consumption we will pay special attention to this sector of energy demand. For making transportation more energy efficient and environmentally advanced we shall:
- share best practices to promote energy efficiency in the transportation sector;
 - develop programs in our respective countries, consistent with national circumstances, to provide incentives for consumers to adopt efficient vehicles, including clean diesels and hybrids; and introduce on a large scale efficient public hybrid and/or clean diesel transportation systems, where appropriate;
 - promote diversification of vehicle energy systems based on new technologies, including significant sourcing from biofuels for motor vehicles, as well as greater use of compressed and liquefied natural gas, liquefied petroleum gas and synthetic liquid fuels;
 - promote wider use of modern technologies, materials and devices on traditional vehicles, leading to lighter, more aerodynamic and more efficient engines and other transport components such as transmission and steering systems, tires, etc.;
 - increase research to develop vehicles using gasoline/hydrogen fuel and hydrogen fuel cells to promote the "hydrogen economy";
 - facilitate the development of trans-modal and trans-border transportation, where appropriate;
 - study further the Blue Corridor project by the UN Economic Commission for Europe;
 - continue to consider the impact of the air transport sector on energy consumption and greenhouse gas emissions noting international cooperation on these issues.
22. We call upon all countries to offer incentives to increase energy efficiency and to promote energy conservation.

Diversifying Energy Mix

23. Diversification of the energy mix reduces global energy security risks. We will work to develop low-carbon and alternative energy, to make wider use of renewables and to develop and introduce innovative technologies throughout the entire energy sector.

Alternative, cleaner low-carbon energy

24. We shall further encourage the activities of the Carbon Sequestration Leadership Forum (CSLF) aimed at preparing and implementing demonstration projects on CO₂ capture and storage and on the development of zero emission power plants. In this context we will facilitate development and introduction of clean coal technologies wherever appropriate.
25. We encourage all oil producing states and private sector stakeholders to reduce to minimal levels natural gas venting or flaring by facilitating the use of associated gas, including its refining and processing into fuels and petrochemical products. In this respect we support the efforts of Global Gas Flaring Reduction Partnership (GGFR) and Methane-to-Markets Partnership (M2M) to implement projects on the production of marketable methane from landfills, agriculture waste

and coal-bed methane, particularly in developing countries.

26. We support the transition to the Hydrogen Economy, including in the framework of the International Partnership for the Hydrogen Economy (IPHE). A critical part of this effort is to develop common international standards in the field of commercial development of hydrogen power, infrastructure and security requirements.

Nuclear energy

27. We recognize that G8 members pursue different ways to achieve energy security and climate protection goals.

28. As we meet on the 20th anniversary of the Chernobyl accident, we reiterate the commitments made during the 1996 Moscow Summit on Nuclear Safety and Security, and the paramount importance of safety, security and non-proliferation.

29. Those of us who have or are considering plans relating to the use and/or development of safe and secure nuclear energy believe that its development will contribute to global energy security, while simultaneously reducing harmful air pollution and addressing the climate change challenge:

- The development of innovative nuclear power systems is considered an important element for efficient and safe nuclear energy development. In this respect, we acknowledge the efforts made in the complementary frameworks of the IN-PRO project and the Generation IV International Forum.
- Until advanced systems are in place, appropriate interim solutions could be pursued to address back-end fuel cycle issues in accordance with national choices and non-proliferation objectives.
- Benefits will stem from improving the

economic viability of nuclear power. We recognize that independent effective regulation of nuclear installations is essential for the development of infrastructure supporting safe and secure nuclear energy.

30. We are committed to:

- further reduce the risks associated with the safe use of nuclear energy. It must be based on a robust regime for assuring nuclear non-proliferation and a reliable safety and security system for nuclear materials and facilities;
- ensure full implementation of the international conventions and treaties in force today which are a prerequisite for a high level of safety and a basis to achieve a peaceful and proliferation-resistant nuclear energy use. The responsibility of all nations to support the work of the IAEA and all measures to implement these conventions and treaties in these fields is emphasized;
- continue to consider nuclear safety and security issues in the Nuclear Safety and Security Group (NSSG).

31. We reaffirm the objective set out in the 2004 G8 Action Plan on Non-Proliferation to allow reliable access of all countries to nuclear energy on a competitive basis, consistent with non-proliferation commitment and standards. Building on that plan, we intend to make additional joint efforts to ensure reliable access to low enriched uranium for power reactor fuel and spent fuel recycling, including, as appropriate, through multilateral mechanisms provided that the countries adhere to all relevant international non-proliferation commitments and comply with their obligations.

32. In this respect, we take note of recent potentially complementary initiatives put forward

in the IAEA framework regarding multilateral fuel supply assurances, as well as the proposals made by Russia and the U.S., aimed at further development of peaceful nuclear energy, in a manner that promotes proliferation resistance of the nuclear fuel cycle, including preventing the spread of sensitive nuclear technologies.

Renewables

33. A large-scale use of renewable energy will make a significant contribution to long-term energy supply without adverse impact on climate. The renewable solar, wind, hydro, biomass, and geothermal energy resources are becoming increasingly cost competitive with conventional fuels, and a wide variety of current applications are already cost-effective. Therefore, we reaffirm our commitment to implement measures set out in the Gleaneagles Plan of Action.
34. We welcome the work of interested parties in international mechanisms and programs dealing with renewable energy, including the Renewable Energy and Energy Efficiency Program (REEEP), the Renewable Energy Policy Network for the 21st Century (REN21), and the Mediterranean Renewable Energy Partnership (MEDREP). We welcome the establishment of the Global Bio-Energy Partnership (GBEP). We will work in partnership with developing countries to foster the use of renewable energy.
35. We will continue enhancing international cooperation in using the potential of biomass, and advanced sustainable forest management practices. Both help to diversify local energy consumption and make an important contribution to carbon sequestration, as well as furthering a wide range of economic and environmental benefits.
36. We shall promote international coopera-

tion in the area of forest management, primarily in addressing deforestation and forest degradation, the trade in illegally harvested timber and forest fires. We note that deforestation has a significant impact on climate change (resulting, according to the Food and Agriculture Organization of the United Nations (FAO), in an actual 25% increase in yearly greenhouse gas emissions). We reaffirm the importance of tackling illegal logging and agree to take further action, with each country taking steps where it can contribute most effectively. This should include the promotion of sustainable forest management and the incorporation of appropriate measures to address illegal logging in relevant national policies of both timber-producing and consuming countries. We welcome recent international forest-related policy initiatives including the St. Petersburg Ministerial Conference Declaration on Forest Law Enforcement and Governance in Europe and North Asia, and initiatives of the United Nation Forum on Forests (UNFF), UNFCCC, the International Tropical Timber Organization (ITTO) and Asia Forest Partnership (AFP).

Innovative energy technologies

37. We will work in partnership with the private sector to accelerate market entry and utilization of innovative energy technologies by supporting market-led policies that encourage investments in this area.
38. Despite the increased role of alternative sources in the energy mix, hydrocarbons are expected to continue to play a leading role in total energy consumption well into this century. Therefore we will work with the private sector to accelerate utilization of innovative technologies that advance more efficient hydrocarbon production and reduce the environmental impact of its production and use. These

include technologies for deep-sea oil and gas production, oil production from bitumen sands, clean coal technologies, including carbon capture and storage, extraction of gas from gas-hydrates and production of synthetic fuel.

39. We will take measures to develop other promising technologies including construction of advanced electricity networks, superconductivity, nanotechnology, including nanobiotech, etc. We welcome recent initialing ITER agreement by the participating countries and take this opportunity to encourage R&D programs on fusion energy within its framework.
40. We shall facilitate closer ties between fundamental and applied research to promote the earliest economically viable market entry of these technologies.

Securing Critical Energy Infrastructure

41. The security of the world's energy infrastructure is connected and mutually dependent. Given the global nature of the energy infrastructure, we recognize that no country can insulate itself from danger elsewhere. Hence, we are committed to ensuring the security of the global energy network, and will work to gain a better understanding of its vulnerabilities and ways to improve our efforts to prevent disruptions by deliberate attack. We support a coordinated, international process to assess risks to energy infrastructures, and a more effective means of sharing energy infrastructure security best practices and expertise.
42. We commit ourselves to address threats and vulnerabilities to critical energy infrastructures, and to promote international cooperation in this regard. We instruct our experts to meet as necessary to examine and make recommendations on

addressing the many challenges in securing energy infrastructure and deliver to the Russian Presidency at the end of this year a comprehensive report on:

- defining and prioritizing the most important vulnerabilities among energy infrastructure sites, and sharing methodologies for assessing and mitigating them;
- assessing potential risks of terrorist attacks;
- developing a compendium of effective security response best practices across all energy sectors within our countries;
- developing, implementing, and providing to other countries a checklist for the physical security of critical energy infrastructure;
- encouraging international cooperation on R&D for technologies to enhance critical infrastructure protection;
- establishing points of contact for coordination of technical assistance in this area;
- continuing to advocate the adoption of export controls on radioactive sources and new initiatives to prevent terrorists' access to radioactive sources.

43. We call upon governments to fully implement the International Ships and Ports Facility Security Code and encourage attention to the management of maritime security.

Reducing Energy Poverty

44. We confirm our commitment to the UN Millennium Development Goals, including through facilitating a better access to energy. It is impossible to drastically reduce general poverty, support health services, provide clean drinking water and sanitation, promote more productive agriculture and food yields, and secure

investment in job-creating enterprises in developing countries without addressing the challenge of energy poverty. We will help vulnerable countries overcome the macroeconomic shocks related to energy prices, and the longer term challenge of facilitating access to energy for the poorest populations.

45. A sound strategy to address energy poverty should be linked with:
 - development of national and local institutional capacities and management improvements in the area of energy policy and related infrastructure needs, including training of local staff;
 - facilitation of public participation in and public understanding of, energy policies and practices;
 - national energy investment and access targets linked to poverty reduction policies;
 - expansion of existing frameworks, such as the EU Energy Initiative (EUEI), the MEDREP, GBEP, the Global Village Energy Partnership (GVEP); the Renewable Energy and Energy Efficiency Partnership (REEEP), for private-public partnerships to foster investment that increases access to affordable energy services;
 - establishment of an energy efficiency program and development of decentralized technologies, where economically justified, and geared toward reducing the cost of energy for the poor;
 - a targeted and transparent social safety net system that can help poor and vulnerable customers pay for energy.
46. The majority of energy investment will need to come from the private sector. Assistance programs for developing countries should work towards promoting the improved policy and regulatory structures necessary to attract that capital.
47. The international financial institutions (IFIs) have an important role to play in tackling these challenges. We welcome the progress of the multilateral development banks to re-invigorate their efforts to promote investment in alternative energy sources, increased energy efficiency and adaptation in developing countries. We also welcome the launching of the International Monetary Fund's Exogenous Shocks Facility, and invite other non-G8 countries to contribute to it. We call upon other countries and IFIs to facilitate access to energy in the poorest countries by promoting private-public partnerships.
48. To improve access to reliable, modern, and sustainable energy services to the populations of energy poor developing countries, we will enhance existing bilateral and multilateral development mechanisms. We welcome the EU's Energy Facility, which will use grants to co-finance projects aimed at filling the energy gap, especially in Africa, as well as activities by Japan in partnership with AfDB to promote the "Enhanced Private Sector Assistance" (EPSA) for Africa. We look forward to the outcome of the UN Commission on Sustainable Development's two-year cycle of work (2006-7) devoted to the review/policy discussion of the Energy for Sustainable Development issue.
49. We will facilitate development of local energy resources, including those based on core generation technologies and on renewable energy, such as hydropower, wind power, geothermal power, biomass, and the effective use of solar energy, to contribute to poverty reduction and long-term energy sustainability in developing countries. These measures include developing energy infrastructure capable, inter alia, of reducing vulnerability to energy shocks.
50. We instructed our experts to work to-

gether with other countries, international and regional financial institutions (World Bank, Regional Development Banks, UN agencies, etc.), the private sector and other stakeholders to facilitate technology transfer in the areas of energy efficiency, energy saving, renewable energy and decentralized local sources to reduce energy poverty thereby improving energy access and enhancing energy efficiency in developing countries. Building on the Gleneagles Plan of Action, such concerted efforts may help improve energy efficiency and promote energy conservation in developing countries through the following actions:

- supporting the development of infrastructure to improve energy access tailored to specific needs and targeted towards energy efficiency;
 - assisting in policy and institutional capacity building for improving energy access, enhancing energy efficiency and promoting energy conservation and diversification of energy sources;
 - promoting renewable energy;
 - encouraging rural electrification, using both grid and non-grid connected solutions;
 - developing human resources in cooperation with the private sector.
51. We look forward to the completion and implementation of the World Bank Clean Energy Investment Framework and underline that it should give increased attention to improving access to energy services.
52. We share the view that strengthening national financial management and accounting systems, making government budgets, procurement procedures and concessions more transparent, taking specific measures to combat corruption,

ensuring good governance, mobilizing domestic resources and progressively improving the business climate for private entrepreneurs and investors are essential for resolving effectively the above mentioned challenges in developing countries. In this context we also refer to the Gleneagles decision concerning Africa.

Addressing Climate Change and Sustainable Development

53. We reaffirm our intention to deliver on commitments made in Gleneagles in order to meet our shared and multiple objectives of reducing greenhouse gas emissions, improving the global environment, enhancing energy security and cutting air pollution in conjunction with our vigorous efforts to reduce poverty. We also affirm our commitment to the UNFCCC's ultimate objective of stabilizing greenhouse gas concentrations in the atmosphere at a level that prevents dangerous anthropogenic interference with the climate system.

We will continue to work to reduce greenhouse gas and deal effectively with the challenge of climate change.

We are undertaking a number of approaches to deal with the interrelated challenges of energy security, air pollution control, and reducing greenhouse gas associated with long-term global climate change. With respect to climate change, we reaffirm our shared commitment under the UNFCCC and its related mechanisms.

Those of us committed to making the Kyoto Protocol a success underline the importance we attach to it, view Clean Development Mechanism and the Joint Implementation Mechanism as central elements of this, and look forward to the process to develop it further.

Some or all of us are participating in the following other initiatives to address these challenges: Asia-Pacific Partnership on Clean Development and Climate, the Methane to Markets Partnership, the International Partnership for the Hydrogen Economy, the Carbon Sequestration Leadership Forum, the Renewable Energy and Energy Efficiency Partnership and the Global Bio-Energy Partnership.

We welcome the progress made at the XI Conference of the Parties to the UNFCCC (Montreal, December 2005) where we committed to engage in a dialogue on long-term cooperative action to address climate change by enhancing implementation of the convention; and the progress made at the UN Climate Change meeting last May in Bonn.

We reaffirm the importance of the work of the Intergovernmental Panel on Climate Change (IPCC) and look forward to its 2007 report.

All these undertakings are the foundation of our current efforts to address climate change, and will form the basis of an inclusive dialogue on further action in the

future, including the period beyond 2012.

54. We welcome the progress made by the World Bank and the IEA on developing a framework for clean energy and sustainable development and on identifying alternative energy scenarios and strategies to support and implement elements of the Gleneagles Plan of Action.
55. We welcome the progress made at the first meeting of the Gleneagles Dialogue on Climate Change, Clean Energy and Sustainable Development, held on 1 November last year. We look forward to the next Ministerial meeting in Mexico in October 2006, where we will continue to identify opportunities for greater collaboration to tackle climate change, while pursuing energy security and sustainable development through deployment of cleaner, more efficient and low-carbon energy technologies, finance and market mechanisms, including, as appropriate, Clean Development Mechanism, Joint Implementation, emissions trade, and adaptation.

Source: G8 Global Energy Security// The official site of Russia's G8 Presidency// <http://en.g8russia.ru/docs/11.html>.

2.13. G8 Report of the Nuclear Safety and Security Group

*July 16, 2006
St. Petersburg*

GENERAL NOTE

The nations now forming the G8 have initiated and monitored major national and international programs to resolve urgent nuclear safety and security needs and to establish partnership relations on these issues. Nuclear conventions and associated peer reviews in the field of safety, effective national regulatory infrastructures, current nuclear safety standards and security guidelines as well as review services under the IAEA constitute important prerequisites for the world's community to establish a global nuclear safety and security regime.

We welcome the summary report of the Review meeting of the Joint Convention (15-24 May 2006) and the conclusions herewith contained.

We call upon all States to become parties, as soon as practicable, to the two most recent universal instruments to combat nuclear terrorism; namely, the International Convention for the Suppression of Acts of Nuclear Terrorism, adopted at New York, 13 April 2005, and the Amendment to the Convention on the Physi-

cal Protection of Nuclear Material, adopted at Vienna, 8 July 2005.

We note the results of the IAEA International Conference "Effective Nuclear Regulatory Systems" held in Moscow, the Russian Federation, 27 February – 3 March 2006. An effective, efficient nuclear regulatory system is essential for our safety and security. We re-affirm the importance for national regulators to have sufficient authority, independence, and competence.

CHERNOBYL

This year marks the 20th Anniversary of the accident in Chernobyl NPP. This accident became a crucial point of large-scale re-evaluation of Nuclear Power Plants (NPPs) safety issues, identification of new approaches to safety culture and further development of international cooperation on nuclear safety. The International Community continues to undertake joint efforts with Ukraine on construction of Chernobyl NPP on-site facilities aimed at improving its safety.

As the G8 group of nations we will continue to support measures to enhance nuclear safety, security and regulatory best practices to avoid reoccurrence of such an accident.

Out of the numerous bilateral governmental and non-governmental efforts and initiatives amounting to several billion US\$, we note that the G8 nations together with the European Union and other donors, through the European Bank for Reconstruction and Development have pledged funds to implement safety and security projects at the Chernobyl site through the Nuclear Safety Account and the Chernobyl Shelter Fund.

We remain resolute in our undertakings to Ukraine, both within the framework of EBRD programmes and under former G7 summit declarations and memoranda of understanding, that we have and will continue to support the work on a New Safe Confinement and necessary pre-decommissioning activities in respect of radioactive waste treatment and spent fuel based on fair burden sharing. At the same time we appreciate the progress achieved in the course of stabilisation of existing confinement. We reassert our confidence in the EBRD to administer the funds that have been donated under both the Chernobyl Shelter Fund and the Nuclear Safety Account. We urge the Government of Ukraine in collaboration with EBRD, to take all necessary measures to assist in timely and efficient implementation of these programmes within the agreed frameworks.

RADIOACTIVE SOURCES

At Evian, we resolved to improve controls on radioactive sources and to prevent their unauthorized use. We have made much progress and have expressed a commitment to fulfill the IAEA Code of Conduct on the Safety and Security of Radioactive Sources provisions and are working to put into place the controls over the import/export of radioactive sources at the earliest possible date.

We welcome the fact that more than 83 countries have committed to implement the IAEA Code of Conduct on the Safety and Security of Radioactive Sources and urge all other states to adopt the Code.

We welcome the adoption by consensus by the UNGA of resolution 60/73 on the prevention of the risk of radiological terrorism.

We will continue to support international efforts to enhance regulatory controls on radioactive sources, in particular the Regional Model Projects, the IAEA program to help establish effective and sustainable regulatory infrastructures.

We will continue to strengthen our cooperation to improve the security of radioactive sources worldwide.

ARMENIA NUCLEAR POWER PLANT

We, as members of the G-8, urge Armenia to fund and undertake upgrades necessary to ensure that ANPP can operate in a safe manner until it can be shut down and decommissioned.

We take note of some short-term safety measures already undertaken by Armenia as a first step.

Since only limited donor funding is likely to be provided for some urgent safety upgrades and for the Armenian Nuclear Regulatory Authority, we urge Armenia 1) to prepare and implement a systematic and comprehensive safety upgrading program, 2) to provide ANRA with the required human and financial resources and the necessary degree of authority, competence and independence to enable it to carry out an effective and efficient regulatory program consistent with international standards and 3) to establish in the near future decommissioning fund sufficient to meet closure perspectives.

Source: G8 Report of the nuclear Safety and Security Group// The official site of Russia's G8 Presidency// <http://en.g8russia.ru/docs/24.html>.

2.14. The Treaty between the United States of America and the Russian Federation on Strategic Offensive Reductions

May 24, 2002
Moscow

The United States of America and the Russian Federation, hereinafter referred to as the Parties,

Embarking upon the path of new relations for a new century and committed to the goal of strengthening their relationship through cooperation and friendship,

Believing that new global challenges and threats require the building of a qualitatively new foundation for strategic relations between the Parties,

Desiring to establish a genuine partnership based on the principles of mutual security, cooperation, trust, openness, and predictability,

Committed to implementing significant reductions in strategic offensive arms,

Proceeding from the Joint Statements by the President of the United States of America

and the President of the Russian Federation on Strategic Issues of July 22, 2001 in Genoa and on a New Relationship between the United States and Russia of November 13, 2001 in Washington,

Mindful of their obligations under the Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Reduction and Limitation of Strategic Offensive Arms of July 31, 1991, hereinafter referred to as the START Treaty,

Mindful of their obligations under Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons of July 1, 1968, and

Convinced that this Treaty will help to establish more favorable conditions for actively promoting security and cooperation, and enhancing international stability,

Have agreed as follows:

ARTICLE I

Each Party shall reduce and limit strategic nuclear warheads, as stated by the President of the United States of America on November 13, 2001 and as stated by the President of the Russian Federation on November 13, 2001 and December 13, 2001 respectively, so that by December 31, 2012 the aggregate number of such warheads does not exceed 1700-2200 for each Party.

Each Party shall determine for itself the composition and structure of its strategic offensive arms, based on the established aggregate limit for the number of such warheads.

ARTICLE II

The Parties agree that the START Treaty remains in force in accordance with its terms.

ARTICLE III

For purposes of implementing this Treaty, the Parties shall hold meetings at least twice a year of a Bilateral Implementation Commission.

ARTICLE IV

1. This Treaty shall be subject to ratification in accordance with the constitutional procedures of each Party. This Treaty shall enter into force on the date of the exchange of instruments of ratification.
2. This Treaty shall remain in force until December 31, 2012 and may be extended by agreement of the Parties or superseded earlier by a subsequent agreement.
3. Each Party, in exercising its national sovereignty, may withdraw from this Treaty upon three months written notice to the other Party.

ARTICLE V

This Treaty shall be registered pursuant to Article 102 of the Charter of the United Nations.

Done at Moscow on May 24, 2002, in two copies, each in the English and Russian languages, both texts being equally authentic.

Source: The Treaty between the United States of America and the Russian Federation on Strategic Offensive Reductions// The official site of the U.S. Department of State // <http://www.state.gov/p/eur/rls/or/2002/10471.htm> .

2.15. US-Russian Joint Declaration on New Strategic Relations

May 24, 2002
Moscow

The United States of America and the Russian Federation,

Recalling the accomplishments at the Ljubljana, Genoa, Shanghai, and Washington/Crawford Summits and the new spirit of cooperation already achieved;

Building on the November 13, 2001 Joint Statement on a New Relationship Between the United States and Russia, having embarked upon the path of new relations for the twenty-first century, and committed to developing a relationship based on friendship, cooperation, common values, trust, openness, and predictability;

Reaffirming our belief that new global challenges and threats require a qualitatively new foundation for our relationship;

Determined to work together, with other na-

tions and with international organizations, to respond to these new challenges and threats, and thus contribute to a peaceful, prosperous, and free world and to strengthening strategic security;

Declare as follows:

Foundation for Cooperation

We are achieving a new strategic relationship. The era in which the United States and Russia saw each other as an enemy or strategic threat has ended. We are partners and we will cooperate to advance stability, security, and economic integration, and to jointly counter global challenges and to help resolve regional conflicts.

To advance these objectives the United States and Russia will continue an intensive dialogue on pressing international and

regional problems, both on a bilateral basis and in international fora, including in the UN Security Council, the G-8, and the OSCE. Where we have differences, we will work to resolve them in a spirit of mutual respect.

We will respect the essential values of democracy, human rights, free speech and free media, tolerance, the rule of law, and economic opportunity.

We recognize that the security, prosperity, and future hopes of our peoples rest on a benign security environment, the advancement of political and economic freedoms, and international cooperation.

The further development of U.S.-Russian relations and the strengthening of mutual understanding and trust will also rest on a growing network of ties between our societies and peoples. We will support growing economic interaction between the business communities of our two countries and people-to-people and cultural contacts and exchanges.

Political Cooperation

The United States and Russia are already acting as partners and friends in meeting the new challenges of the 21st century; affirming our Joint Statement of October 21, 2001, our countries are already allied in the global struggle against international terrorism.

The United States and Russia will continue to cooperate to support the Afghan people's efforts to transform Afghanistan into a stable, viable nation at peace with itself and its neighbors. Our cooperation, bilaterally and through the United Nations, the "Six-Plus-Two" diplomatic process, and in other multilateral fora, has proved important to our success so far in ridding Afghanistan of the Taliban and al-Qaida.

In Central Asia and the South Caucasus, we recognize our common interest in promoting the stability, sovereignty, and territorial in-

tegrity of all the nations of this region. The United States and Russia reject the failed model of "Great Power" rivalry that can only increase the potential for conflict in those regions. We will support economic and political development and respect for human rights while we broaden our humanitarian cooperation and cooperation on counterterrorism and counternarcotics.

The United States and Russia will cooperate to resolve regional conflicts, including those in Abkhazia and Nagorno-Karabakh, and the Transnistrian issue in Moldova. We strongly encourage the Presidents of Azerbaijan and Armenia to exhibit flexibility and a constructive approach to resolving the conflict concerning Nagorno-Karabakh. As two of the Co-Chairmen of the OSCE's Minsk Group, the United States and Russia stand ready to assist in these efforts.

On November 13, 2001, we pledged to work together to develop a new relationship between NATO and Russia that reflects the new strategic reality in the Euro-Atlantic region. We stressed that the members of NATO and Russia are increasingly allied against terrorism, regional instability, and other contemporary threats. We therefore welcome the inauguration at the May 28, 2002 NATO-Russia summit in Rome of a new NATO-Russia Council, whose members, acting in their national capacities and in a manner consistent with their respective collective commitments and obligations, will identify common approaches, take joint decisions, and bear equal responsibility, individually and jointly, for their implementation. In this context, they will observe in good faith their obligations under international law, including the UN Charter, provisions and principles contained in the Helsinki Final Act and the OSCE Charter for European Security. In the framework of the NATO-Russia Council, NATO member states and Russia will work as equal partners in areas of common inter-

est. They aim to stand together against common threats and risks to their security.

As co-sponsors of the Middle East peace process, the United States and Russia will continue to exert joint and parallel efforts, including in the framework of the "Quartet," to overcome the current crisis in the Middle East, to restart negotiations, and to encourage a negotiated settlement. In the Balkans, we will promote democracy, ethnic tolerance, self-sustaining peace, and long-term stability, based on respect for the sovereignty and territorial integrity of the states in the region and United Nations Security Council resolutions. The United States and Russia will continue their constructive dialogue on Iraq and welcome the continuation of special bilateral discussions that opened the way for UN Security Council adoption of the Goods Review List.

Recalling our Joint Statement of November 13, 2001 on counternarcotics cooperation, we note that illegal drug trafficking poses a threat to our peoples and to international security, and represents a substantial source of financial support for international terrorism. We are committed to intensifying cooperation against this threat, which will bolster both the security and health of the citizens of our countries.

The United States and Russia remain committed to intensifying cooperation in the fight against transnational organized crime. In this regard, we welcome the entry into force of the Treaty on Mutual Legal Assistance in Criminal Matters on January 31, 2002.

Economic Cooperation

The United States and Russia believe that successful national development in the 21st century demands respect for the discipline and practices of the free market. As we stated on November 13, 2001, an open market economy, the freedom of economic choice,

and an open democratic society are the most effective means to provide for the welfare of the citizens of our countries.

The United States and Russia will endeavor to make use of the potential of world trade to expand the economic ties between the two countries, and to further integrate Russia into the world economy as a leading participant, with full rights and responsibilities, consistent with the rule of law, in the world economic system. In this connection, the sides give high priority to Russia's accession to the World Trade Organization on standard terms.

Success in our bilateral economic and trade relations demands that we move beyond the limitations of the past. We stress the importance and desirability of graduating Russia from the emigration provisions of the U.S. Trade Act of 1974, also known as the Jackson-Vanik Amendment. We note that the Department of Commerce, based on its ongoing thorough and deliberative inquiry, expects to make its final decision no later than June 14, 2002 on whether Russia should be treated as a market economy under the provisions of U.S. trade law. The sides will take further practical steps to eliminate obstacles and barriers, including as appropriate in the legislative area, to strengthen economic cooperation.

We have established a new dynamic in our economic relations and between our business communities, aimed at advancing trade and investment opportunities while resolving disputes, where they occur, constructively and transparently.

The United States and Russia acknowledge the great potential for expanding bilateral trade and investment, which would bring significant benefits to both of our economies. Welcoming the recommendations of the Russian-American Business Dialogue, we are committed to working with the private sectors of our countries to realize the full potential of our economic interaction. We also

welcome the opportunity to intensify cooperation in energy exploration and development, especially in oil and gas, including in the Caspian region.

Strengthening People-to-People Contacts

The greatest strength of our societies is the creative energy of our citizens. We welcome the dramatic expansion of contacts between Americans and Russians in the past ten years in many areas, including joint efforts to resolve common problems in education, health, the sciences, and environment, as well as through tourism, sister-city relationships, and other people-to-people contacts. We pledge to continue supporting these efforts, which help broaden and deepen good relations between our two countries.

Battling the scourge of HIV/AIDS and other deadly diseases, ending family violence, protecting the environment, and defending the rights of women are areas where U.S. and Russian institutions, and especially non-governmental organizations, can successfully expand their cooperation.

Preventing the Spread of Weapons of Mass Destruction: Non-Proliferation and International Terrorism

The United States and Russia will intensify joint efforts to confront the new global challenges of the twenty-first century, including combating the closely linked threats of international terrorism and the proliferation of weapons of mass destruction and their means of delivery. We believe that international terrorism represents a particular danger to international stability as shown once more by the tragic events of September 11, 2001. It is imperative that all nations of the world cooperate to combat this threat decisively. Toward this end, the United States and Russia reaffirm our commitment to work together bilaterally and multilaterally.

The United States and Russia recognize the profound importance of preventing the spread of weapons of mass destruction and missiles. The specter that such weapons could fall into the hands of terrorists and those who support them illustrates the priority all nations must give to combating proliferation.

To that end, we will work closely together, including through cooperative programs, to ensure the security of weapons of mass destruction and missile technologies, information, expertise, and material. We will also continue cooperative threat reduction programs and expand efforts to reduce weapons-usable fissile material. In that regard, we will establish joint experts groups to investigate means of increasing the amount of weapons-usable fissile material to be eliminated, and to recommend collaborative research and development efforts on advanced, proliferation-resistant nuclear reactor and fuel cycle technologies. We also intend to intensify our cooperation concerning destruction of chemical weapons.

The United States and Russia will also seek broad international support for a strategy of proactive non-proliferation, including by implementing and bolstering the Treaty on the Non-Proliferation of Nuclear Weapons and the conventions on the prohibition of chemical and biological weapons. The United States and Russia call on all countries to strengthen and strictly enforce export controls, interdict illegal transfers, prosecute violators, and tighten border controls to prevent and protect against proliferation of weapons of mass destruction.

Missile Defense, Further Strategic Offensive Reductions, New Consultative Mechanism on Strategic Security

The United States and Russia proceed from the Joint Statements by the President of the United States of America and the President

of the Russian Federation on Strategic Issues of July 22, 2001 in Genoa and on a New Relationship Between the United States and Russia of November 13, 2001 in Washington.

The United States and Russia are taking steps to reflect, in the military field, the changed nature of the strategic relationship between them.

The United States and Russia acknowledge that today's security environment is fundamentally different than during the Cold War.

In this connection, the United States and Russia have agreed to implement a number of steps aimed at strengthening confidence and increasing transparency in the area of missile defense, including the exchange of information on missile defense programs and tests in this area, reciprocal visits to observe missile defense tests, and observation aimed at familiarization with missile defense systems. They also intend to take the steps necessary to bring a joint center for the exchange of data from early warning systems into operation.

The United States and Russia have also agreed to study possible areas for missile defense cooperation, including the expansion of joint exercises related to missile defense, and the exploration of potential programs for the joint research and development of missile defense technologies, bearing in mind the importance of the mutual protection of classified information and the safeguarding of intellectual property rights.

The United States and Russia will, within the framework of the NATO-Russia Council, explore opportunities for intensified practical cooperation on missile defense for Europe.

The United States and Russia declare their intention to carry out strategic offensive reductions to the lowest possible levels consistent with their national security requirements

and alliance obligations, and reflecting the new nature of their strategic relations.

A major step in this direction is the conclusion of the Treaty Between the United States of America and the Russian Federation on Strategic Offensive Reductions.

In this connection, both sides proceed on the basis that the Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Reduction and Limitation of Strategic Offensive Arms of July 31, 1991, remains in force in accordance with its terms and that its provisions will provide the foundation for providing confidence, transparency, and predictability in further strategic offensive reductions, along with other supplementary measures, including transparency measures, to be agreed.

The United States and Russia agree that a new strategic relationship between the two countries, based on the principles of mutual security, trust, openness, cooperation, and predictability requires substantive consultation across a broad range of international security issues. To that end we have decided to:

- establish a Consultative Group for Strategic Security to be chaired by Foreign Ministers and Defense Ministers with the participation of other senior officials. This group will be the principal mechanism through which the sides strengthen mutual confidence, expand transparency, share information and plans, and discuss strategic issues of mutual interest; and
- seek ways to expand and regularize contacts between our two countries' Defense Ministries and Foreign Ministries, and our intelligence agencies.

Source: US-Russian Joint Declaration on New Strategic Relations// U.S. Embassy in Moscow// http://moscow.usembassy.gov/bilateral/joint_statement.php?record_id=13.

2.16. George P. Shultz, William J. Perry, Henry A. Kissinger, Sam Nunn, a World Free of Nuclear Weapons

The Wall Street Journal
4 January, 2007

Nuclear weapons today present tremendous dangers, but also an historic opportunity. U.S. leadership will be required, to take the world to the next stage — to a solid consensus for reversing reliance on nuclear weapons globally as a vital contribution to preventing their proliferation into potentially dangerous hands, and ultimately ending them as a threat to the world.

Nuclear weapons were essential to maintaining international security during the Cold War because they were a means of deterrence. The end of the Cold War made the doctrine of mutual Soviet-American deterrence obsolete. Deterrence continues to be a relevant consideration for many states with regard to threats from other states. But reliance on nuclear weapons for this purpose is becoming increasingly hazardous and decreasingly effective.

North Korea's recent nuclear test and Iran's refusal to stop its program to enrich uranium -- potentially to weapons grade — highlight the fact that the world is now on the precipice of a new and dangerous nuclear era. Most alarmingly, the likelihood that non-state terrorists will get their hands on nuclear weaponry is increasing. In today's war waged on world order by terrorists, nuclear weapons are the ultimate means of mass devastation. And non-state terrorist groups with nuclear weapons are conceptually outside the bounds of a deterrent strategy and present difficult new security challenges.

Apart from the terrorist threat, unless urgent new actions are taken, the U.S. soon will be compelled to enter a new nuclear era that will be more precarious, psychologically disorienting, and economically even more costly than was Cold War deterrence. It is far from

certain that we can successfully replicate the old Soviet-American "mutually assured destruction" with an increasing number of potential nuclear enemies worldwide without dramatically increasing the risk that nuclear weapons will be used. New nuclear states do not have the benefit of years of step-by-step safeguards put in effect during the Cold War to prevent nuclear accidents, misjudgments or unauthorized launches. The United States and the Soviet Union learned from mistakes that were less than fatal. Both countries were diligent to ensure that no nuclear weapon was used during the Cold War by design or by accident. Will new nuclear nations and the world be as fortunate in the next 50 years as we were during the Cold War?

Leaders addressed this issue in earlier times. In his "Atoms for Peace" address to the United Nations in 1953, Dwight D. Eisenhower pledged America's "determination to help solve the fearful atomic dilemma — to devote its entire heart and mind to find the way by which the miraculous inventiveness of man shall not be dedicated to his death, but consecrated to his life." John F. Kennedy, seeking to break the logjam on nuclear disarmament, said, "The world was not meant to be a prison in which man awaits his execution."

Rajiv Gandhi, addressing the U.N. General Assembly on June 9, 1988, appealed, "Nuclear war will not mean the death of a hundred million people. Or even a thousand million. It will mean the extinction of four thousand million: the end of life as we know it on our planet earth. We come to the United Nations to seek your support. We seek your support to put a stop to this madness."

Ronald Reagan called for the abolishment of "all nuclear weapons," which he considered to be "totally irrational, totally inhumane, good for nothing but killing, possibly destructive of life on earth and civilization." Mikhail Gorbachev shared this vision, which

had also been expressed by previous American presidents.

Although Reagan and Mr. Gorbachev failed at Reykjavik to achieve the goal of an agreement to get rid of all nuclear weapons, they did succeed in turning the arms race on its head. They initiated steps leading to significant reductions in deployed long- and intermediate-range nuclear forces, including the elimination of an entire class of threatening missiles.

What will it take to rekindle the vision shared by Reagan and Mr. Gorbachev? Can a worldwide consensus be forged that defines a series of practical steps leading to major reductions in the nuclear danger? There is an urgent need to address the challenge posed by these two questions.

The Non-Proliferation Treaty (NPT) envisioned the end of all nuclear weapons. It provides (a) that states that did not possess nuclear weapons as of 1967 agree not to obtain them, and (b) that states that do possess them agree to divest themselves of these weapons over time. Every president of both parties since Richard Nixon has reaffirmed these treaty obligations, but non-nuclear weapon states have grown increasingly skeptical of the sincerity of the nuclear powers.

Strong non-proliferation efforts are under way. The Cooperative Threat Reduction program, the Global Threat Reduction Initiative, the Proliferation Security Initiative and the Additional Protocols are innovative approaches that provide powerful new tools for deflecting activities that violate the NPT and endanger world security. They deserve full implementation. The negotiations on proliferation of nuclear weapons by North Korea and Iran, involving all the permanent members of the Security Council plus Germany and Japan, are crucially important. They must be energetically pursued.

But by themselves, none of these steps are

adequate to the danger. Reagan and General Secretary Gorbachev aspired to accomplish more at their meeting in Reykjavik 20 years ago — the elimination of nuclear weapons altogether. Their vision shocked experts in the doctrine of nuclear deterrence, but galvanized the hopes of people around the world. The leaders of the two countries with the largest arsenals of nuclear weapons discussed the abolition of their most powerful weapons.

What should be done? Can the promise of the NPT and the possibilities envisioned at Reykjavik be brought to fruition? We believe that a major effort should be launched by the United States to produce a positive answer through concrete stages.

First and foremost is intensive work with leaders of the countries in possession of nuclear weapons to turn the goal of a world without nuclear weapons into a joint enterprise. Such a joint enterprise, by involving changes in the disposition of the states possessing nuclear weapons, would lend additional weight to efforts already under way to avoid the emergence of a nuclear-armed North Korea and Iran.

The program on which agreements should be sought would constitute a series of agreed and urgent steps that would lay the groundwork for a world free of the nuclear threat. Steps would include:

- Changing the Cold War posture of deployed nuclear weapons to increase warning time and hereby reduce the danger of an accidental or unauthorized use of a nuclear weapon.
- Continuing to reduce substantially the size of nuclear forces in all states that possess them,
- Eliminating short-range nuclear weapons designed to be forward-deployed.
- Initiating a bipartisan process with the

Senate, including understandings to increase confidence and provide for periodic review, to achieve ratification of the Comprehensive Test Ban Treaty, taking advantage of recent technical advances, and working to secure ratification by other key states.

- Providing the highest possible standards of security for all stocks of weapons, weapons-usable plutonium, and highly enriched uranium everywhere in the world.
- Getting control of the uranium enrichment process, combined with the guarantee that uranium for nuclear power reactors could be obtained at a reasonable price, first from the Nuclear Suppliers Group and then from the International Atomic Energy Agency (IAEA) or other control led international reserves. It will also be necessary to deal with proliferation issues presented by spent fuel from reactors producing electricity.
- Halting the production of fissile material for weapons globally; phasing out the use of highly enriched uranium in civil commerce and removing weapons-usable uranium from research facilities around the world and rendering the materials safe.
- Redoubling our efforts to resolve regional confrontations and conflicts that give rise to new nuclear powers.

Achieving the goal of a world free of nuclear weapons will also require effective measures to impede or counter any nuclear-related conduct that is potentially threatening to the security of any state or peoples.

Reassertion of the vision of a world free of nuclear weapons and practical measures toward achieving that goal would be, and would be perceived as, a bold initiative consistent with America's moral heritage. The

effort could have a profoundly positive impact on the security of future generations. Without the bold vision, the actions will not be perceived as fair or urgent. Without the actions, the vision will not be perceived as realistic or possible.

We endorse setting the goal of a world free of nuclear weapons and working energetically on the actions required to achieve that goal, beginning with the measures outlined above.

Mr. Shultz, a distinguished fellow at the Hoover Institution at Stanford, was secretary of state from 1982 to 1989. Mr. Perry was secretary of defense from 1994 to 1997, Mr. Kissinger, chairman of Kissinger Associates, was secretary of state from 1973 to 1977. Mr. Nunn is the former chairman of the Senate

Armed Services Committee.

A conference organized by Mr. Shultz and Sidney D. Drell was held at Hoover to reconsider the vision that Reagan and Mr. Gorbachev brought to Reykjavik. In addition to Messrs. Shultz and Drell, the following participants also endorse the view in this statement: Martin Anderson, Steve Andreasen, Michael Arnmcost, William Crowe, James Goodhy, Thomas Graham Jr., Thomas Henriksen, David Holloway, Max Kampebnan, Jack Matlock, John McLaughlin, Don Oberdorfer, Rozanne Ridgway, Henry Rowen, Roald Sagdeev and Abraham Sofaer.

Source: George P. Shultz, William J. Perry, Henry A. Kissinger, Sam Nunn, A World Free of Nuclear Weapons // The Wall Street Journal. January 4, 2007.

2.17. Weapons of Mass Destruction Commission's Recommendations

*June 2006
Stockholm*

Nuclear Weapons

Preventing the Proliferation of Nuclear Weapons

1. All parties to the Non-Proliferation Treaty need to revert to the fundamental and balanced non-proliferation and disarmament commitments that were made under the treaty and confirmed in 1995 when the treaty was extended indefinitely.
2. All parties to the Non-Proliferation Treaty should implement the decision on principles and objectives for non-proliferation and disarmament, the decision on strengthening the Non-Proliferation Treaty review process, and the resolution on the Middle East as a zone free of nuclear and all other weapons of mass destruction, all adopted in 1995. They should also promote the implementation of 'the thirteen practical steps' for nuclear disarmament that were adopted in 2000.
3. To enhance the effectiveness of the nuclear non-proliferation regime, all Non-Proliferation Treaty non-nuclear-weapon states parties should accept comprehensive safeguards as strengthened by the International Atomic Energy Agency Additional Protocol.
4. The states parties to the Non-Proliferation Treaty should establish a standing secretariat to handle administrative matters for the parties to the treaty. This secretariat should organize the treaty's Review Conferences and their Preparatory Committee sessions. It should also organize other treaty-related meetings upon the request of a majority of the states parties.

5. Negotiations with North Korea should aim at a verifiable agreement including, as a principal element, North Korea's manifesting its adherence to the Non-Proliferation Treaty and accepting the 1997 Additional Protocol, as well as revival and legal confirmation of the commitments made in the 1992 Joint Declaration on the Denuclearization of the Korean Peninsula: notably, that neither North nor South Korea shall have nuclear weapons or nuclear reprocessing and uranium enrichment facilities. Fuel-cycle services should be assured through international arrangements. The agreement should also cover biological and chemical weapons, as well as the Comprehensive Nuclear-Test-Ban Treaty, thus making the Korean peninsula a zone free of weapons of mass destruction.
6. Negotiations must be continued to induce Iran to suspend any sensitive fuel-cycle-related activities and ratify the 1997 Additional Protocol and resume full cooperation with the International Atomic Energy Agency in order to avoid an increase in tensions and to improve the outlook for the common aim of establishing a Middle East zone free of weapons of mass destruction. The international community and Iran should build mutual confidence through measures that should include: reliable assurance regarding the supply of fuel-cycle services; suspending or renouncing sensitive fuel-cycle activities for a prolonged period of time by all states in the Middle East; assurances against attacks and subversion aiming at regime change; and facilitation of international trade and investment.
7. The nuclear-weapon states parties to the Non-Proliferation Treaty should provide legally binding negative security assurances to non-nuclear weapon states parties. The states not party to the Non-Proliferation Treaty that possess nuclear weapons should separately provide such assurances.
8. States should make active use of the IAEA as a forum for exploring various ways to reduce proliferation risks connected with the nuclear fuel cycle, such as proposals for an international fuel bank; internationally safeguarded regional centers offering fuel-cycle services, including spent-fuel repositories; and the creation of a fuel-cycle system built on the concept that a few 'fuel-cycle states' will lease nuclear fuel to states that forgo enrichment and reprocessing activities.
9. States should develop means of using low-enriched uranium in ships and research reactors that presently require highly enriched uranium. The production of highly enriched uranium should be phased out. States that separate plutonium by reprocessing spent nuclear fuel should explore possibilities for reducing that activity.
10. All states should support the international initiatives taken to advance the global clean-out of fissile material. Such support should encompass the conversion of research reactors from highly enriched to low enriched uranium fuel, storing fissile material at centralized and secure locations, and returning exported nuclear materials to suppliers for secure disposal or elimination.
11. All Non-Proliferation Treaty nuclear-weapon states that have not yet done so should ratify the protocols of the treaties creating regional nuclear-weapon-free zones. All states in such zones should conclude their comprehensive safeguards agreements with the IAEA and agree to ratify and implement the Additional Protocol.
12. All states should support continued efforts to establish a zone free of weapons

of mass destruction in the Middle East as a part of the overall peace process. Steps can be taken even now. As a confidence building measure, all states in the region, including Iran and Israel, should for a prolonged period of time commit themselves to a verified arrangement not to have any enrichment, reprocessing or other sensitive fuel-cycle activities on their territories. Such a commitment should be coupled with reliable assurances about fuel-cycle services required for peaceful nuclear activities. Egypt, Iran and Israel should join the other states in the Middle East in ratifying the CTBT.

13. India and Pakistan should both ratify the CTBT and join those other states with nuclear weapons that have declared a moratorium on the production of fissile material for weapons, pending the conclusion of a treaty. They should continue to seek bilateral detente and build confidence through political, economic and military measures, reducing the risk of armed conflict, and increasing transparency in the nuclear and missile activities of both countries. Eventually, both states should become members of the Nuclear Suppliers Group and the Missile Technology Control Regime, as well as parties to International Atomic Energy Agency safeguards agreements under the terms of the 1997 Additional Protocol.

Preventing Nuclear Terrorism

14. States must prevent terrorists from gaining access to nuclear weapons or fissile material. To achieve this, they must maintain fully effective accounting and control of all stocks of fissile and radioactive material and other radiological sources on their territories. They should ensure that there is personal legal responsibility for any acts of nuclear terrorism or activities in support of such terrorism. They must

expand their cooperation through inter alia the sharing of information, including intelligence on illicit nuclear commerce. They should also promote universal adherence to the International Convention for the Suppression of Acts of Nuclear Terrorism and to the Convention on the Physical Protection of Nuclear Material and implementation of UN Security Council Resolution 1540.

Reducing the Threat and the Numbers of Existing Nuclear Weapons

15. All states possessing nuclear weapons should declare a categorical policy of no-first-use of such weapons. They should specify that this covers both pre-emptive and preventive action, as well as retaliation for attacks involving chemical, biological or conventional weapons.
16. All states possessing nuclear weapons should review their military plans and define what is needed to maintain credible non-nuclear security policies. States deploying their nuclear forces in triads, consisting of submarine-launched missiles, ground-based intercontinental ballistic missiles and long-range bombers, should abandon this practice in order to reduce nuclear-weapon redundancy and avoid fuelling nuclear arms races.
17. Russia and the United States should agree on reciprocal steps to take their nuclear weapons off hair-trigger alert and should create a joint commission to facilitate this goal. They should undertake to eliminate the launch-on-warning option from their nuclear war plans, while implementing a controlled parallel decrease in operational readiness of a large part of their strategic forces, through:
 - reducing the number of strategic submarines at sea and lowering their technical readiness to launch while in port;

- storing nuclear bombs and air-launched cruise missiles separately from relevant air fields;
 - storing separately nose cones and/or warheads of most intercontinental ballistic missiles or taking other technical measures to reduce their readiness.
18. Russia and the United States should commence negotiations on a new strategic arms reduction treaty aimed at reducing their deployments of strategic forces allowed under the Strategic Offensive Reductions Treaty by at least half. It should include a legally binding commitment to irreversibly dismantle the weapons withdrawn under the Strategic Offensive Reductions Treaty. The new treaty should also include transparent counting rules, schedules and procedures for dismantling the weapons, and reciprocal measures for verification.
 19. Russia and the United States, followed by other states possessing nuclear weapons, should publish their aggregate holdings of nuclear weapons on active and reserve status as a baseline for future disarmament efforts. They should also agree to include specific provisions in future disarmament agreements relating to transparency, irreversibility, verification and the physical destruction of nuclear warheads.
 20. All states possessing nuclear weapons must address the issue of their continued possession of such weapons. All nuclear-weapon states parties to the Non-Proliferation Treaty must take steps towards nuclear disarmament, as required by the treaty and the commitments made in connection with the treaty's indefinite extension. Russia and the United States should take the lead. Other states possessing nuclear weapons should join the process, individually or in coordinated action.
- While Israel, India and Pakistan are not parties to the Non-Proliferation Treaty, they, too, have a duty to contribute to the nuclear disarmament process.
21. Russia and the United States should proceed to implement the commitments they made in 1991 to eliminate specific types of non-strategic nuclear weapons, such as demolition munitions, artillery shells and warheads for short-range ballistic missiles. They should agree to withdraw all non-strategic nuclear weapons to central storage on national territory, pending their eventual elimination. The two countries should reinforce their 1991 unilateral reduction commitments by developing arrangements to ensure verification, transparency and irreversibility.
 22. Every state that possesses nuclear weapons should make a commitment not to deploy any nuclear weapon, of any type, on foreign soil.
 23. Any state contemplating replacement or modernization of its nuclear weapon systems must consider such action in the light of all relevant treaty obligations and its duty to contribute to the nuclear disarmament process. As a minimum, it must refrain from developing nuclear weapons with new military capabilities or for new missions. It must not adopt systems or doctrines that blur the distinction between nuclear and conventional weapons or lower the nuclear threshold.
 24. All states possessing nuclear weapons, notably Russia and the United States, should place their excess fissile material from military programmes under International Atomic Energy Agency safeguards. To facilitate the reduction of stocks of highly enriched uranium, states possessing such stocks should sell uranium blended to enrichment levels suitable for reactor fuel to other Non-Prolifera-

tion Treaty states or use it for their own peaceful nuclear energy needs.

25. All states possessing nuclear weapons should adopt strict standards for the handling of weapons-usable fissile material deemed excess to military requirements or recovered from disarmament activities, as exemplified in the US stored-weapon and spent-fuel standards.
26. The Conference on Disarmament should immediately open the delayed negotiations for a treaty on the cut-off of production of fissile material for weapons without preconditions. Before, or at least during, these negotiations, the Conference on Disarmament should establish a Group of Scientific Experts to examine technical aspects of the treaty.
27. To facilitate fissile material cut-off negotiations in the Conference on Disarmament, the five Non-Proliferation Treaty nuclear-weapon states, joined by the other states possessing nuclear weapons, should agree among themselves to cease production of fissile material for weapon purposes. They should open up their facilities for such production to International Atomic Energy Agency safeguards inspections, building on the practice of Euratom inspections in France and the UK. These eight states should also address the issue of verifiable limitations of existing stocks of weapons-usable nuclear materials.
28. All states that have not already done so should sign and ratify the Comprehensive Nuclear-Test-Ban Treaty unconditionally and without delay. The United States, which has not ratified the treaty, should reconsider its position and proceed to ratify the treaty, recognizing that its ratification would trigger other required ratifications and be a step towards the treaty's entry into force. Pending

entry into force, all states with nuclear weapons should continue to refrain from nuclear testing. Also, the 2007 conference of Comprehensive Nuclear-Test-Ban Treaty signatories should address the possibility of a provisional entry into force of the treaty.

29. All signatories should provide financial, political and technical support for the continued development and operation of the verification regime, including the International Monitoring System, the International Data Centre and the secretariat, so that the CTBTO is ready to monitor and verify compliance with the treaty when it enters into force. They should pledge to maintain their respective stations and continue to transmit data on a national basis under all circumstances.

From Regulating Nuclear Weapons to Outlawing Them

30. All states possessing nuclear weapons should commence planning for security without nuclear weapons. They should start preparing for the outlawing of nuclear weapons through joint practical and incremental measures that include definitions, benchmarks and transparency requirements for nuclear disarmament.

Biological and Toxin Weapons

31. All states not yet party to the Biological and Toxin Weapons Convention should adhere to the Convention. The states parties to the Convention should launch a campaign to achieve universal adherence by the time of the Seventh Review Conference, to be held in 2011.
32. To achieve universal adoption of national legislation and regulations to implement the Biological and Toxin Weapons Convention completely and effectively, the states parties should offer technical as-

sistance and promote best-practice models of such legislation. As a part of the confidence-building process and to promote transparency and harmonization, all states parties should make annual biological weapon-related national declarations and make them public.

33. States parties to the Biological and Toxin Weapons Convention should enhance the investigatory powers of the UN Secretary-General, ensuring that the Secretary-General's office can rely upon a regularly updated roster of experts and advice from the World Health Organization and a specialist unit, modelled on the United Nations Monitoring, Verification and Inspection Commission, to assist in investigating unusual outbreaks of disease and allegations of the use of biological weapons.
34. States parties to the Biological and Toxin Weapons Convention should establish a standing secretariat to handle organizational and administrative matters related to the treaty, such as Review Conferences and expert meetings.
35. Governments should pursue public health surveillance to ensure effective monitoring of unusual outbreaks of disease and develop practical methods of coordinating international responses to any major event that might involve bio-weapons. They should strengthen cooperation between civilian health and security-oriented authorities, nationally, regionally and worldwide, including in the framework of the new International Health Regulations of the World Health Organization. Governments should also review their national biosafety and biosecurity measures to protect health and the environment from the release of biological and toxin materials. They should harmonize national biosecurity standards.
36. At the Sixth Review Conference, in 2006, the states parties to the Biological and Toxin Weapons Convention should reaffirm common understandings reached at previous review conferences and take action on all subjects addressed at Convention meetings since 2003. They should also establish a work programme on additional topics for future meetings. States parties should ensure more frequent reassessment of the implications of scientific and technological developments and reaffirm that all undertakings under Article I of the Biological and Toxin Weapons Convention apply to such developments. This Review Conference should reaffirm that all developments in the life sciences fall within the scope of the Convention and that all developments in the life sciences for hostile purposes are prohibited by the Convention.
37. States parties to the Chemical Weapons Convention must provide adequate resources to ensure that there are no undue delays in the agreed destruction of chemical weapon stockpiles.
38. The Organization for the Prohibition of Chemical Weapons and states parties to the Chemical Weapons Convention should continue their efforts to secure universal adherence to the Convention. States parties should fully implement the rules on trade and transfer of chemicals that are precursors to chemical-weapon agents. They should further develop regulations regarding the trade and transfer of chemicals that can be used to produce chemical weapons. The Organization for the Prohibition of Chemical Weapons and states parties should continue to offer states positive incentives, including technical assistance, to join and implement the Chemical Weapons Convention. When providing such assistance or transferring relevant tech-

nologies, they should consider steps to ensure safe and responsible handling by the recipient.

39. States parties to the Chemical Weapons Convention should confirm that, like the use of riot control agents, the use of toxic chemical agents for purposes of law enforcement is banned as a method of warfare. Accordingly, each state party must declare any such agent under Article III.
40. States parties should ensure that the Organization for the Prohibition of Chemical Weapons has the resources, experience and legal rights needed to carry out challenge inspections in a timely and effective manner, including for the taking of samples and removal of samples for testing.
41. Through their domestic laws and policies, all states should prohibit the production, possession and use of toxic chemicals and technologies for purposes that are banned by the Chemical Weapons Convention. States should ensure security in and for chemical facilities through legislation and agreement with industry. States should also develop national means to monitor that security standards are met.
42. States parties to the Chemical Weapons Convention should use the Organization for the Prohibition of Chemical Weapons as a coordinating centre in the development of global standards for a chemical industry security culture. The Organization should offer evaluation and security assistance at declared sites. States parties should also strengthen the capacity of the Organization for the Prohibition of Chemical Weapons to provide practical assistance against chemical weapons, for instance detection equipment, alarm systems and medical antidotes.

WMD Delivery Means, Missile Defences, and Weapons in Space

43. MTCR member states should make new efforts to better implement and expand export controls on relevant materials and technology. States subscribing to the Hague Code of Conduct should extend its scope to include cruise missiles and unmanned aerial vehicles. They should establish a multilateral data exchange centre, based on the Russian-US initiatives for the exchange of data on missile launches from early-warning systems. Regional and international nonproliferation measures should include information exchanges, launch notification, and restrictions or bans on specific items or capabilities.
44. States should not consider the deployment or further deployment of any kind of missile defence system without first attempting to negotiate the removal of missile threats. If such negotiations fail, deployments of such systems should be accompanied by cooperative development programmes and confidence-building measures to lower the risk of adverse effects on international peace and security, including the risk of creating or aggravating arms races.
45. All states should renounce the deployment of weapons in outer space. They should promote universal adherence to the Outer Space Treaty and expand its scope through a protocol to prohibit all weapons in space. Pending the conclusion of such a protocol, they should refrain from activities inconsistent with its aims, including any tests against space objects or targets on earth from a space platform. States should adapt the international regimes and institutions for space issues so that both military and civilian aspects can be dealt with in the same context. States should also set up a group of

experts to develop options for monitoring and verifying various components of a space security regime and a code of conduct, designed inter alia to prohibit the testing or deployment of space weapons.

46. A Review Conference of the Outer Space Treaty to mark its 40th year in force should be held in 2007. It should address the need to strengthen the treaty and extend its scope. A Special Coordinator should be appointed to facilitate ratifications and liaise with nonparties about the reinforcement of the treaty-based space security regime.

Export Controls, International Assistance, and Non-Governmental Actors

47. All states should conduct audits of their export control enforcement agencies (customs, police, coastguard, border control and military) to ensure that they can carry out their tasks effectively. States should seek to establish a universal system of export controls providing harmonized standards, enhanced transparency, and practical support for implementation. Members of the five export control regimes should promote a widening of their membership and improve implementation in view of current security challenges, without impeding legitimate trade and economic development.
48. The G8 Global Partnership should expand the geographical and functional scope of its non-proliferation assistance. The G8 should guarantee full funding for the Elimination of Weapons-Grade Plutonium Production (EWGPP) programme. Potential donors should consider how technical assistance, training, equipment and financing could be brought to bear to help states of all regions implement UN Security Council Resolution 1540.
49. Companies engaged in activities relevant

to weapons of mass destruction have the ability and responsibility to help prevent the proliferation of such weapons and an interest in demonstrating that they are fulfilling that responsibility, including full compliance with national and international obligations and public transparency. Trade associations should promote such objectives.

50. States, international organizations and professional associations should encourage the appropriate academic and industrial associations to adopt and effectively implement codes of practice and codes of conduct for science and research in weapons of mass destruction relevant fields.
51. Governments possessing any weapons of mass destruction should keep their parliaments fully and currently informed of their holdings of such weapons and their activities to reduce and eliminate them. Parliaments should actively seek such information and recognize their responsibility in formulating policies relevant to weapons of mass destruction issues. Greater inter-parliamentary cooperation on weapons of mass destruction issues is needed.
52. States should assist Non-Governmental Organizations to actively participate in international meetings and conferences, and to inform and campaign in the weapons of mass destruction field. Private foundations should substantially increase their support for such organizations that are working to eliminate global weapons of mass destruction threats.
53. Organizations with security-relevant agendas should re-examine the 2002 United Nations Study on Disarmament and Non-Proliferation Education, and should consider ways in which they could foster and support such education and an

informed public debate. Governments should fund student internships at multilateral institutions working on weapons of mass destruction issues.

Compliance, Verification, Enforcement and the Role of the United Nations

54. As the strengthened safeguards system adopted by the International Atomic Energy Agency through the Additional Protocol should become standard for parties to the Non-Proliferation Treaty, supplier states should make acceptance of this standard by recipient parties a condition for contracts involving nuclear items.
55. Governments should instruct their intelligence authorities to assist international inspection agencies by providing relevant information without compromising the independence of the inspection systems.
56. The UN Security Council should establish a small subsidiary unit that could provide professional technical information and advice on matters relating to weapons of mass destruction. At the request of the Council or the Secretary-General, it should organize ad hoc inspections and monitoring in the field, using a roster of well-trained inspectors that should be kept up-to-date.
 - require individual states to accept effective and comprehensive monitoring, inspection and verification;
 - require member states to enact legislation to secure global implementation of specific rules or measures; and
 - decide, as instance of last resort, on the use of economic or military enforcement measures.
57. International legal obligations regarding weapons of mass destruction must be enforced. International enforcement action should be taken only after credible investigation and authoritative finding of noncompliance with legal obligations.
58. In order for the Conference on Disarmament to function, it should be able to adopt its Programme of Work by a qualified majority of two thirds of the members present and voting. It should also take its other administrative and procedural decisions with the same requirements.
59. The United Nations General Assembly should convene a World Summit on disarmament, non-proliferation and terrorist use of weapons of mass destruction, to meet after thorough preparations. This World Summit should also discuss and decide on reforms to improve the efficiency and effectiveness of the UN disarmament machinery.
60. The United Nations Security Council should make greater use of its potential to reduce and eliminate threats of weapons of mass destruction — whether they are linked to existing arsenals, proliferation or terrorists. It should take up for consideration any withdrawal from or breach of an obligation not to acquire weapons of mass destruction. Making use of its authority under the Charter to take decisions with binding effect for all members, the Council may, inter alia:
 - require individual states to accept effective and comprehensive monitoring, inspection and verification;
 - require member states to enact legislation to secure global implementation of specific rules or measures; and
 - decide, as instance of last resort, on the use of economic or military enforcement measures.

Before UN reform has made the Security Council more representative of the UN membership, it is especially important that binding decisions should be preceded by effective consultation to ensure that they are supported by the membership of the UN and will be accepted and respected.

Source: Weapons of Terror. Freeing the World of Nuclear, Biological and Chemical Arms. Weapons of Mass Destruction Commission's Recommendations (Weapons of Mass Destruction Commission: Stockholm, 2006), pp. 188-205.

2.18. President of Russia V. Putin's Speech and the Following Discussion at the Munich Conference on Security Policy

*February 10, 2007
Munich*

VLADIMIR PUTIN: Thank you very much dear Madam Federal Chancellor, Mr. Teltschik, ladies and gentlemen!

I am truly grateful to be invited to such a representative conference that has assembled politicians, military officials, entrepreneurs and experts from more than 40 nations.

This conference's structure allows me to avoid excessive politeness and the need to speak in roundabout, pleasant but empty diplomatic terms. This conference's format will allow me to say what I really think about international security problems. And if my comments seem unduly polemical, pointed or inexact to our colleagues, then I would ask you not to get angry with me. After all, this is only a conference. And I hope that after the first two or three minutes of my speech Mr. Teltschik will not turn on the red light over there.

Therefore, it is well known that international security comprises much more than issues relat-

ing to military and political stability. It involves the stability of the global economy, overcoming poverty, economic security and developing a dialogue between civilizations.

This universal, indivisible character of security is expressed as the basic principle that "security for one is security for all". As Franklin D. Roosevelt said during the first few days that the Second World War was breaking out: "When peace has been broken anywhere, the peace of all countries everywhere is in danger."

These words remain topical today. Incidentally, the theme of our conference — global crises, global responsibility — exemplifies this.

Only two decades ago the world was ideologically and economically divided and it was the huge strategic potential of two superpowers that ensured global security.

This global stand-off pushed the sharpest eco-

conomic and social problems to the margins of the international community's and the world's agenda. And, just like any war, the Cold War left us with live ammunition, figuratively speaking. I am referring to ideological stereotypes, double standards and other typical aspects of Cold War bloc thinking.

The unipolar world that had been proposed after the Cold War did not take place either.

The history of humanity certainly has gone through unipolar periods and seen aspirations to world supremacy. And what hasn't happened in world history?

However, what is a unipolar world? However one might embellish this term, at the end of the day it refers to one type of situation, namely one centre of authority, one centre of force, one centre of decision-making.

It is world in which there is one master, one sovereign. And at the end of the day this is pernicious not only for all those within this system, but also for the sovereign itself because it destroys itself from within.

And this certainly has nothing in common with democracy. Because, as you know, democracy is the power of the majority in light of the interests and opinions of the minority.

Incidentally, Russia — we — are constantly being taught about democracy. But for some reason those who teach us do not want to learn themselves.

I consider that the unipolar model is not only unacceptable but also impossible in today's world. And this is not only because if there was individual leadership in today's — and precisely in today's — world, then the military, political and economic resources would not suffice. What is even more important is that the model itself is flawed because at its basis there is and can be no moral foundations for modern civilization.

Along with this, what is happening in today's world — and we just started to discuss this — is

a tentative to introduce precisely this concept into international affairs, the concept of a unipolar world.

And with which results?

Unilateral and frequently illegitimate actions have not resolved any problems. Moreover, they have caused new human tragedies and created new centers of tension. Judge for yourselves: wars as well as local and regional conflicts have not diminished. Mr. Teltschik mentioned this very gently. And no less people perish in these conflicts — even more are dying than before. Significantly more, significantly more!

Today we are witnessing an almost uncontained hyper use of force — military force — in international relations, force that is plunging the world into an abyss of permanent conflicts. As a result we do not have sufficient strength to find a comprehensive solution to any one of these conflicts. Finding a political settlement also becomes impossible.

We are seeing a greater and greater disdain for the basic principles of international law. And independent legal norms are, as a matter of fact, coming increasingly closer to one state's legal system. One state and, of course, first and foremost the United States, has overstepped its national borders in every way. This is visible in the economic, political, cultural and educational policies it imposes on other nations. Well, who likes this? Who is happy about this?

In international relations we increasingly see the desire to resolve a given question according to so-called issues of political expediency, based on the current political climate.

And of course this is extremely dangerous. It results in the fact that no one feels safe. I want to emphasize this — no one feels safe! Because no one can feel that international law is like a stone wall that will protect them. Of course such a policy stimulates an arms race.

The force's dominance inevitably encourages a number of countries to acquire weapons of

mass destruction. Moreover, significantly new threats — though they were also well-known before — have appeared, and today threats such as terrorism have taken on a global character.

I am convinced that we have reached that decisive moment when we must seriously think about the architecture of global security.

And we must proceed by searching for a reasonable balance between the interests of all participants in the international dialogue. Especially since the international landscape is so varied and changes so quickly — changes in light of the dynamic development in a whole number of countries and regions.

Madam Federal Chancellor already mentioned this. The combined GDP measured in purchasing power parity of countries such as India and China is already greater than that of the United States. And a similar calculation with the GDP of the BRIC countries — Brazil, Russia, India and China — surpasses the cumulative GDP of the EU. And according to experts this gap will only increase in the future.

There is no reason to doubt that the economic potential of the new centers of global economic growth will inevitably be converted into political influence and will strengthen multipolarity.

In connection with this the role of multilateral diplomacy is significantly increasing. The need for principles such as openness, transparency and predictability in politics is uncontested and the use of force should be a really exceptional measure, comparable to using the death penalty in the judicial systems of certain states.

However, today we are witnessing the opposite tendency, namely a situation in which countries that forbid the death penalty even for murderers and other, dangerous criminals are airily participating in military operations that are difficult to consider legitimate. And as a matter of fact, these conflicts are killing people — hundreds and thousands of civilians!

But at the same time the question arises of

whether we should be indifferent and aloof to various internal conflicts inside countries, to authoritarian regimes, to tyrants, and to the proliferation of weapons of mass destruction? As a matter of fact, this was also at the centre of the question that our dear colleague Mr. Lieberman asked the Federal Chancellor. If I correctly understood your question (addressing Mr. Lieberman), then of course it is a serious one! Can we be indifferent observers in view of what is happening? I will try to answer your question as well: of course not.

But do we have the means to counter these threats? Certainly we do. It is sufficient to look at recent history. Did not our country have a peaceful transition to democracy? Indeed, we witnessed a peaceful transformation of the Soviet regime — a peaceful transformation! And what a regime! With what a number of weapons, including nuclear weapons! Why should we start bombing and shooting now at every available opportunity? Is it the case when without the threat of mutual destruction we do not have enough political culture, respect for democratic values and for the law?

I am convinced that the only mechanism that can make decisions about using military force as a last resort is the Charter of the United Nations. And in connection with this, either I did not understand what our colleague, the Italian Defense Minister, just said or what he said was inexact. In any case, I understood that the use of force can only be legitimate when the decision is taken by NATO, the EU, or the UN. If he really does think so, then we have different points of view. Or I didn't hear correctly. The use of force can only be considered legitimate if the decision is sanctioned by the UN. And we do not need to substitute NATO or the EU for the UN. When the UN will truly unite the forces of the international community and can really react to events in various countries, when we will leave behind this disdain for international law, then the situation will be able to change. Otherwise the situation will simply result in a dead end, and the

number of serious mistakes will be multiplied. Along with this, it is necessary to make sure that international law has a universal character both in the conception and application of its norms.

And one must not forget that democratic political actions necessarily go along with discussion and a laborious decision-making process.

Dear ladies and gentlemen!

The potential danger of the destabilization of international relations is connected with obvious stagnation in the disarmament issue.

Russia supports the renewal of dialogue on this important question.

It is important to conserve the international legal framework relating to weapons destruction and therefore ensure continuity in the process of reducing nuclear weapons.

Together with the United States of America we agreed to reduce our nuclear strategic missile capabilities to up to 1700-2000 nuclear warheads by 31 December 2012. Russia intends to strictly fulfill the obligations it has taken on. We hope that our partners will also act in a transparent way and will refrain from laying aside a couple of hundred superfluous nuclear warheads for a rainy day. And if today the new American Defense Minister declares that the United States will not hide these superfluous weapons in warehouse or, as one might say, under a pillow or under the blanket, then I suggest that we all rise and greet this declaration standing. It would be a very important declaration.

Russia strictly adheres to and intends to further adhere to the Treaty on the Non-Proliferation of Nuclear Weapons as well as the multilateral supervision regime for missile technologies. The principles incorporated in these documents are universal ones.

In connection with this I would like to recall that in the 1980s the USSR and the United States signed an agreement on destroying a whole range of small- and medium-range missiles but

these documents do not have a universal character.

Today many other countries have these missiles, including the Democratic People's Republic of Korea, the Republic of Korea, India, Iran, Pakistan and Israel. Many countries are working on these systems and plan to incorporate them as part of their weapons arsenals. And only the United States and Russia bear the responsibility to not create such weapons systems.

It is obvious that in these conditions we must think about ensuring our own security.

At the same time, it is impossible to sanction the appearance of new, destabilizing high-tech weapons. Needless to say it refers to measures to prevent a new area of confrontation, especially in outer space. Star wars is no longer a fantasy — it is a reality. In the middle of the 1980s our American partners were already able to intercept their own satellite.

In Russia's opinion, the militarization of outer space could have unpredictable consequences for the international community, and provoke nothing less than the beginning of a nuclear era. And we have come forward more than once with initiatives designed to prevent the use of weapons in outer space.

Today I would like to tell you that we have prepared a project for an agreement on the prevention of deploying weapons in outer space. And in the near future it will be sent to our partners as an official proposal. Let's work on this together.

Plans to expand certain elements of the anti-missile defense system to Europe cannot help but disturb us. Who needs the next step of what would be, in this case, an inevitable arms race? I deeply doubt that Europeans themselves do.

Missile weapons with a range of about five to eight thousand kilometers that really pose a threat to Europe do not exist in any of the so-called problem countries. And in the near future and prospects, this will not happen and is not even foreseeable. And any hypothetical launch

of, for example, a North Korean rocket to American territory through western Europe obviously contradicts the laws of ballistics. As we say in Russia, it would be like using the right hand to reach the left ear.

And here in Germany I cannot help but mention the pitiable condition of the Treaty on Conventional Armed Forces in Europe. The Adapted Treaty on Conventional Armed Forces in Europe was signed in 1999. It took into account a new geopolitical reality, namely the elimination of the Warsaw bloc. Seven years have passed and only four states have ratified this document, including the Russian Federation.

NATO countries openly declared that they will not ratify this treaty, including the provisions on flank restrictions (on deploying a certain number of armed forces in the flank zones), until Russia removed its military bases from Georgia and Moldova. Our army is leaving Georgia, even according to an accelerated schedule. We resolved the problems we had with our Georgian colleagues, as everybody knows. There are still 1,500 servicemen in Moldova that are carrying out peacekeeping operations and protecting warehouses with ammunition left over from Soviet times. We constantly discuss this issue with Mr. Solana and he knows our position. We are ready to further work in this direction.

But what is happening at the same time? Simultaneously the so-called flexible frontline American bases with up to five thousand men in each. It turns out that NATO has put its frontline forces on our borders, and we continue to strictly fulfill the treaty obligations and do not react to these actions at all.

I think it is obvious that NATO expansion does not have any relation with the modernization of the Alliance itself or with ensuring security in Europe. On the contrary, it represents a serious provocation that reduces the level of mutual trust. And we have the right to ask: against whom is this expansion intended? And what happened to the assurances our western partners made af-

ter the dissolution of the Warsaw Pact? Where are those declarations today? No one even remembers them. But I will allow myself to remind this audience what was said. I would like to quote the speech of NATO General Secretary Mr. Woerner in Brussels on 17 May 1990. He said at the time that: "the fact that we are ready not to place a NATO army outside of German territory gives the Soviet Union a firm security guarantee". Where are these guarantees?

The stones and concrete blocks of the Berlin Wall have long been distributed as souvenirs. But we should not forget that the fall of the Berlin Wall was possible thanks to a historic choice — one that was also made by our people, the people of Russia — a choice in favour of democracy, freedom, openness and a sincere partnership with all the members of the big European family.

And now they are trying to impose new dividing lines and walls on us — these walls may be virtual but they are nevertheless dividing, ones that cut through our continent. And is it possible that we will once again require many years and decades, as well as several generations of politicians, to dissemble and dismantle these new walls?

Dear ladies and gentlemen!

We are unequivocally in favour of strengthening the regime of non-proliferation. The present international legal principles allow us to develop technologies to manufacture nuclear fuel for peaceful purposes. And many countries with all good reasons want to create their own nuclear energy as a basis for their energy independence. But we also understand that these technologies can be quickly transformed into nuclear weapons.

This creates serious international tensions. The situation surrounding the Iranian nuclear programme acts as a clear example. And if the international community does not find a reasonable solution for resolving this conflict of interests, the world will continue to suffer similar, destabilizing crises because there are more threshold countries than simply Iran. We both know this. We are going to constantly fight against the

threat of the proliferation of weapons of mass destruction.

Last year Russia put forward the initiative to establish international centers for the enrichment of uranium. We are open to the possibility that such centers not only be created in Russia, but also in other countries where there is a legitimate basis for using civil nuclear energy. Countries that want to develop their nuclear energy could guarantee that they will receive fuel through direct participation in these centers. And the centers would, of course, operate under strict IAEA supervision.

The latest initiatives put forward by American President George W. Bush are in conformity with the Russian proposals. I consider that Russia and the USA are objectively and equally interested in strengthening the regime of the non-proliferation of weapons of mass destruction and their deployment. It is precisely our countries, with leading nuclear and missile capabilities, that must act as leaders in developing new, stricter non-proliferation measures. Russia is ready for such work. We are engaged in consultations with our American friends.

In general, we should talk about establishing a whole system of political incentives and economic stimuli whereby it would not be in states' interests to establish their own capabilities in the nuclear fuel cycle but they would still have the opportunity to develop nuclear energy and strengthen their energy capabilities.

In connection with this I shall talk about international energy cooperation in more detail. Madam Federal Chancellor also spoke about this briefly — she mentioned, touched on this theme. In the energy sector Russia intends to create uniform market principles and transparent conditions for all. It is obvious that energy prices must be determined by the market instead of being the subject of political speculation, economic pressure or blackmail.

We are open to cooperation. Foreign companies participate in all our major energy projects. Ac-

cording to different estimates, up to 26 percent of the oil extraction in Russia — and please think about this figure — up to 26 percent of the oil extraction in Russia is done by foreign capital. Try, try to find me a similar example where Russian business participates extensively in key economic sectors in western countries. Such examples do not exist! There are no such examples.

I would also recall the parity of foreign investments in Russia and those Russia makes abroad. The parity is about fifteen to one. And here you have an obvious example of the openness and stability of the Russian economy.

Economic security is the sector in which all must adhere to uniform principles. We are ready to compete fairly.

For that reason more and more opportunities are appearing in the Russian economy. Experts and our western partners are objectively evaluating these changes. As such, Russia's OECD sovereign credit rating improved and Russia passed from the fourth to the third group. And today in Munich I would like to use this occasion to thank our German colleagues for their help in the above decision.

Furthermore. As you know, the process of Russia joining the WTO has reached its final stages. I would point out that during long, difficult talks we heard words about freedom of speech, free trade, and equal possibilities more than once but, for some reason, exclusively in reference to the Russian market.

And there is still one more important theme that directly affects global security. Today many talk about the struggle against poverty. What is actually happening in this sphere? On the one hand, financial resources are allocated for programmes to help the world's poorest countries — and at times substantial financial resources. But to be honest -- and many here also know this — linked with the development of that same donor country's companies. And on the other hand, developed countries simultane-

ously keep their agricultural subsidies and limit some countries' access to high-tech products.

And let's say things as they are — one hand distributes charitable help and the other hand not only preserves economic backwardness but also reaps the profits thereof. The increasing social tension in depressed regions inevitably results in the growth of radicalism, extremism, feeds terrorism and local conflicts. And if all this happens in, shall we say, a region such as the Middle East where there is increasingly the sense that the world at large is unfair, then there is the risk of global destabilization.

It is obvious that the world's leading countries should see this threat. And that they should therefore build a more democratic, fairer system of global economic relations, a system that would give everyone the chance and the possibility to develop.

Dear ladies and gentlemen, speaking at the Conference on Security Policy, it is impossible not to mention the activities of the Organization for Security and Cooperation in Europe (OSCE). As is well-known, this organization was created to examine all — I shall emphasize this — all aspects of security: military, political, economic, humanitarian and, especially, the relations between these spheres.

What do we see happening today? We see that this balance is clearly destroyed. People are trying to transform the OSCE into a vulgar instrument designed to promote the foreign policy interests of one or a group of countries. And this task is also being accomplished by the OSCE's bureaucratic apparatus which is absolutely not connected with the state founders in any way. Decision-making procedures and the involvement of so-called non-governmental organizations are tailored for this task. These organizations are formally independent but they are purposefully financed and therefore under control.

According to the founding documents, in the humanitarian sphere the OSCE is designed to

assist country members in observing international human rights norms at their request. This is an important task. We support this. But this does not mean interfering in the internal affairs of other countries, and especially not imposing a regime that determines how these states should live and develop.

It is obvious that such interference does not promote the development of democratic states at all. On the contrary, it makes them dependent and, as a consequence, politically and economically unstable.

We expect that the OSCE be guided by its primary tasks and build relations with sovereign states based on respect, trust and transparency.

Dear ladies and gentlemen!

In conclusion I would like to note the following. We very often — and personally, I very often — hear appeals by our partners, including our European partners, to the effect that Russia should play an increasingly active role in world affairs.

In connection with this I would allow myself to make one small remark. It is hardly necessary to incite us to do so. Russia is a country with a history that spans more than a thousand years and has practically always used the privilege to carry out an independent foreign policy.

We are not going to change this tradition today. At the same time, we are well aware of how the world has changed and we have a realistic sense of our own opportunities and potential. And of course we would like to interact with responsible and independent partners with whom we could work together in constructing a fair and democratic world order that would ensure security and prosperity not only for a select few, but for all.

Thank you for your attention.

HORST TELTSCHIK: Thank you very much for your important speech. We heard new themes, including the issue of global security architecture — one was not in the foreground over the

last few years — disarmament, arms control, the issue of the NATO-Russian relations, and cooperation in the field of technology.

There are still a whole number of questions and Mr President is ready to answer.

QUESTION: Dear Mr. President, thank you for your speech. I would like to emphasize that the German Bundestag is convinced of Russia's importance as Europe's partner and of the importance of the role you play. The Federal Chancellor said this in her speech.

Proceeding from experience, I would like to mention two issues in your speech. First of all, on your opinion of NATO and NATO expansion, a phenomenon that you consider dangerous for Russia. Would you acknowledge that this phenomenon is, in practice, not expansion but rather the self-determination of democratic states who want this? And that NATO finds it difficult to accept states that do not declare this readiness? You could admit that thanks to NATO expansion eastern borders have become more reliable, more secure. Why are you afraid of democracy? I am convinced that only democratic states can become members of NATO. This stabilizes neighbours.

About what is happening inside your country. The murder of Anna Politkovskaya was a symbol. One can say that this affects many journalists, makes everybody afraid, and the law on non-governmental organizations also causes alarm.

QUESTION: I well understand your comments about non-proliferation. Especially at the end of the Cold War we saw a reduction of the deployment of nuclear weapons, but we also saw increased terrorism. Nuclear materials must be kept away from terrorists.

QUESTION: Coming back to the question that was also asked to the Federal Chancellor. What does the future hold for Kosovo and Serbia? What is your opinion of Mr. Ahtisaari? How will Russia influence resolving this problem?

QUESTION: Can you comment on the experiences of Russian servicemen in Chechnya? And about your comments on energy: you briefly mentioned the market role energy plays in politics. The EU is interested in reaching a partnership agreement that contains fixed policy principles. Are you ready to guarantee reliable energy deliveries, including in the agreement?

QUESTION: Mr. President, your speech was both sincere and frank. I hope that you understand my frank and direct question. In the 1990s Russian experts actively helped Iran develop missile technologies. Iran now has advanced medium- and long-range missiles that would enable it to strike Russia and part of Europe. They are also working towards placing nuclear warheads on these missiles. Your country has made efforts to negotiate with Iran on this issue and supported the UN Security Council resolution to prevent Iran from carrying out such a policy. My question is as follows: what efforts will Russia make — through the UN or otherwise — to stop these very serious events in Iran?

QUESTION: I am confident that the historians of the future will not describe our conference as one in which the Second Cold War was declared. But they could. You said that it is necessary to put pressure on Iran and to provide positive incentives. But is it not true that Russia is interfering with the process of applying strong pressure through sanctions? Secondly, with regards to deliveries of weapons, Russia is encouraging Iran, especially since these weapons appeared in Lebanon and in Gaza. What are your comments on this?

QUESTION: I understand your sincerity and I hope that you will accept our sincerity. First of all, about arms control. Who needs a new arms race? I want to point out that the USA has not developed a new strategic weapon in more than two decades and that you recently tested the Topol-M missile, and that it is already deployed in silos and on mobile installations. You criticized the USA for unilateral actions and said twice that military actions can only be le-

gitimate if they receive UN approval. The USA is carrying out military actions in Iraq and in Afghanistan according to UN decisions and today in Kosovo the majority of troops are supporting peace-making operations in this country. My question is the following: are you saying that independently of how Russia perceives a threat to its international interests, it will not undertake military operations without UN approval?

QUESTION: You talked about the danger of a unipolar world in which one sovereign makes a decision without consulting anyone else. In many people's opinion, in Russia we are seeing an increasingly unipolar government where competing centers of influence are forced to tow the party line, whether it be in the State Duma, the regional leadership, the media, business communities or non-governmental organizations. Would a unipolar government be such a reliable partner when the issue of energy security is at stake?

PRESIDENT VLADIMIR PUTIN: First of all I would like to thank you for your questions. Very interesting. It is a shame that we have little time left because I would be pleased to have a separate discussion with all of you. I very much enjoy this, I like it.

I will begin with the last question about the unipolar nature of the Russian government. Today the Communist Party of the Russian Federation, the United Russia Party, the Liberal Democratic Party and other political forces as well sit in the Russian parliament. And their basic positions differ significantly. If you aren't aware of this then just have a talk with the leadership of the Communist Party of the Russian Federation and then with the leader of our liberal democrats, Mr. Zhirinovsky. You will see the difference at once. If you cannot see it now, then have a talk with them. There is no problem here, simply go to Moscow and talk to them.

About our future plans. We would like to have a mature political system, a multi-party system with responsible politicians who can anticipate

the country's development and not only work responsibly before elections and immediately after, but in a long-term future as well. That is what we aspire to. And this system will certainly be a multi-party one. All our actions within Russia, including changing the State Duma election regime, the election regime in the Russian parliament, are designed to strengthen a multi-party system in Russia. And now about whether our government cabinet is able to operate responsibly in resolving issues linked to energy deliveries and ensuring energy security. Of course it can! Moreover, all that we have done and are doing is designed to achieve only one goal, namely to transfer our relations with consumers and countries that transport our energy to market-based, transparent principles and long-term contracts.

I will remind you and my colleague, the President of Ukraine, who is sitting opposite from me, also knows this. For fifteen years prior to 2006, as long as we did not make the corresponding decisions during our difficult talks, deliveries of Russian energy and, first and foremost, of gas to Europe depended on the conditions and prices for the deliveries of Russian gas to Ukraine itself. And this was something that Ukraine and Russia agreed among themselves. And if we reached no agreement, then all European consumers would sit there with no gas. Would you like to see this happen? I don't think so. And despite all the scandals, the protection of interests, and differences of opinion we were able to agree with President Yushchenko. I consider that he made a responsible, absolutely correct and market-oriented decision. We signed separate contracts for the delivery of our gas to Ukraine and for delivering Russian gas to Europe for the next five years. You should thank us, both Russia and Ukraine, for this decision. And thank you also for your question.

It would have been better if I answered your questions at once.

Regarding our perception of NATO's eastern expansion, I already mentioned the guarantees that were made and that are not being observed

today. Do you happen to think that this is normal practice in international affairs? But all right, forget it. Forget these guarantees. With respect to democracy and NATO expansion. NATO is not a universal organization, as opposed to the UN. It is first and foremost a military and political alliance, military and political! Well, ensuring one's own security is the right of any sovereign state. We are not arguing against this. Of course we are not objecting to this. But why is it necessary to put military infrastructure on our borders during this expansion? Can someone answer this question? Unless the expansion of military infrastructure is connected with fighting against today's global threats? Let's put it this way, what is the most important of these threats for us today — the most important for Russia, for the USA and for Europe — it is terrorism and the fight against it.

Does one need Russia to fight against terrorism? Of course! Does one need India to fight against terrorism! Of course! But we are not members of NATO and other countries aren't either. But we can only work on this issue effectively by joining our forces. As such, expanding infrastructure, especially military infrastructure, to our borders is not connected in any way with the democratic choices of individual states. And I would ask that we not mix these two concepts.

You know, I wrote so illegibly here that even I cannot read my own writing. I will therefore answer what I can read and if I do not answer something, please remind me of the question.

What will happen with Kosovo and with Serbia? Only Kosovars and Serbs can know. And let's not tell them how they should live their lives. There is no need to play God and resolve all of these peoples' problems. Together we can only create certain necessary conditions and help people resolve their own problems. Create the necessary conditions and act as the guarantors of certain agreements. But we should not impose these agreements. Otherwise, we shall simply put the situation into a dead end. And if one of the participants in this difficult process feels of-

fended or humiliated, then the problem will last for centuries. We will only create a dead end.

What does our position consist in? Our position consists in adhering precisely to this principle. And if we see that one party is clearly dissatisfied with the proposals to resolve the situation then we are not going to support this option.

I did not exactly understand what you meant when you asked about our servicemen's experience in Chechnya. Their experience is not pleasant, but it is extensive. And if you are interested in the general situation in Chechnya, then I can tell you that a parliament and a president have been elected, and that the government is functioning. All the bodies of authority and administration have been formed. Practically all the political forces in Chechnya have been involved in work in the Republic. As an example, the former Defense Minister of Aslan Maskhadov's government is now a member of parliament in Chechnya. And we made a whole series of decisions that would allow former insurgents to return not only to normal life, but also to the Republic's political activities. As such, today we prefer to act by using economic and political means and, in practice, we have transferred the responsibility for ensuring security almost 100 percent to the Chechen people. Because the agencies of law and order that were formed in Chechnya are almost 100 percent composed of local citizens, from those living in Chechnya on a permanent basis — from Chechens.

As to Lebanon, I also did not quite understand what you meant. But, yes, the fact that we sent military construction workers to Lebanon to restore bridges and infrastructure that was destroyed in the conflict with Israel is a confirmation of a well-known situation, the one I described just now. And military units protecting these builders were made up of servicemen from Chechnya and with Chechen origins. We recognized that if our servicemen must operate in regions inhabited by Muslims, sending a contingent of Muslim servicemen would be no bad thing. And we were not mistaken. The local

population really gave a warm welcome to our military builders.

Now about the energy agreement with the European Union, since this is how I understood the question. We have said many times that we are not against agreeing on the principles underlying our energy relations with the EU. Moreover, the principles contained in the Charter are generally comprehensible. But the Charter itself is not so acceptable to us. Because not only Russia but also our European partners do not adhere to its principles. It is enough to remember that the market for nuclear materials remains closed for us. Nobody has opened this market to us.

There are also other moments which I simply do not want to draw attention to now. But as to the principles themselves, we are already using these principles in our work with German companies. I shall remind you of the transaction that took place between Gazprom and BASF. As a matter of fact, this was an asset swap. We are ready to continue to work this way. We are ready. But in each concrete instance we must understand what we give, what our partners give, calculate, have an independent international expert evaluation, and then make a decision. We are ready to engage in this work. We have actually just recently done something similar with our Italian partners, with the company ENI. And we did more than simply sign an agreement about deliveries until 2035 — I think — we also talked about swapping assets. And we are studying this same type of cooperation with our Ukrainian friends. This is going ahead.

And is it necessary to fix these principles in a possible future fundamental text between Russia and the EU? It is possible to have different opinions on this issue. I consider that it is not necessary because, in addition to energy, we have other spheres in which we cooperate with the EU, including agriculture, high-tech and transportation. And all of this is very important and very interesting. And we cannot put all of this in one fundamental act that should act as a framework document. Or would you want us

to put only what you need in the document and leave what we need outside of the framework? Let's discuss things honestly with one another and take mutually acceptable decisions.

"In the 1990s Russia helped Iran develop missile technologies". I think that you asked me this question. "Today Iran wants to put nuclear warheads on these missiles that could reach Europe. What is Russia going to do about the Iranian nuclear programme?" Is that so?

Well first of all, I do not have data that in the 1990s Russia helped Iran create its own missile technologies. It was other countries that worked very actively towards this. And technology was transferred through different channels. And we have proof of this. At the time I gave these proofs directly to the President of the United States. And technology also came from Europe and from Asian countries.

So Russia is hardly at fault here. I assure you. Russia is the country least involved here. Least of all. If it is involved at all. At the time I was still working in St Petersburg, but we were not involved with this. I can assure you of this. But you know that at the business level something could have happened. We trained experts in institutes and so on. And at the request and according to the information of our American partners we reacted harshly to this. Immediately and harshly. We did not observe such a reaction from our other partners, including European partners. Moreover, I do not know whether you are aware of this or not but you should know that military technology and special equipment is still coming from the United States. Until now. Until now spare parts for F-14 planes come from the armed forces and the Pentagon. As far as I know, there is even an investigation taking place in the United States on this account. And despite the fact that this investigation is proceeding and that these spare parts were seized at the border and then sent back, after a certain amount of time, according to the data I have — and if they are not correct then check them — those same cargos were

again seized at the border. Even bearing a tag 'material evidence'.

You know, this stream is really hard to stop. We need to work together to do so.

About whether or not Iran has missiles that threaten Europe. You are mistaken. Today Iran has — Mr. Gates is here today and certainly knows this data better than I do, and the Russian Defense Minister is also here — missiles with a range of 2000 kilometers.

RUSSIAN DEFENCE MINISTER SERGEI IVANOV: 1600-1700 kilometers.

VLADIMIR PUTIN: 1600-1700 kilometers. Only. Well, count how many kilometers there are between Munich and the Iranian border. Iran has no such missiles. They plan to develop some with a range of 2400 kilometers. It is not known whether they have the technology to do so. And with respect to 4000, 5000 or 6000 kilometers, then I think that this would simply require a different economy. So, it is improbable in general. And Iran is not threatening Europe. With regard to the idea that they are preparing to use nuclear warheads then we do not have such data. We do not have this data about nuclear warheads.

North Korea has tested a nuclear device. Iranians are constantly saying that their nuclear programme has a peaceful character. But I agree with you that the international community has concerns about the character and quality of Iran's nuclear programmes. And Mr. ElBaradei recently stated these concerns in what I think were six or seven points. I agree with you about this. And I do not understand why the Iranian party has still not reacted in a positive and constructive way to the concerns that Mr. ElBaradei stated and therefore assuaged these concerns. I do not understand this just as you do not understand it.

What are we going to do? I think that together we need to work patiently and carefully. And, that's right, to create incentives and show the Iranian leadership that cooperation with the in-

ternational community is much better than confrontation.

Yes, and again about the deliveries of weapons to Iran. You know that there has been more talk than deliveries. Our military and technical cooperation with Iran is minimal. Simply minimal. I am not sure what minimal figures it is estimated at. In general we deliver much less arms to the Middle East than other countries, including the United States. No comparison is possible there. We recently delivered an anti-aircraft weapon system to Iran — that is true — with a medium range, approximately 30 to 50 kilometers. That is true. Why did we do this? I can explain why. We did this so that Iran did not feel it had been driven into a corner. So that it didn't feel that it was in some kind of hostile environment. Rather that Iran could understand that it had channels of communication and friends that it could trust. We very much expect that the Iranian party will understand and hear our signals.

As to our weapons in Lebanon and in the Gaza strip. I am not aware of our weapons in the Gaza strip. I have not heard of such examples. Well, Kalashnikovs are in general the most widely used small arms in the world. They are probably everywhere. And probably there are still automatic Kalashnikovs in Germany or, in any case, some that have still not been destroyed. That is one hundred percent certain.

In Lebanon it is true. Elements of our anti-tank systems really have been seen there. That is true. Our Israeli partners told me about this at once. We carried out a thorough investigation into what happened. And we determined that these systems had remained in Lebanese territory after the Syrian army left. We carried out the corresponding work with our Syrian partners. We determined that our future military and technical cooperation with Syria would exclude the possibility that weapons could fall into any hands other than the ones they were destined for. We developed such a system. Among other things, we agreed on a system of possible warehouse inspections, at any time that is convenient for

Russian experts. Inspections in warehouses after deliveries of Russian weapons systems to Syria.

"The USA is not developing strategic weapons but Russia is. Will Russia use force in the future if it is not sanctioned by the UN? Russia is developing a system of strategic weapons".

Fine question, excellent! I am very grateful to you for this question. It will give me the opportunity to talk about the essence of what is happening. What are we indebted to in the past decades if there was a stand-off between two superpowers and two systems but nevertheless a big war did not take place? We are indebted to the balance of powers between these two superpowers. There was an equilibrium and a fear of mutual destruction. And in those days one party was afraid to make an extra step without consulting the other. And this was certainly a fragile peace and a frightening one. But as we see today, it was reliable enough. Today, it seems that the peace is not so reliable.

Yes, the United States is ostensibly not developing an offensive weapon. In any case, the public does not know about this. Even though they are certainly developing them. But we aren't even going to ask about this now. We know that these developments are proceeding. But we pretend that we don't know, so we say that they aren't developing new weapons. But what do we know? That the United States is actively developing and already strengthening an anti-missile defense system. Today this system is ineffective but we do not know exactly whether it will one day be effective. But in theory it is being created for that purpose. So hypothetically we recognize that when this moment arrives, the possible threat from our nuclear forces will be completely neutralized. Russia's present nuclear capabilities, that is. The balance of powers will be absolutely destroyed and one of the parties will benefit from the feeling of complete security. This means that its hands will be free not only in local but eventually also in global conflicts.

We are discussing this with you now. I would not want anyone to suspect any aggressive intentions on our part. But the system of international relations is just like mathematics. There are no personal dimensions. And of course we should react to this. How? Either the same as you and therefore by building a multi-billion dollar anti-missile system or, in view of our present economic and financial possibilities, by developing an asymmetrical answer. So that everybody can understand that the anti-missile defence system is useless against Russia because we have certain weapons that easily overcome it. And we are proceeding in this direction. It is cheaper for us. And this is in no way directed against the United States itself.

I completely agree if you say that the Strategic Defense Initiative (SDI) is not directed against us, just as our new weapons are not directed against you. And I fully agree with my colleague and my friend about another thing. Do you know — and I will not be afraid of the word — that in spite of all our disagreements I consider the President of the United States my friend. He is a decent person and I know that today the wolves can blame the United States for everything that is being done on the international arena and internally. But I know that he is a decent person and it is possible to talk and reach agreements with him. And when I talked to him he said: "I proceed from the fact that Russia and the USA will never be opponents and enemies again". I agree with him. But I repeat once again that there are symmetries and asymmetries here, there is nothing personal. It is simply a calculation.

And now about whether Russia will use military force without the sanction of the UN. We will always operate strictly within the international legal framework. My basic education is in law and I will allow myself to remind both myself and my colleagues that according to the UN Charter peace-keeping operations require the sanction of both the UN and the UN Security Council. This is in the case of peace-keeping operations. But in the UN Charter there is also

an article about self-defense. And no sanctions are required in this case.

So, what have I forgotten?

QUESTION: My question was about multipolarity in Russia itself and about the attitude of the international community towards Russia if Russia does not observe these principles, in reference to the murder of journalists, fears, anxieties, the absence of freedom and non-governmental organizations.

VLADIMIR PUTIN: I will say a couple of words. I already answered part of the question when I talked about the structure of the Russian parliament. Look at who is represented there, the political views of the people who have leadership positions in parliament, the legitimate parties. Now, as to non-governmental organizations, they are working actively in Russia. Yes, we introduced a new system for registering these organizations. But it is not that different from registration systems in other countries. And we have not yet seen any complaints from non-governmental organizations themselves. We have not refused registration to almost any organizations. There were two or three cases that were refused on simply formal grounds and these organizations are working on correcting certain provisions in their charters and so on. Nobody has been refused registration based on substantial, fundamental issues. All are continuing to work in the most active possible way and will continue to do so in the future.

What bothers us? I can say and I think that it is clear for all, that when these non-governmental organizations are financed by foreign governments, we see them as an instrument that foreign states use to carry out their Russian policies. That is the first thing. The second. In every country there are certain rules for financing, shall we say, election campaigns. Financing from foreign governments, including within governmental campaigns, proceeds through non-governmental organizations. And who is happy about this? Is this normal democracy? It

is secret financing. Hidden from society. Where is the democracy here? Can you tell me? No! You can't tell me and you never will be able to. Because there is no democracy here, there is simply one state exerting influence on another.

But we are interested in developing civil society in Russia, so that it scolds and criticises the authorities, helps them determine their own mistakes, and correct their policies in Russian citizens' interests. We are certainly interested in this and we will support civil society and non-governmental organizations.

As to fears and so on, are you aware that today Russians have fewer fears than citizens in many other countries? Because in the last few years we made cardinal changes to improve the economic well-being of our citizens. We still have a great many problems. And we still have a great many unresolved problems. Including problems linked with poverty. And I can tell you that fears basically come from this source.

As to journalists then yes, this represents an important and difficult problem. And, incidentally, journalists are not only killed in Russia, but in other countries as well. Where are most journalists killed? You are an expert and probably know in which country the most journalists died in, say, the last year and a half? The largest number of journalists were killed in Iraq.

As to tragedies within Russia, we will certainly struggle with these phenomena in the most thorough way possible and sternly punish all criminals who try to undermine trust in Russia and damage our political system.

Thank you for your attention.

Source: President of Russia V. Putin's Speech and the Following Discussion at the Munich Conference on Security Policy// The official site of the President of the Russian Federation// http://www.kremlin.ru/eng/speeches/2007/02/10/0138_type82912type82914type82917type84779_118123.shtml.

APPENDIX 3

Acronyms

ABM	anti-ballistic missile
BMD	ballistic missile defense
BTWC/BWC	Biological and Toxin Weapons Convention (Biological Weapons Convention, BWC)
BWC	Biological Weapons Convention
CIA	Central Intelligence Agency (USA)
CTBT	Comprehensive Nuclear Test-Ban Treaty
CTC	Counter-Terrorist Committee
CTR	Cooperative Threat Reduction, Nunn-Lugar Program
CW	chemical weapon/warfare
CWC	Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and their Destruction
DoD	Department of Defense (USA)
DoE	Department of Energy (USA)
DPRK	Democratic People's Republic of Korea
FATF	Financial Action Task Force on Money Laundering
FMCT	Fissile Material Cut-Off Treaty
G8	Group of Eight
GDP	gross domestic product
GNEP	Global Nuclear Energy Partnership
HEU	high enriched uranium
IAEA	International Atomic Energy Agency
IMEMO	Institute for World Economy and International Relations (Russia)
IMO	International Maritime Organization

ICAO	International Civil Aviation Organization
ICJ	International Court of Justice
INF	intermediate-range nuclear forces
INFCE	International Nuclear Fuel Cycle Estimation
LEU	low enriched uranium
LNG	liquefied natural gas
MAD	Mutual Assured Deterrence
MGIMO	Moscow State Institute for International Relations (Russia)
MIT	Massachusetts Institute of Technology (USA)
MTCR	Missile Technology Control Regime
NATO	North Atlantic Treaty Organization
NGO	non-governmental organization
NNWS	non-nuclear weapon state
NORAD	North American Aerospace Defense Command
NPT	Treaty on the Non-Proliferation of Nuclear Weapons (Nuclear Non-Proliferation Treaty)
NSG	Nuclear Suppliers Group
NTI	Nuclear Threat Initiative
OPCW	Organization for the Prohibition of Chemical Weapons
OSCE	Organization for Security and Cooperation in Europe
P5	five permanent members of the UN Security Council
PSI	Proliferation Security Initiative
RAS	Russian Academy of Sciences
R&D	research and development
SDI	Strategic Defense Initiative
START	Strategic Arms Reduction Treaty
TNT	trinitrotoluol
UAV	unmanned aerial vehicles
UNMOVIC	United Nations Monitoring, Verification and Inspection Commission
UNODC	United Nations Office on Drugs and Crime
UNSCOM	UN Special Commission (Iraq)
USEC	United States Enrichment Corporation
WCO	World Customs Organization
WHO	World Health Organization
WMD	weapon of mass destruction
WMDC	Weapons of Mass Destruction Commission

APPENDIX 4

List of Guests and Participants of the Conference

HONORARY GUESTS

- | | |
|---------------------------------|--|
| 1. Mohamed
EIBARADEI | Director General of the IAEA;
Winner of the 2005 Nobel Peace Prize; Ph.D.
(Egypt) |
| 2. Sergey
KIRIENKO | Head of the Russian Federal Agency for Atomic
Energy (former Prime Minister of the Russian
Federation) ¹ . |
| 3. Rolf
EKEUS | High Commissioner on National Minorities at
the OSCE; Ambassador (Sweden) ² . |
| 4. Nikolay
LAVEROV | Vice President of the Russian Academy of
Sciences (former Deputy Chairman of the
Council of Ministers of the USSR, Chairman
of the State Committee of the USSR Council
of Ministers for Science and Technology);
Academician (RAS, Russia). |
| 5. Hans
BLIX | Former Director General of the IAEA, Chairman
of the WMDC; Ph.D. (Sweden). |

¹ Current position: Director General of the Rosatom State Nuclear Energy Corporation

² Current position: Chairman of the Governing Board, SIPRI (Sweden)

6. **William PERRY** Professor, Stanford University (former Secretary of the U.S. Department of Defense) (USA).
7. **Jean ASSELBORN** Deputy Prime Minister of the Grand Duchy of Luxembourg; Minister for Foreign Affairs and Immigration (Luxembourg).

CHAIRMAN OF THE ORGANIZING COMMITTEE

8. **Viatcheslav KANTOR** Chairman of the Conference Organizing Committee; President of the European Jewish Congress; President of the Russian Jewish Congress; Chairman of the European Jewish Fund; Ph.D..

PARTICIPANTS

9. **Yukiya AMANO** Ambassador Extraordinary and Plenipotentiary to the Permanent Mission of Japan at the International Organizations in Vienna (former Chair of the IAEA Board of Governors); Ambassador (Japan).
10. **Uzi ARAD** Director of the Institute for Policy and Strategy at the Lauder School of Government, Diplomacy and Strategy, Interdisciplinary Center Herzliya; Adviser to the Knesset Foreign Affairs and Defense Committee; Professor (Israel).
11. **Alexei ARBATOV** Head of the Center for International Security of the IMEMO (RAS); Scholar-in-Residence of the Carnegie Moscow Center (former Deputy Chairman of the Defense Committee of the State Duma, Federal Assembly — Russian Parliament); Corresponding member (RAS, Russia).

12. **Vladimir BARANOVSKIY** Deputy Director of the IMEMO; Corresponding Member (RAS, Russia).
13. **Francesco CALOGERO** Professor of the Theoretical Physics of the Department of Physics, University of Rome "La Sapienza" (former Secretary General of Pugwash Conferences on Science and World Affairs, Italy).
14. **Shahran CHUBIN** Director of Studies and Joint Course Director, International Training Course in Security Policy, Geneva Centre for Security Policy; Ph.D. (Switzerland).
15. **Joseph CIRINCIONE** Senior Vice President for National Security and International Affairs at the Center for American Progress (USA)³.
16. **Armand CLESSE** Director of the Luxembourg Institute for European and International Studies; Ph.D. (Luxembourg).
17. **Thomas COCHRAN** Director of the Nuclear Program, Natural Resources Defense Council; Ph.D. (USA).
18. **Laban COBLENTZ** Public Information Officer (IAEA).
19. **Patrick CRONIN** Director of Studies at the International Institute for Strategic Studies (IISS); Ph.D. (U.K.).
20. **Jayantha DHANAPALA** Senior Adviser to the President of Sri Lanka (former United Nations Under-Secretary-General for Disarmament Affairs); Ambassador (Sri Lanka).
21. **Anatoliy DIAKOV** Director of the Center for Arms Control, Energy and Environmental Studies of the Moscow Institute of Physics and Technology; Ph.D. (Russia).

³ Current position: President of the Ploughshares Fund (USA)

22. **Vladimir DVORKIN** Principal researcher of the IMEMO (RAS, former Director of the 4th Major Institute of the Ministry of Defense); Professor; Full Member of the Russian Academy of Rocket and Artillery Sciences, Academies of Military Sciences, the Russian Engineering Academy, the International Engineering Academy, Russian Academy of Astronautics; Major-General, ret. (Russia)
23. **Andrey FEDOROV** Member of Presidium, Council on Foreign and Defense Policy (former Deputy Minister of Foreign Affairs, Russia).
24. **Trevor FINDLAY** Director of the Canadian Center for Treaty Compliance; Associate Professor of the Norman Paterson School of International Affairs (Canada).
25. **Mark FITZPATRICK** Senior Fellow for Non-Proliferation of the IISS (U.K.).
26. **Henry GAFFNEY** Director for Strategy and Concepts of the Center for Naval Analyses, CNA Corporation (USA).
27. **Rose GOTTEMOELLER** Director of the Carnegie Moscow Center (former Assistant Secretary for Non-Proliferation and National Security of the U.S. Department of Energy, USA).
28. **Arnold HORELICK** Professor Emeritus of Political Science of the University of California at Los Angeles (USA).
29. **Carlo JEAN** President of the Society for the Management of Nuclear Plants «SOGIN» (former Military Adviser to the President of Italy); General ret. (Italy).

30. **Alexander KALIADIN** Principal Researcher of the IMEMO (RAS); Ph.D. (Russia).
31. **Sergey KARAGANOV** Chairman of Presidium of the Council on Foreign and Defense Policy; Deputy Director of the Institute of Europe (RAS); Professor (Russia).
32. **Catherine KELLEHER** College Park Professor at the University of Maryland; Senior Fellow of the Center for Naval Analysis, CNA Corporation (USA).
33. **Isaak KHALATNIKOV** Director Emeritus of the Landau Institute for Theoretical Physics; Academician (RAS, Russia).
34. **Anton KHLOPKOV** Executive Director of the PIR Center (Russia).
35. **Shannon KILE** Senior Researcher, Project on Nuclear Arms Control and Non-Proliferation of the SIPRI (Sweden).
36. **Byungki KIM** Vice Dean and Professor of International Relations at the Graduate School of International Studies, Korea University (Republic of Korea).
37. **Alexander KONOVALOV** President of the Institute for Strategic Assessments; Professor of the MGIMO; Ph.D. (Russia).
38. **Michael KREPON** Founding President of the Henry L. Stimson Center (USA).
39. **Robert LEGVOLD** Professor, Columbia University (USA).
40. **Ariel LEVITE** Principal Deputy Director General (Policy), Israel Atomic Energy Commission; Ph.D. (Israel).

41. **Patricia LEWIS** Director of the UN Institute for Disarmament Research (UNIDIR); Ph.D. (Switzerland).
42. **Alexander NIKITIN** Director of the Center for Euro-Atlantic Security, MGIMO; President of the Russian Political Science Association; Professor (Russia).
43. **Robert NURICK** Senior Fellow of the Center for Non-Proliferation Studies, Monterey Institute of International Studies (USA).
44. **Vladimir ORLOV** President of the PIR Center; Co-Director of the European Training Course in Security Policy at the Geneva Centre for Security Policy; Ph.D. (Russia).
45. **Sergey OZNOBISHCHEV** Director of the Institute for Strategic Assessments; Professor of the MGIMO and the Higher School of Economics (former Chief of the Organizational Analytic Division, RAS); Ph.D.; Full Member of the Russian Academy of Cosmonautics, the World Academy of Sciences for Complex Security (Russia).
46. **Zhenqiang PAN** Vice-President of the China Foundation for International Studies and Academic Changes; Professor of International Relations at the Institute for Strategic Studies, University of National Security; Major-General, ret. (China).
47. **George PERKOVICH** Vice President for Studies – Global Security and Economic Development and Director of the Non-Proliferation Program at the Carnegie Endowment for International Peace; Ph.D. (USA).
48. **Aleksander PIKAEV** Vice-chairman of the Committee of Academics for International Security; Head of the Department, IMEMO (RAS); Ph.D. (Russia).

49. **William POTTER** Director James Martin Center for Non-Proliferation Studies and Professor of Non-Proliferation Studies, Monterey Institute of International Studies; Ph.D. (USA).
50. **Vasanth RAO RAGHAVAN** Director of the Delhi Policy Group; President of the Centre for Security Analysis; Lieutenant General, ret. (India).
51. **Roald SAGDEEV** Distinguished Professor of Physics and Director of the "East-West" Center at the University of Maryland; Director Emeritus of the Russian Space Research Institute; Academician (RAS, Russia/USA).
52. **Evgeney SATANOVSKIY** President of the Institute of the Middle East; Ph.D. (Russia).
53. **Carlo SCHAERF** Professor of Physics of the University of Rome "Tor Vergata" (former President of the National Commission for Nuclear Physics) (Italy).
54. **Yury SHIYAN** Chief Expert on Arms Control and Non-Proliferation, Presidium of the Russian Academy of Sciences (Russia).
55. **Roland TIMERBAYEV** Chairman of the Board of the PIR-Center (former Permanent USSR/Russia's Representative to International Organizations in Vienna); Ambassador (Russia).
56. **Theodor WINKLER** Director of the Center for the Democratic Control of Armed Forces (DCAF); Ambassador (Switzerland).
57. **Jon WOLFSTHAL** Senior Fellow (International Security Program) of the Center for Strategic and International Studies (USA).

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Minister for Foreign Affairs and Immigration
Jean Asselborn

Chairman of Israel Beytenu Party
Avigdor Liberman

Aid to the President of the Russian Federation
Sergey Prikhodko

Minister of Foreign Affairs
Sergey Lavrov

Stanford University
Professor **William Perry**

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academician **Nikolay Laverov**

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