



CONTEMPORARY PROBLEMS OF NUCLEAR NON-PROLIFERATION

Proceedings of the Fifth Anniversary
International Luxembourg Forum Conference

BERLIN, 2012



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The book contains proceedings of the Fifth Anniversary International Luxembourg Forum Conference (June 4-5, 2012, Berlin, Germany), which focused on contemporary problems of nuclear non-proliferation, as well as developments in the situation with the Iranian and North Korean nuclear programs and the Indo-Pakistani confrontation. The most authoritative experts from different countries participated in the meeting. In addition to various reference materials, the Appendices include the Declaration adopted by the participants in the conference. The publication is intended for experts on the subject, as well as for a wide readership.

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ABOUT THE INTERNATIONAL LUXEMBOURG FORUM ON PREVENTING NUCLEAR CATASTROPHE

The Forum was established pursuant to a decision of the International Conference on Preventing Nuclear Catastrophe held in Luxembourg on May 24-25, 2007. The Forum is one of the largest non-governmental organizations uniting leading, world-renowned experts on non-proliferation of nuclear arms and arms reduction and limitation.

The Forum's priorities are:

- to facilitate the process of arms limitation and reduction and counteract growing threats to the nuclear non-proliferation regime and erosion of the Non-Proliferation Treaty (NPT), including the escalating danger of nuclear terrorism and attempts by separate states to gain access to nuclear materials and technologies;
- to promote international peace and security through new approaches, and to propose practical solutions to decision-makers regarding critical non-proliferation and arms control issues.

The principal guiding bodies of the Forum are the International Advisory Council (IAC) and the Supervisory Council (SC).

The International Advisory Council consists of more than 50 leading experts from many countries. IAC members make proposals on the Forum's agenda, arrange events, and participate in drafting the Forum's final documents (declarations, memoranda, statements, etc.) to be circulated to top-tier politicians, heads of international organizations, and public figures around the world.

The Supervisory Council is a team of prominent politicians, public figures, and world-renowned scientists, including Hans Blix, former Director General of the International Atomic Energy Agency (IAEA); William Perry, former Secretary of the U.S. Department of Defense; Gareth Evans, Chancellor of the Australian National University, former Australian Senator and Member of Parliament, Minister of Foreign Affairs of Australia; Rolf Ekeus, former OSCE High Commissioner on National Minorities; Sam Nunn, prominent U.S. politician and Co-Chair of the Nuclear Threat Initiative; Roald Sagdeev, Academician of the Russian Academy of Sciences (RAS) and Distinguished University Professor at the University of Maryland in the United States; Nikolay Laverov, Academician and Vice President of the Russian Academy of Sciences; and Igor Ivanov, Corresponding member (RAS), President of the Russian International Affairs Council, former Russian Minister of Foreign Affairs and Secretary of the Security Council of the Russian Federation.

Members of the Supervisory Council advise on the activities of the Forum, a high-profile public entity aimed at strengthening international peace and security.

The Forum is headed by its President, Viatcheslav Kantor, Ph.D., a prominent international public figure, philanthropist, entrepreneur, and investor. Mr. Kantor leads a number of international public institutions.

On April 14, 2008, a Forum Working Group meeting was held in Moscow. Following alarming developments in the Iranian nuclear program, the meeting focused primarily on possible political and diplomatic ways of addressing the issue.

As an outcome of the meeting, the workshop issued a memorandum providing a number of practical steps toward nuclear non-proliferation. Like the previous Luxembourg Conference Declaration, the memorandum was circulated to world leaders and the heads of major international organizations.

The next event took place in Rome on June 12, 2008, in the form of a Joint Seminar of the International Luxembourg Forum on Preventing Nuclear Catastrophe and the Pugwash Conferences on Science and World Affairs. The seminar was dedicated to the results and prospects of the Preparatory Committee for the 2010 NPT Review Conference.

The Supervisory Board of the International Luxembourg Forum met on December 9, 2008, in Moscow. Participants, who included William Perry, Hans Blix, Rolf Ekeus, and Igor Ivanov, summed up the results of the organization's activities in 2008 and outlined plans and priorities for 2009. The session addressed the most urgent nuclear non-proliferation and international security issues, both worldwide and in challenging regions. On the previous day, December 8, Luxembourg Forum representatives met with Russian Foreign Minister Sergey Lavrov and Deputy Secretary of the Security Council of the Russian Federation Vladimir Nazarov.

The work of the Forum in 2009, as before, was dedicated to strengthening the non-proliferation regime. On April 22, a Working Group meeting took place in Moscow devoted to the reduction of strategic offensive weapons and the prospects for the Preparatory Committee for the 2010 NPT Review Conference.

On July 2 another Working Group meeting was convened in Geneva, with one session focusing on the results of the 2009 Preparatory Committee and prospects for the 2010 NPT Review Conference, and the other — on the development of the situation surrounding the Iranian and North Korean nuclear and missile programs. In keeping with the Forum's traditions, final documents on the outcome of the meetings were agreed upon and adopted and then sent to world leaders and the heads of international organizations.

On December 8, 2009, the meeting of the Supervisory Board with the participation of William Perry, Hans Blix, Rolf Ekeus, Gareth Evans, and Roald Sagdeev reviewed the activity of the Forum during the year and highlighted the principal directions for the work of the International Luxembourg Forum (ILF) during the next year. On the next day, Luxembourg Forum representatives met with Russian Foreign Minister Sergey Lavrov and Deputy Secretary of the Security Council of the Russian Federation Yuriy Baluevskyi.

The year 2010 was marked by the signing of the New START Treaty (Forum members called for this in a number of their statements), which attracted special attention to the whole scope of nuclear-related arms control and security problems. These issues were reflected in the work of the ILF and discussions that took place at the Forum's events.

On April 8-9, a Working Group meeting was held in Vienna devoted to the prospects of the 2010 NPT Review Conference. This discussion was especially important on the eve of the Conference itself. A number of practical proposals addressing the pressing non-proliferation issues were summed up in the Working Group's final document. The document, containing possible solutions to the acute issues of the Conference agenda, was forwarded to world leaders.

The ILF Conference in Washington (September 20-21) placed special emphasis on the stumbling blocks on the way toward ratification of the Treaty, analyses of the possible next steps in arms control, and the future of nuclear disarmament and non-proliferation. The prospects for cooperation on Ballistic Missile Defense (BMD), as the principal possible area of partnership, were subjected to thorough analyses.

The ILF event attracted special attention from the political academic community and the public at large. The prominent American member of the Forum's Supervisory Board, Senator Sam Nunn, actively participated in the discussion and in the press conference that followed.

The traditional annual meeting of the Supervisory Board took place on December 8-9, 2010. In opening remarks, Sergey Ryabkov, Deputy Russian Foreign Minister, presented the Address of the President of the Russian Federation, Dmitry Medvedev, in which the latter highly praised the activity of the Forum in strengthening the NPT Treaty, perfecting arms control mechanisms, and preventing the threat of nuclear terrorism. The President also provided assurance that the proposals and recommendations of the Forum were finding their practical implementation in the solution of these problems by the world community.

As usual the meeting took place with the Minister of Foreign Affairs, Sergey Lavrov, who presented his vision of world security and Russian interests and took into consideration the proposals of the Supervisory Board (SB) on practical solutions of the most acute issues of non-proliferation and arms control. Members of the SB also visited the Security Council of the Russian Federation (Deputy Head of the Council — Yuri Nazarov).

In their Declaration members of the Supervisory Board paid special attention to and expressed their unanimous and strong support of the article

by four Russian "wise men" (Y. Primakov, I. Ivanov, Y. Velikhov, and M. Moiseev), "From Nuclear Deterrence to Common Security," published in the Russian newspaper *Izvestiya* on October 15, 2010. Also the principal directions of the Luxembourg Forum's activities for the year 2011 were set. Among them was quite an innovative task: to elaborate "red lines" of abiding by the spirit and letter of the NPT, the crossing of which would entail effective actions by the UN Security Council, in accordance with articles 41 and 42 of the UN Charter.

In Stockholm on June 13-14, 2011, a Joint Conference of the International Luxembourg Forum and the Stockholm International Peace Research Institute (SIPRI) was held on the topic: "Perspectives of Nuclear Proliferation and Disarmament after Entry into Force of the New START Treaty." In the course of the meeting the status of nuclear non-proliferation, perspectives for the future reduction and limitation of nuclear weapons, and cooperation in BMD were analyzed as key problems for future nuclear disarmament.

The annual meeting of the Supervisory Board took place in Moscow on December 12-13, 2011. In addition to the presentations by William Perry, Rolf Ekeus, and other members of the Supervisory Board and International Advisory Council on the acute issues of non-proliferation and arms control, the meeting was addressed by Anatoly Antonov, Deputy Defense Minister of the Russian Federation; Nikolay Spasskiy, Deputy Director General of the Rosatom State Nuclear Energy Corporation; and Vladimir Leontiev, Deputy Director of the Department for Security Affairs and Disarmament, Ministry of Foreign Affairs of the Russian Federation.

According to the tradition, as the result of the meeting a final document was drawn up, which is now being sent to the leaders of the nuclear states and heads of international organizations.

In its future plans the International Luxembourg Forum is going to continue the approach that appears to be fruitful — of deep expert analyses of the most pressing problems in non-proliferation, arms control, and international security, with the goal of producing proposals of practical value.



OFFICIAL ADDRESS TO THE CONFERENCE



Sergey LAVROV, Ambassador
Minister of Foreign Affairs, Russian Federation

I welcome the participants of the Anniversary Conference of the International Luxembourg Forum on Preventing Nuclear Catastrophe.

The liberation of the world from the threat that weapons of mass destruction present is justifiably considered to be one of the most important factors in providing international security and stability. The Russian Federation contributes consistently to achieving that noble goal by taking specific and responsible steps aimed at limiting and reducing nuclear weapons, and observing and strengthening paramount international arms control and non-proliferation legal regimes.

We are committed to a multifaceted strategy that entails reducing and limiting nuclear arsenals while ensuring equal and indivisible security for all participants in international relations, while accounting for the set of factors that influence strategic stability. The Treaty between the United States of America and the Russian Federation on Measures for the Further Reduction and Limitation of Strategic Offensive Arms, which became effective in 2011, demonstrates our steadfast commitment to that endeavor and serves to additionally confirm our country's balanced and serious attitude toward performance of the duties of disarmament and arms control.

Russia maintains a constructive dialogue with all political forces and social movements that advocate further reduction of the nuclear threat. We follow with interest the activities of the Luxembourg Forum, which brings together many authoritative political actors and experts.

I hope you have a meaningful discussion and achieve success in the search for new ideas that will make it possible to strive forward together toward the common goal of building a secure and stable world.



WELCOME ADDRESSES

**Viatcheslav KANTOR, Ph.D.**

President of the International Luxembourg Forum
on Preventing Nuclear Catastrophe (Russia)

Dear Mr. Nikel, dear colleagues, dear friends! I wish to thank our guests of honor, the members of the International Advisory Council and the Supervisory Council of the International Luxembourg Forum on Preventing Nuclear Catastrophe who are taking part in our Anniversary Conference at this difficult time.

As you know very well, the Forum was formed five years ago, in 2007, per decision of a conference in Luxembourg that bore the same name. Fifty-seven of the most well-known and authoritative experts from fourteen countries formed the Forum's International Advisory Council.

The principal tasks of the Forum have been defined as follows: analysis of threats associated with the proliferation of nuclear weapons and nuclear materials; development of specific proposals and recommendations for future directions in reductions of nuclear weapons; strengthening of nuclear and missile non-proliferation regimes; counteraction of attempts by unstable regimes and terrorist organizations to acquire nuclear weapons and nuclear technologies; and resolution of the Iranian and North Korean nuclear crises.

Reducing nuclear threats is considered in direct connection with the balance of conventional weapons, the development of high-precision weapons, and the prospects of international cooperation in the area of missile defense.

Over the past five years, significant events have occurred in the world in many areas. The world has been shaken by economic crises that are still in progress. The military and political state of affairs is characterized by complex turbulence. Revolutionary processes in the Middle East and Northern Africa have substantially changed the political landscape both within those regions and beyond them. All of these events and continuing processes undoubtedly influence, both directly and indirectly, the resolution of many of the nuclear non-proliferation problems that fall within the immediate purview of the Luxembourg Forum.

The world's states, and primarily the leading states, influence the entire spectrum of international processes that I have mentioned in various ways. This is where I consider it necessary to emphasize the point that it is not by mere chance that we chose the capital city of the Federal Republic of Germany to hold our Anniversary Conference. It primarily relates to the continuously growing importance of the role that the Federal Republic of Germany is playing since a number of European heads of states recently changed.

From the time the Luxembourg Forum was formed in May 2007 to the present, fourteen conferences, seminars, and workshops have been held in Washington, Moscow, Luxembourg, Rome, Vienna, Geneva, and Stockholm. Upon the conclusion of each meeting, specific proposals for the solution of the most pressing nuclear security problems have been presented to the leaders of the leading states and the leadership of the chief international organizations (i.e. the UN, IAEA, NATO, CSTO, OSCE, and others). Almost all of the addressees of the Luxembourg Forum's proposals took them into consideration. This fact is attested to in their replies to the Luxembourg Forum.

Each year in December, the members of the Forum's Supervisory Council, which includes such internationally known, prominent political actors and scholars as Samuel Nunn, William Perry, Hans Blix, Rolf Ekeus, Roald Sagdeev, Nikolay Laverov, Igor Ivanov, and Gareth Evans, evaluate the Forum's operations over the past year and recommend a program for further action.

The Luxembourg Forum's first declaration in May 2007 noted, first of all, that the most serious threat in the foreseeable future relates to the possibility

that terrorist organizations could obtain access to nuclear explosive devices or other nuclear materials. The second most acute problem is that states were unsatisfactorily performing their obligations related to non-proliferation, and that the measures available to compel states to perform their non-proliferation obligations are too weak. This has to do with the lack of a commitment on the part of nuclear states to their obligations of nuclear disarmament and their continuing reliance on nuclear deterrence, as well as their abandonment of the nuclear arms restriction and nuclear disarmament processes.

In this connection, the participants of the Luxembourg conference noted that unprecedented challenges have been made to the nuclear weapons Non-Proliferation Treaty and the non-proliferation and disarmament programs established by that Treaty.

It is true that real progress has been achieved over the past five years in addressing the problem of nuclear weapons non-proliferation and nuclear disarmament. The greatest accomplishment in this area was the signing of a new treaty for the reduction of strategic arms between the United States and Russia in 2010 and the entry of that treaty into force in 2011. That treaty had been recommended as necessary on multiple occasions in the declarations of Luxembourg Forum conferences and workshops. This treaty marked the end of a long period of stagnation in the processes of reducing nuclear weapons and became the chief factor in the reset in relations between the United States, Europe, and Russia. It is also true that we noted that it is a rather modest step on the way to reducing nuclear weapons, and we recommended specific steps to proceed further in that direction. Nevertheless, the new treaty played an important role in the results of the review conference on the nuclear weapons Non-Proliferation Treaty. Without the treaty, the results of the review conference would most likely have been negative.

Our declaration of five years ago recommended entering into consultations with the United Kingdom, France, and the People's Republic of China regarding their participation in the process of limiting nuclear arsenals in a way that would be acceptable to them, as well as their participation in transparency and confidence-building measures between the United States of America and the Russian Federation.

At the end of last year, and particularly this year, our recommendation further influenced the positions of Russian, American, and European officials, the Russian and American Academies of Sciences, and authoritative international organizations. Proposals have been made to begin consultations primarily with the United Kingdom and France for the purpose of undertaking part of the transparency measures that apply to the United States and Russia under the New START Treaty in relation to each country's nuclear potential. If the process is successful, then it is possible that China will join it as well. This is important, because there is more about the status of China's nuclear weapons and its nuclear technologies development program that is secret than about any of the other four official members of the so-called nuclear club. We had previously recommended, and continue recommending in each of our declarations, the initiation of international negotiations on a code of conduct for the peaceful use of outer space and on the problems of outer space security. Certain shifts in this direction are happening, but they are still clearly insufficient. Without a positive resolution of this problem, it will be difficult to expect that strategic stability will be maintained.

As I already said, in Luxembourg we expressed concern regarding the sustainability of the Non-Proliferation Treaty in connection with the nuclear crises in Iran and North Korea. I have our statement from five years ago in front of me now. It says, "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."

We may now assert that the Iranian nuclear crisis has significantly escalated over the past five years. According to the IAEA's data from February, Iran has tripled its production of enriched uranium that may be used for the creation of nuclear weapons. The process of uranium enrichment at Natanz and other nuclear facilities is proceeding at an accelerated rate. By now, Iran has managed to enrich 110 kg of uranium to the 20 percent level. It is possible to extract weapons-grade uranium from this amount in less than a year. Because of the fruitless negotiations, Iran has come five years closer to the creation of nuclear weapons. The negotiations between Iran and six other countries that concluded at the end of May have once again failed to bring about a resolution of the crisis. Iran's apparent pliability in the talks comes not from sanctions imposed under UN Security Council resolutions, but from the much harsher sanctions imposed unilaterally by the United States and the countries of Europe. Therefore, in order to maintain hope for a peaceful resolution of the problem, it is necessary not only to leave the sanctions in place, but to intensify them. As it has previously, Iran will seek to delay the negotiations process and thereby will gain time to carry forward its nuclear program.

We have come to the point where Iran is about to cross the red line, after which the only remaining recourse will be to apply article 41 of the UN Charter, up to and including a financial and economic blockade. I am convinced that if the talks continue, the proscription should not be loosened to a 20 percent level of uranium enrichment. It is necessary to demand full compliance with all of the UN Security Council resolutions that require a halt to any and all uranium enrichment, even to a 3.5 percent level. A retreat from this demand would mean an unprecedented subversion of the authority of the UN Security Council.

In the 2007 declaration we wrote that because of the growing threat of nuclear terrorism, more intensive and larger-scale preventive measures are needed without delay in order to improve the reliability of physical protection, accounting, and verification systems for fissile materials throughout the world, as well as to accelerate the disposal of highly-enriched uranium by transforming it into low-enriched uranium and using it for peaceful purposes, based on the positive experience of agreements between the United States and Russia.

It is also necessary to take additional measures for the protection of nuclear power plants, research reactors, and nuclear weapons storage facilities. Work in this direction has been proceeding with a relatively positive degree of success, mostly because of international cooperation. Further steps to reduce the strategic nuclear armaments of Russia and the United States are connected with the resolution of the problems of cooperation on European missile defense and verification of non-strategic nuclear weapons.

The barriers in the way of cooperation on missile defense are well known. Here I can only note that the Forum's experts maintain a certain optimism about the prospect of achieving a compromise based on the recent work of the Institute of World Economy and International Relations and the Euro-Atlantic Security Initiative that presents versions of the architecture for a European missile defense system and confidence measures that can generally be agreed upon by Russia, the United States, and NATO and that would be able to open the door to closer cooperation in this area.

Unlike strategic arms, the prospect of limiting and controlling non-strategic nuclear weapons involves an entire set of new transparency issues and opportunities to conclude treaties in this area. However, it is still early to speak of this. At present we can only conceive a process of consultations in stages between the United States and Russia.

During the first stage, the parties could exchange data on the non-strategic nuclear weapons that were destroyed in furtherance of the initiatives of the early 1990s, including data on the ownership and quantity of weapons.

During the second stage, Russia and the United States could exchange information by turns, on the basis of agreed or unilateral initiatives, first about the general quantity of non-strategic arms, and then about the locations where they are stored, the quantities of each type of weapon, the quantities of weapons in active reserves, and the quantities scheduled for disposal.

During the third stage, the consultations would continue, and initiatives agreed upon could be implemented and partially verified.

If the tasks of these stages are successfully performed, it will be possible to consider the prospects of a full-scale treaty for the restriction and control of non-strategic nuclear weapons.

I do not intend to enumerate all of the tasks that we resolved and will continue to resolve in the near future, including the entry into force of the Comprehensive Nuclear-Test-Ban Treaty and the Fissile Material Cut-Off Treaty, the expansion of the group of states that have signed and ratified the 1997 Additional Protocol to the Non-Proliferation Treaty, and others. Over the last five years, we have constantly analyzed these tasks and presented corresponding recommendations for accomplishing them. I am certain that at the Anniversary Conference we will once more discuss the current status of most of the problems of nuclear non-proliferation.

In conclusion, I consider it necessary to express my profound gratitude to the members of the Forum's Supervisory Council and International Advisory Council for the great work they have done over the past five years. Most of our experts not only actively and directly participated in the Luxembourg Forum's programs, but also in the work of many other authoritative international organizations and official structures, which made it possible to fully charge our regular declarations with specific and appropriate recommendations on the problems of nuclear non-proliferation. I am convinced that our work has, to a great extent, facilitated the achievement of the decisions and results that the Luxembourg conference initially aimed for.

I wish conference participants new creative successes, and I thank you for your attention.



Rolf NIKEL, Ambassador

Commissioner of the Federal Government for Disarmament
and Arms Control (Germany)

President Kantor, excellencies, ladies and gentlemen! As the Commissioner for Disarmament and Arms Control of the German government I take the choice of Berlin for the Anniversary Conference of the Luxembourg Forum not only as an appreciation of Berlin's qualities as a meeting place and a place of cultural interest, but also as an acknowledgement of Germany's commitment and contribution to resolving today's problems of nuclear non-proliferation.

For Germany, supporting a strong and effective global non-proliferation regime is a key element of a preventive national security policy. In response to the very serious dangers we have to face today in this area, we are fully committed to an agenda that combines a rigorous drive to strengthen international non-proliferation instruments, to hold countries that violate their non-proliferation obligations accountable, and to reinforce nuclear security world-wide, with the objective of a world free of nuclear weapons and concrete steps in that direction.

We see non-proliferation and nuclear disarmament as two sides of the same coin: Only if nuclear disarmament advances, will the global non-proliferation regime be credible and sustainable. Without a working non-proliferation regime, there will be no readiness to reduce nuclear arsenals.

This is why Germany is playing an active role in supporting both objectives. Let me give just a few examples of where we are actively contributing to global and regional efforts.

We remain determined to address proliferation risks. As a member of the E3 + 3, we are in particular engaged in the Iranian nuclear issue. In April, the E3 + 3 talks with Iran in Istanbul reopened negotiations on a diplomatic solution to the Iranian nuclear program. We aim at a sustained and intensive process of serious dialogue that must soon lead to concrete confidence-building measures based on reciprocity. In Bagdad, for the first time since 2006, we entered into talks on substance and presented a detailed package of confidence-building measures and incentives. We are sticking to our dual-track approach: we are exploring all options for a negotiated solution, but at the same time we have to keep up the option of further sanctions.

The North Korean nuclear issue also remains a serious concern for us. Here again, we see effective targeted sanctions as a useful political tool. Among other things, we have taken the lead among EU partners in the UN Security Council for new sanctions designations and have contributed to a swift and clear response from the UN Security Council to the recent missile launch. On the other hand, given our own historical experience, we have also repeatedly offered our good services to facilitate any kind of political détente on the Korean peninsula. Among others, we have repeatedly hosted Track 2 talks between North Korea and the United States — the latest of which took place in March of this year.

We are determined to strengthen the instruments of the global non-proliferation regime. Together with nine other countries from across the globe Germany has formed the "Non-proliferation and Disarmament Initiative," which has formulated concrete proposals for action, based on the commitments made by the members of the Non-Proliferation Treaty. These proposals have been presented at the recent first meeting of the Preparatory Committee to the 2015 NPT Review Conference. With our proposals on increasing the transparency of nuclear arsenals and on finding ways to finally start the long overdue negotiations on a fissile material cut-off treaty, and our endeavors to promote universal adherence to the CTBT and to the IAEA Additional Protocol, we are working toward tangible progress in the multilateral arena.

Here in Europe, we are determined to get rid of remnants of the Cold War such as the non-strategic or tactical nuclear weapons that are still based

in some NATO countries and in Russia and are not covered by any formal arms control arrangements. For that reason we are working toward putting tactical nuclear weapons firmly onto the agenda of the future nuclear disarmament process. At the suggestion of Germany and some of its partners at its recent Chicago summit, NATO made an offer to Russia to engage in a dialogue on confidence-building and transparency measures, with the objective to prepare the ground for future reductions of these weapons on both sides. We believe such a dialogue can be instrumental in providing a clearer picture of where we currently stand regarding numbers, storage, safety and security aspects, and matters of doctrine related to these weapons. Improving mutual transparency and strengthening confidence on each others' motives and intentions could greatly facilitate future U.S.-Russian talks about actual reductions in a follow-on process to New START. We intend to discuss this very thoroughly with our Russian partners in the coming months. Our Russian partners should know: we remain committed to building a security partnership with Russia, not only because security in Europe is indivisible, but also because we need to join forces to address the new and emerging security threats together.

This includes our continued commitment to cooperation with Russia on missile defense, which is part of our response to the emerging threats and not directed against Russia. Threats emanating from the proliferation of ballistic missiles are our common concern. Consequently, it is only logical to work together and find ways and means to counter these threats. We might differ in our approaches but I believe that we share the same conviction: prevention is the best tool at our disposal in order to meet these challenges. Missile defense is part of a toolbox, and we should spare no effort in order to identify and implement options for cooperation in missile defense. Only recently, NATO Allies and Russia took part in a joint MD-exercise in Germany. While this might not be the breakthrough, the exercise was meant to build trust and transparency. Germany continues to believe that a viable arrangement can be found. We do know that cooperation can be possible on the basis of closely coordinated command structures. We need to evaluate the findings of our last joint exercise, build upon them, and identify further possibilities for transparency and confidence-building, such as

the establishment of joint MD Centers. Missile defense would be an opportunity for close cooperation with Russia that should not be dismissed. It is certainly not meant to split partners who strive for an effective security architecture in Europe. I am fully aware that this process is time-consuming and possible solutions have to meet the interests of all parties concerned. However, it is worth all our efforts.

It also includes the modernization of the conventional arms control architecture in Europe. Here the issue is no longer quantitative ceilings — we are well below the limits fixed in the CFE Treaty of 20 years ago — but confidence-building and transparency on operational capabilities. Arms control built on these principles remains necessary to ensure security and stability in Europe.

My recent talks in Moscow have convinced me that there is a reciprocal interest on the Russian side to engage in a serious dialogue on all these issues. I am fully aware that these issues are not isolated from each other and that a comprehensive view is necessary if we want to achieve progress on each individual track — nuclear disarmament, conventional arms control, and missile defense.

Last, but not least, let me briefly touch upon one of the so-called “emerging challenges”: outer space is no longer the distant “final frontier” — space-based activities have become an essential part of our daily lives (e.g. GPS). They are also ever expanding, which potentially puts the safety, security, and sustainability of outer space activities at risk. Moreover, we must prevent space from becoming a venue for an arms race and armed conflict. Given the current circumstances, in particular the lengthy standstill of the Conference on Disarmament, we believe that an incremental approach with transparency and confidence-building measures as a first step can best respond to these challenges. We therefore fully support the EU initiative to develop an “International Code of Conduct on Outer Space Activities.” We see it as providing a rapid, pragmatic answer to these pressing questions. We hope that the Code will find broad adherence when being put up for signature at an ad-hoc diplomatic conference, most likely in 2013.

I am convinced that initiatives such as the Luxembourg Forum have an important role in fostering the dialogue we need. This meeting brings

together a treasure of personal knowledge and experience of so many distinguished experts and decision-makers from governments, academia, and think tanks who are all ready to think outside the box. Albert Einstein once said that the unleashed power of the atom has changed everything save our modes of thinking and we thus drift toward unparalleled catastrophe. The “International Luxembourg Forum on preventing nuclear catastrophe” is precisely the kind of forum to mobilize new thinking and apply it to the security challenges ahead. I wish us all a stimulating debate and all participants who traveled to Berlin an enjoyable stay in our capital.



Nikolay LAVEROV, Academician (RAS)

Vice President of the Russian Academy of Sciences, Member of the Supervisory Council of the International Luxembourg Forum (Russia)

Dear President of the International Luxembourg Forum and participants of the Anniversary Conference! First of all, I would like to thank the organizers of the Conference for giving me the opportunity to speak on topical issues of nuclear security, nuclear arms reduction, and sensitive materials and technologies in nuclear power generation. On behalf of the leadership of the Russian Academy of Sciences, to all Conference participants who are actively involved in the resolution of these important problems I wish success and the development of constructive measures and proposals for the search for new ideas that will deepen the mutual understanding between leaders of countries and the nations of the world.

I must note that the joint committees created within the Russian Academy of Sciences and the United States National Academy of Sciences (NAS) have been constantly working for many years on the problems of the non-proliferation of weapons of mass destruction, nuclear materials, and sensitive technologies, as well as the physical protection of related production facilities. Within the Committee on International Security and Arms Control there has been an active search in recent years for acceptable solutions, not only in the area of nuclear disarmament and arms control, but in the development of new technologies that are appropriate for the peaceful use of nuclear power. Each year, conferences and seminars are held on this subject, and various types of analytical materials are published. There can

be little doubt that the majority of the conference's participants are familiar with their conclusions and recommendations. I am certain that all of this is done for the purpose of preventing a nuclear catastrophe!

The leadership of the Russian Academy of Sciences shares the opinion of the president of the International Luxembourg Forum that the signing and ratification of New START by the Russian Federation and the United States have inspired the proponents of reducing nuclear weapons not only in Russia and America, but in Europe and the rest of the world as well. Thanks to New START (which was signed in Prague), a summit of leading world states was held in 2010 on the security of nuclear materials and technologies. The next stage in this direction was the Seoul Nuclear Security Summit, which was held in March of this year. The Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons was a success. The Agreement between the Government of the United States of America and the Government of the Russian Federation for Cooperation in the Field of Peaceful Uses of Nuclear Energy (also referred to as the Russia 123 Agreement) has entered into force.

A number of factors testify to the historic uniqueness of this Agreement. This primarily consists of the lowest quantities in the last forty years of functionally deployed weapons and strategic delivery vehicles for the two countries: 1550 and 700, respectively. These levels are significantly lower than those in START (signed in 1991) and in the Strategic Offensive Reductions Treaty (signed in 2002). By 2020, after fulfilling the conditions of New START, the strategic arsenals of the two states, in terms of the number of actually deployed weapons, will be reduced by approximately 80 percent. That is a significant success in the process of nuclear disarmament. The prospects for the future disarmament process will for the first time be determined mostly by problems that stand apart from the question of the strategic offensive arms balance between Russia and the United States. The process of future nuclear disarmament and strengthening of the Non-Proliferation Treaty will depend upon the solution of those problems and related programs and mechanisms.

Among these problems, the following three should be specifically identified for their degree of importance: problems associated with the

development of new missile defense systems, problems associated with the search for technical solutions for the reduction of tactical nuclear weapons, and the nuclear arms of third countries. There can be no doubt that the development of new missile defense systems is being spurred by the continuing proliferation of missiles and missile technologies in the world, as well as nuclear weapons in a number of cases. Approximately thirty countries are actively working in this direction, and there are no insuperable technical barriers to significant growth in the range of ballistic missiles. In this sense, this problem is truly attaining quite acute significance. In the spirit of the reset in Russian-American relations in 2008-2010, the intent to cooperate in the development of missile defense systems was expressed within the NATO-Russia Council. However, that intent has yet to be translated into action. Instead, contradictions related to other topical problems of international security are intensifying. It is difficult to find a constructive direction in the current format of interaction between Russia and NATO. We have not managed to find a way of equitable cooperation between the two main defense systems, i.e. the European missile defense system and the Russian aerospace defense system. The aerospace defense system has basically become the highest military policy priority for our country. This is distinctly apparent in the State Armaments Program to 2020, which contemplates the large-scale deployment of state-of-the-art missile defense technologies, the creation of a new control system, and the integration of air defense, missile defense, and outer space control systems into that new control system. In this connection, I would like to remind the participants of the Conference that at the beginning of May of this year various progressive elements of Russia's new missile defense system were convincingly demonstrated to specialists from a number of countries and attracted great interest from the broad international public. In our opinion, this step facilitates the search for new solutions to the missile defense problem.

Unlike Russia, the United States and its allies have recently been raising the problem of reducing tactical nuclear weapons. They propose restricting the quantity of both strategic and tactical nuclear weapons kept in each country's respective arsenals. The problem of tactical nuclear

weapons remains very complicated, and in our opinion it is expedient to begin discussion of this subject by defining the topic of possible negotiations. This issue will be taken into consideration in Moscow in the fall at a meeting of the Committee of the Russian Academy of Sciences and the U.S. National Academy of Sciences on International Security and Arms Control. Individual approaches to the resolution of this issue may be considered within the framework of our Conference.

Another problem that deserves attention relates to so-called third countries. Thus, besides the United States and Russia, there are seven other countries that possess nuclear weapons: China, France, India, Israel, North Korea, Pakistan, and the United Kingdom. Ballistic and cruise missiles of varying ranges are used as the delivery vehicles for these weapons, as are aerial bombs dropped by strike aircraft. It is obvious that Russian territory is located within striking range of nuclear weapon delivery vehicles not only from the United States, but from all of the rest of the nuclear states as well. Iran is a source of additional uncertainty in terms of nuclear choice. Furthermore, none of the nuclear states is, in formal terms, a military and political ally of the Russian Federation. The situation of the United States is completely different. The only states that are capable of delivering a nuclear strike against U.S. territory are Russia and China. All of the other nuclear states are either U.S. allies or do not have delivery vehicles with a sufficiently long range.

So far, multilateral nuclear disarmament has been restricted to important, but rather general, programs: the Non-Proliferation Treaty, the Comprehensive Nuclear-Test-Ban Treaty, agreements restricting military activity in outer space, and treaties that establish zones free from nuclear weapons (including Antarctica, Central Asia, Latin America, and the southern part of the Pacific Ocean). It is now necessary to expand the format of the talks on this subject matter. It is still unclear when the time will come to involve other countries in the nuclear disarmament process. The questions remain of which countries must join this process, in what order, in what format should negotiations be held, and on what conceptual basis (e.g. parity, stability, the status quo, distribution of quotas, or counting rules). Finally, what possibilities do third nuclear countries have to exchange

corresponding military and technical information in the area of nuclear arms control? As a preliminary matter, I may note that serious talks on restricting nuclear weapons are not meant to be symbolic. They are a prime element in the military-strategic relations between leading world states. Therefore, in order for the parties to conclude appropriate agreements, well defined strategic relations between the states must be established. Such relations currently exist between Russia and the United States in the form of mutual nuclear deterrence. However, such relations do not apply to all nuclear states.

The strategic relationships that France and the United Kingdom have with Russia are also built on the basis of mutual nuclear deterrence. There are similar relations between the United States and China, and latently between Russia and China. However, in the latter case, the existing triangle (i.e. Washington, Moscow, and Beijing) is not isosceles — either in terms of the level of strategic nuclear arsenals, or in terms of the political remoteness among the states. Finally, there exist two unacknowledged nuclear states on opposite ends of Eurasia: Israel and North Korea. They can hardly become formal participants in talks on nuclear disarmament with anyone at all. If their nuclear weapons ever become the subject of international agreements, then that will most likely occur within the framework of a solution of regional security problems involving conventional weapons and the resolution of political, economic, territorial, and domestic conflicts.

As a whole, compared to Russia and the United States, the nuclear balance of third countries is deeply embedded within the regional context. As a result, the balance of general-purpose forces in these regions will prevail over nuclear disarmament to a greater extent than in START talks between Russia (the USSR) and the United States.

I consider this issue to be an important one, since it is rarely discussed during the course of international conferences, and we are not giving it attention here, either. I hope that in the future this problem will also be the subject of discussion at one of the Luxembourg Forums!



Igor IVANOV, Corresponding member (RAS)

President of the Russian International Affairs Council, Member of the Supervisory Council of the International Luxembourg Forum, former Russian Minister of Foreign Affairs, Secretary of the Security Council of the Russian Federation

Dear Viatcheslav Vladimirovich, ladies and gentlemen! It is a great honor to speak in Berlin at the Anniversary Conference of the International Luxembourg Forum on Preventing Nuclear Catastrophe. I think that our discussion of the issues of international security is extremely topical, and the place we are holding this conference is deeply symbolic.

There are few cities in the world whose fate took shape so dramatically and tragically as the fate of Berlin in the 20th century. Members of the older generation still remember the Berlin crises of the middle of last century. Berlin, which was divided for such a long time, was a symbol of the world divided, and the fall of the Berlin wall is usually presented in history textbooks as marking the end of the Cold War and the beginning of a new period of world politics.

Looking out from Berlin at the current security situation in the world, it is, unfortunately, impossible to avoid a sense of disappointment. The hopes for a new world order, a world without wars and conflicts, a harmonious combination of the interests of security, economic development, and human rights have not yet justified themselves in the new century. I would take the liberty of asserting that the level of manageability of world politics has had a tendency to decline. The imbalance in international relations both at the regional and at the global levels is growing.

All of us, both in the West and the East, in the North and the South, live in conditions of growing uncertainty and increasing risks. For example, no one will attempt at present to confidently predict what will happen with world finance, not only in the coming months, but even in the coming weeks. It is likewise very difficult to predict long-term and even short-term consequences of the Arab Spring for the Near East and Middle East. As yet, we have a poor conception of how to approach cyber security issues and how to solve the problems associated with the sharp increase of global migration processes.

Today humanity confronts fundamentally new security challenges, and, as previously, we are poorly prepared for them.

And yet, against the backdrop of the multitude of international security issues, problems, and challenges, the nuclear dimension remains practically the most important one of them. That dimension is not a new one. Nuclear weapons have existed since the middle of the 20th century. Since then, efforts have been undertaken to prevent their distribution, lessen the threat of nuclear war, reduce nuclear weapons arsenals and delivery vehicles, and ideally, eliminate them entirely.

What are the results of our efforts? Can we declare victory over the nuclear threat, or are we compelled to admit an overall defeat?

From my point of view, the situation with nuclear weapons and the danger that they may be used today looks ambiguous, to say the least. On the one hand, the Cold War between the East and the West has long ago ended. A new generation of people has grown up since then. Whatever journalists and politicians who are carried away by their own imaginations may say, a second Cold War is not expected in the foreseeable future. Thus, the threat of a world nuclear conflict today is an order of magnitude lower than it was thirty or fifty years ago.

Russia and the United States are consistently cutting back their nuclear arsenals. Two years ago, we successfully signed New START, which signified an important milestone in the history of strategic relations between Moscow and Washington.

I just returned from Washington, where you sometimes hear opinions like, "Who benefited the most from the reset in Russian-American relations? What should the next administration do: continue this policy or suspend it?" I think that, in the context of the Russian-American dialogue on nuclear issues, the very fact that the discussion of the "reset" is conducted in such terms as "reset" is not only harmful, but dangerous for the efforts of the international community to prevent a nuclear threat.

Nobody ever simply gives gifts in the process of diplomatic relations. The signing of New START was neither a gift from Russia to the United States nor a gift from the United States to Russia. Both countries gained from it, as did the international community as a whole. In this connection, I believe it is important for international social organizations to adhere to a firm position and denounce politicians who speculate on these things on the basis of their own conjunctural interests or selective goals. It is harmful both to our states and to the efforts of the international community on nuclear issues.

There will be no progress in the area of nuclear security if a real partnership between Russia and the United States is not established. This is an axiom, that is to say a perfectly obvious thing. Therefore, interaction and mutual understanding between Moscow and Washington is a prerequisite for any success in international cooperation in this area.

Therefore, New START is just the beginning of the process following the end of the Cold War, and this process must be continued, independent of the results of the presidential election in the United States and any other political or other phenomena in Russia. Only then can Russia and the United States be leaders together in this important process in the 21st century.

However, I must acknowledge that everything I said previously was just one side of the observable picture. The other side provides substantially less of a basis for optimism. I must admit that we have not yet solved the problem of nuclear weapons proliferation. The number of members of the so-called nuclear club is, unfortunately, growing, however at a modest rate. In particular, the

nuclear programs of Iran and North Korea are a serious challenge to the international community. If we do not succeed in finding a solution to this problem within the framework of the existing norms of international law, then the very existence of the nuclear weapons non-proliferation regime will come into question, with all of the attendant consequences.

The danger of nuclear terrorism likewise persists. The opinion of the majority of specialists is that progress in the development of nuclear technologies exacerbates this threat.

The current conflict between Russia and NATO on the issue of the creation of a European missile defense system clearly demonstrates that even today, more than two decades after the end of the Cold War, the old logic of the nuclear standoff continues, as previously, to have a profound impact on the minds of politicians and experts.

It is obvious that the inability to achieve a decisive breakthrough on nuclear issues is having a negative impact on our ability to reach agreement in other areas as well, from regional conflicts to economic cooperation. The perpetuation of an atmosphere of mistrust, suspicion, and a commitment to old conceptions about where the basis of international security lies — all of this baggage left over from the previous century hinders our advancement and our ability to solve the truly important tasks that confront us in the new century.

Sometimes journalists ask, "What is the main problem that prevents us from moving forward today?" During the Cold War years, it was all clear: ideological incompatibility and a standoff between military and political blocs. Today, it is mistrust. The question arises of how to overcome that mistrust. It is impossible to do it with slogans and beautiful documents. There must be joint work on specific problems that interest all parties.

As you know, in May 2002 in Moscow Presidents Vladimir Putin and George W. Bush signed the Russian-American declaration. The first paragraph of the document declares that we are no longer enemies, but rather strategic partners. It is on the basis of strategic partnership that we will resolve all of the other issues. But what form is

our strategic partnership to take? Unfortunately, this question did not translate into practical action.

I believe that mistrust can be overcome only through daily practical activity. I am deeply convinced that our main nuclear security problems consist neither in a lack of any kind of organization (including institutions and documents), nor in a lack of new ideas. New ideas are constantly being generated both among politicians and among experts. My personal opinion is that the main problem is a lack of a common strategic vision and a deficit of political will and the necessary insistence.

The Germans have an old saying, "Where there's a will, there's a way." When there is sufficient political will, even tasks that seem insoluble from the viewpoint of detached skeptics can be resolved. Thus, we have already spoken about New START. There was so much lamentation that this problem was impossible to solve. However, a political decision was made on the presidential level. Ten months later, experts prepared a document. It was signed and ratified. New START is currently effective. This is a specific example of how objectives that appear complicated can be achieved when the necessary will and desire are present. Can we use such an approach in solving other nuclear security problems? I think that we can.

In conclusion, I would like to say a few words about the role of the institutions of civil society in matters of nuclear security and disarmament. It is commonly accepted that nuclear issues are the concern of a narrow circle of professionals, including civil servants and the employees of international organizations. When I was the Minister of Foreign Affairs of Russia, that is what I thought. However, it is very important to draw the correct lessons from one's own mistakes.

It is true that many of the issues being discussed in this area are of a technical character. A significant part of the information that relates to national security issues is inaccessible to the public at large. Nevertheless, the role of civil society in solving the problems of nuclear security can hardly be overstated.

First of all, it is the institutions of civil society, including independent research centers, professional associations, and expert communities, that, as a rule, originate the innovative ideas and proposals that government bureaucrats frequently lack. An indicator of this is what the International Luxembourg Forum has done over the past five years.

Second, civil society is capable of exerting constant pressure on political leaders and refusing to allow them to set aside the problems of nuclear security and gamble on the assumption that society is not interested in it.

Third, international cooperation among civil society institutions is, in essence, the only way to overcome the disbelief and mutual suspicions arising from the past and achieve mutual understanding on fundamental issues.

By the way, the border between the government and civil society sometimes appears to be drawn arbitrarily. As an example, I want to refer to the recent statement of European leaders before the Chicago NATO summit. This document, which I see as a very contemporary one, in particular calls upon the U.S. government to unilaterally reduce by half its non-strategic nuclear weapons potential in Europe and activate dialogue between NATO and Russia on nuclear security.

The International Luxembourg Forum on Preventing Nuclear Catastrophe occupies a special place among the international non-governmental organizations that actively contribute to strengthening the nuclear non-proliferation regime. By uniting leading world experts in the field of nuclear weapon and delivery vehicle non-proliferation, as well as the non-proliferation of nuclear materials, the Luxembourg Forum has become an authoritative tribune on the key problems of nuclear security. Its opinion is respected and its proposals are in demand. We need such coalitions of politicians, experts, public figures, journalists, and business leaders in order to achieve a decisive breakthrough in the issues of ensuring nuclear security.

I would like to extend special thanks to Viatcheslav Vladimirovich

Kantor, who initiated this movement. Thanks to his energy, this movement is actively integrating itself into international efforts in the area of nuclear security. I want to say that this is a good example for many other representatives of Russian big business.

Business and security today are inseparable. It is impossible to speak of sustainable development without a serious conversation on security. As long as there is no stability in the world, it will probably be much more difficult to speak of business flourishing in individual regions.



Jayantha DHANAPALA, Ambassador

President of Pugwash Conferences on Science and World Affairs,
former United Nations Under-Secretary-General for Disarmament
Affairs (Sri Lanka)

My thanks to the Luxembourg Forum on Preventing Nuclear Catastrophe for the invitation to return to your influential discussions and stimulating exchange of ideas on global security, with which I have been associated since 2007. This year we meet in Berlin, a city which symbolizes the end of the Cold War. On June 26, 1963, here in Berlin President John F. Kennedy spoke the famous words: "Ich bin ein Berliner," identifying himself with the people of this city. Last year, the Pugwash Conferences on Science and World Affairs held a major conference in Berlin and the Pugwash Council Statement on that occasion concluded by stating; "The Pugwash community draws inspiration from the positive legacy of the city of Berlin and looks to a future where we continue to create peace and security through dialogue and cooperation. If walls can come down here, there is hope for those who struggle elsewhere, that it is possible to create common ground and a more secure world for future generations."

By committing ourselves to breaking down the walls that separate us we convert ourselves into being Berliners. The imperative to do so to avert the impending catastrophes of a nuclear war and of climate change is urgent. Common security, sustainable and inclusive development, and human rights are inextricably interwoven. Poverty defaces the human condition. 925 million in the Bottom Billion of our world of 7 billion do not have enough to eat and 7.6 million children die each year from malnutrition. An

estimated 10.5 million refugees and 27.5 million Internally Displaced Persons are the human cost of conflict, generalized violence, human rights violations, and natural disasters. Hunger, disease, and poor housing and sanitation continue to afflict far too many of our fellow human beings.

Today physical walls and barriers continue to exist on the Korean Peninsula, in Guantanamo on the island of Cuba, in the occupied territories of Palestine, and in other places. Invisible walls and artificial barriers separate human beings in many other ways. They include the division between nuclear-weapon states and non-nuclear-weapon states, premised on the possession of the most destructive weapon of mass destruction invented and the only category of weapon of mass destruction (WMD) not to be outlawed yet. Walls, whether visible or invisible, prevent dialogue and understanding. Those who are committed to dialogue, as this Forum is, must strive to bridge differences both real and perceived so that we can tear down these walls.

There is also the danger of being trapped into a belief that the delicate gossamer of the hopes of a nuclear-weapon-free world, however beguiling that mirage may be, are a substitute for the hard reality of practical action to reduce and eliminate nuclear weapon arsenals. After all, yesterday's proponents of the elimination of nuclear weapons and the irrelevance of nuclear deterrence have become today's advocates of Cold War concepts of strategic stability based on nuclear arsenals much larger than 300 warheads plus missile defense. Beware therefore the false prophets and their rhetoric. Nine countries possess a total of approximately 19,000 nuclear warheads according to the SIPRI 2012 Yearbook, which was released today, of which 4400 are operational and nearly 2000 are on alert status. They have a lethal power countless times more powerful than the Hiroshima and Nagasaki bombs of 1945 — 95% of them in the possession of the United States and the Russian Federation. We are now promised another round of strategic arms limitation talks between the U.S. and Russia, following the modest 30% reductions achieved by New START, aimed at reducing arsenals to 300 warheads each. However, numerous obstacles lie ahead, not the least of which are the uncertainties

of the electoral process in the United States. Peace and disarmament in the world can never be held hostage to any nation's domestic political processes.

On January 10, 2012, I participated in the decision of the Bulletin of the Atomic Scientists to advance its Doomsday Clock one minute closer to midnight. Our reasons were set out as follows: "It is five minutes to midnight. Two years ago, it appeared that world leaders might address the truly global threats that we face. In many cases, that trend has not continued or been reversed. For that reason, the Bulletin of the Atomic Scientists is moving the clock hand one minute closer to midnight, back to its time in 2007."

The agenda for disarmament and in particular, nuclear disarmament, contains a welter of unfinished business. That situation jeopardizes the future of the NPT. The proposed conference on the WMD-free zone in the Middle East must be held this year as a start of a process. The CTBT has still to enter into force and the U.S. administration must ensure its ratification by the U.S. Senate, paving the way for the other seven countries to follow their example. In Geneva, the single multilateral negotiating forum, the Conference on Disarmament (CD), is going into a second decade of paralysis. It is simplistic to blame one country for that state of affairs when there are so many topics crying out for negotiations immediately, if only the membership agreed to do so. Some 200 NATO tactical nuclear weapons remain deployed in five countries in Western Europe, despite the declared policies of some of these countries and their public opinion. NATO-Russian relations have yet to address many difficulties that lie ahead and further U.S.-Russian nuclear reductions have to be negotiated, along with understandings on the deployment of Ballistic Missile Defense (BMD) systems. The NATO summit in Chicago did little to reduce the obstacles. According to the Bulletin of the Atomic Scientists, the BMD issue is more myth than fact, and I quote :

"A little-noticed report released in September 2011 by the Defense Science Board, an independent advisory committee to the US Defense Department, found three major problems with the Early Intercept Ballistic Missile Defense now being developed. Apparently, (1) none of

the necessary radars in the European Phased Adaptive Approach defense system are powerful enough to work, (2) none of the existing missile defense sensors can reliably distinguish among warheads, decoys, and other debris, and (3) US intelligence already has observed foreign ballistic missile launches that can deploy decoys and other countermeasures. So, after 27 years of development and \$150 billion spent, there still is no effective missile shield -- it is still a dream. From news of this report, we might conclude that the missile defense that we've all heard about for many years is now defunct. The system that Russia views as a threat to its security does not work, and, even if the problems could be remedied -- a big if -- the system would still not be operable for many years to come."

And yet, risks of a space war and cyber war remain ominous. The problems over the nuclear program of the Democratic People's Republic of Korea remain daunting and rumors of yet another test are afloat. Similarly with Iran, negotiations with the P5 + 1 have been inconclusive, while saber rattling by Israel and others, who assert that "no option" is left "off the table," threatens to engulf the entire region in a wider conflict with global consequences. Complicating all this is the persistent impact of the global economic crisis of 2007-2008 and the fact that amidst the Great Recession the world still spends about 100 billion USD on nuclear weapons.

Nuclear catastrophes can also be caused by the peaceful use of nuclear energy, as we have only glimpsed in the Three Mile Island, Chernobyl, and Fukushima disasters. Aggressive marketing by the nuclear power industry, where profit-making trumps public welfare, and deceptive justifications of nuclear power because of climate change cannot hide the need for higher standards of nuclear safety and security globally.

Civil society must maintain a clear-eyed vision of our goals of a nuclear-weapon-free world, which is the only certain guarantee of security and of non-proliferation. To that end the research that has recently been conducted is relevant. Let me give three examples.

First, a report released on March 5, 2012, by the International Campaign to Abolish Nuclear Weapons (ICAN) identifies more than 300 banks, pension funds, insurance companies, and asset managers in 30

countries with substantial investments in nuclear arms producers. The 180-page study, "Don't Bank on the Bomb: The Global Financing of Nuclear Weapons Producers," provides details of financial transactions with twenty companies that are heavily involved in the manufacture, maintenance, and modernization of U.S., British, French, and Indian nuclear forces.

The appeal to financial institutions to stop investing in the nuclear arms industry is similar to the campaign that brought down the structures supporting apartheid. Significantly, South African activist and Nobel Peace Prize winner Archbishop Desmond Tutu contributed the foreword to the report, in which he called on financial institutions to "do the right thing and assist, rather than impede, efforts to eliminate the threat of radioactive incineration," noting that divestment was a vital part of the successful campaign to end apartheid in South Africa. "Today, the same tactic can — and must — be employed to challenge man's most evil creation: the nuclear bomb. No one should be profiting from this terrible industry of death, which threatens us all," he wrote.

It is estimated that nuclear-armed nations spend in excess of 100 billion USD each year maintaining and modernizing their nuclear forces, according to the report. Much of this work is carried out by corporations such as BAE Systems and Babcock International in the United Kingdom, Lockheed Martin and Northrop Grumman in the United States, Thales and Safran in France, and Larsen & Toubro in India. Financial institutions invest in these companies by providing loans and purchasing shares and bonds.

Of the 322 financial institutions identified in the report, roughly half are based in the United States and a third in Europe. Asian, Australian, and Middle Eastern institutions are also listed. The institutions most heavily involved in financing nuclear arms makers include Bank of America, BlackRock, and JP Morgan Chase in the United States; BNP Paribas in France; Allianz and Deutsche Bank in Germany; Mitsubishi UFJ Financial in Japan; BBVA and Banco Santander in Spain; Credit Suisse and UBS in Switzerland; and Barclays, HSBC, Lloyds, and Royal Bank of Scotland in Britain.

The second important piece of recent research is what Reaching Critical Will — a project of Women's International League for Peace and Freedom — issued as a report in April this year entitled "Assuring destruction forever — Nuclear weapon modernization around the world." It is a well documented account of how all nuclear-weapon states are modernizing their weapon systems. In her Introduction Ray Acheson writes,

"Combined, the nuclear weapon possessors have spent approximately one hundred billion USD on their nuclear programmes. At this rate, they will collectively spend at least one trillion USD on nuclear weapons over the next decade. At the same time as they commit billions of dollars to their nuclear weapon arsenals, most of these states are simultaneously making significant cuts in their social welfare systems, such as health care, education, and childcare. This arguably constitutes a violation of human rights. Adequate resources are critical to the realization of human rights and several instruments of international law mandate the prioritization of human rights over militarism."

Finally, at the 12th World Summit of Nobel Peace Laureates held in Chicago, where I represented Pugwash in April this year, the International Physicians for the Prevention of Nuclear War released a report entitled "Nuclear Famine: A Billion People at Risk." The study shows that even a limited nuclear war, involving less than half of 1% of the world's nuclear arsenals, would cause climate disruption that could set off a global famine. Based on a scenario of 100 Hiroshima-sized bombs exploded in a war between India and Pakistan, the study estimated that 1 billion people, one-seventh of the human race, could starve over the following decade. Along with recent events, these findings require a fundamental change in our thinking about nuclear weapons. The study, in positing a war between India and Pakistan, shows the importance of understanding that smaller nuclear powers, not just the U.S. and Russia, pose a threat to the whole world.

Thus, scientific evidence continues to confirm empirically what we already know: that nuclear weapons are the most destructive weapon of mass destruction ever invented, with unrivaled genetic and ecological effects. And yet, unlike biological and chemical weapons, they have not been outlawed because of vested interests.

As long as nuclear weapons exist, others, including terrorists, will want them. As long as we have nuclear weapons, their use by intention or accident; by states or by non-state actors, is inevitable. Their total elimination through a Nuclear Weapons Convention is therefore the only solution.



Tariq RAUF, Ph.D.¹

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¹ My comments today should not be construed as representing the views of the IAEA — these are personal views for purposes of discussion.

At the outset, I would like to express my thanks to Dr. Kantor, President of the International Luxembourg Forum, and his team, for organizing this important conference and for the excellent arrangements.

Introduction

This year, in October, will mark the 50th anniversary of the Cuban missile crisis. October is a scary month for some — it's when Halloween falls. Typical Halloween activities include trick-or-treating, playing pranks, and telling scary stories; however, virtually all present Halloween traditions can be traced to the ancient Celtic day of the dead. For thirteen perilous days in October 1962, the world teetered on the brink of a nuclear catastrophe, as the U.S. and the Soviet Union squared off in the most serious nuclear crisis, which highlighted the exceptional challenges of getting accurate intelligence and credible assessments, the uncertainties of fast moving events, the shrinking of decision time, the building of pressures for military action in contrast to diplomacy, the dangers of military recklessness, and the critical importance of prudence and level heads at the top. Faced with reports about the deployment of Soviet nuclear-armed missiles in Cuba, President Kennedy wisely held off pressures for military action in favor of diplomacy, prevailed in achieving the removal of the missiles, and avoided a possible nuclear war.

Nuclear-Weapon-Free Zones

Shaken by the close call of the Cuban missile crisis and the specter of nuclear weapon deployment in their region, in April 1963, the presidents of five Latin American countries — Bolivia, Brazil, Chile, Ecuador, and Mexico — issued a statement, calling on their counterparts on the continent to unite to denuclearize their region. In November 1963, the UN General Assembly adopted Resolution 911 based on the central elements of the April presidential declaration and set in motion the process that led to the signing of the Treaty of Tlatelolco in 1967, establishing Latin America as a nuclear-weapon-free zone — the first in an inhabited part of the world.

The concept of establishing nuclear-weapon-free zones (NWFZs) in densely populated parts of the globe was thus conceived both with a view to reducing the role of nuclear weapons in international security and to preventing the emergence of new nuclear-weapon states.

Following the precedent set by Latin America and the Caribbean States, NWFZs have now been established in the South Pacific, Southeast Asia, Africa, and Central Asia,² through the South Pacific Nuclear-Free-Zone Treaty (Rarotonga Treaty, 1986), the Southeast Asian Nuclear-Weapon-Free Zone Treaty (Bangkok Treaty, 1995), the African Nuclear-Weapon-Free Zone Treaty (Pelindaba Treaty, 1996), and the Treaty on a Nuclear-Weapon-Free Zone in Central Asia (sometimes called the Semipalatinsk Treaty, 2006) respectively. More than 110 states are parties to NWFZs, and the entire Southern Hemisphere is covered by such zones. One NWFZ has even encroached into the Northern Hemisphere.

Article VII of the NPT endorses the principle of NWFZs. The UN General Assembly too has endorsed such zones as contributing to international and regional peace and security. The main difference between the non-nuclear-weapon state obligations under the NPT and those under NWFZs is that the zones prohibit the deployment of nuclear weapons belonging to a nuclear-weapon state (or anyone), whereas the NPT does not. Instead, the

² NWFZs have also been established in certain uninhabited areas — Antarctica (Antarctic Treaty), Outer Space (Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies) and the sea bed (Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea Bed and the Ocean Floor and in the Subsoil Thereof).

NPT prohibits the control, manufacture, or acquisition of nuclear explosive devices by the non-weapon state parties but not such deployment on their territory by NWS. None of the zones permit deployment.

Middle East

All states of the Middle East region³ except for Israel and South Sudan⁴ are parties to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and have undertaken to accept comprehensive IAEA safeguards.⁵

Discussions have shown that there still continues to be a long-standing and fundamental difference of views between Israel on the one hand, and the other states of the Middle East region, on the other hand, with regard to the application of comprehensive IAEA safeguards to all nuclear activities in the region. The states in the region except Israel emphasize that they are all parties to the NPT and maintain that there is no automatic sequence that links the application of comprehensive safeguards to all activities in the Middle East, or the establishment of an NWFZ, to the prior conclusion of a peace settlement, and that the former would contribute to the latter.⁶ Israel takes the view that IAEA safeguards, as well as all other regional security issues, cannot be addressed in isolation from the creation of stable

³ Algeria, Bahrain, Comoros, Djibouti, Egypt, Islamic Republic of Iran (Iran), Iraq, Israel, Jordan, Kuwait, Lebanon, Libyan Arab Jamahiriya (Libya), Mauritania, Morocco, Oman, Qatar, Saudi Arabia, Somalia, Sudan (*and South Sudan*), Syrian Arab Republic, Tunisia, United Arab Emirates and Yemen (23/(24)) — Technical Study on Different Modalities of the Application of Safeguards in the Middle East, (IAEA Document) GC(XXXIII)/887, 29 August 1989, para. 3; see, Application of IAEA Safeguards in the Middle East, Report by the Director General, 2011, http://www.iaea.org/About/Policy/GC/GC55/GC55Documents/English/gc55-23_en.pdf. [Algeria (CSA/AP approved), Bahrain (CSA/AP EIF), Comoros (CSA/AP EIF), Djibouti (CSA/AP signed), Egypt (CSA), Islamic Republic of Iran (Iran) (CSA, AP signed), Iraq (CSA/AP signed, EIF provisional), Israel (INFCIRC/66 SGA), Jordan (CSA/AP EIF), Kuwait (CSA/AP EIF), Lebanon (CSA), Libyan Arab Jamahiriya (Libya) (CSA/AP EIF), Mauritania (CSA/AP EIF), Morocco (CSA/AP EIF), Oman (CSA), Qatar (CSA), Saudi Arabia (CSA), Somalia, Sudan (CSA) (*and South Sudan*), Syrian Arab Republic (CSA), Tunisia (CSA/AP signed), United Arab Emirates (CSA/AP EIF) and Yemen (CSA).] See, Status List: Conclusion of safeguards agreements, additional protocols and small quantities protocols as of 26 April 2012, http://www.iaea.org/OurWork/SV/Safeguards/documents/sir_table.pdf.

⁴ South Sudan became an independent State on 9 July 2011; on 14 July 2011 the UN General Assembly admitted the Republic of South Sudan as the 193rd member of the United Nations, and it is the 54th member State of the African Union. See, [http://www.un.org/apps/news/story.asp?NewsID=39034&Cr=South+Sudan&Cr1=](http://www.un.org/apps/news/story.asp?NewsID=39034&Cr=South+Sudan&Cr1;); and <http://www.voanews.com/content/south-sudan-becomes-african-unions-54th-member-126320433/158563.htm>.

⁵ Application of IAEA Safeguards in the Middle East, Report by the Director General, 2011, http://www.iaea.org/About/Policy/GC/GC55/GC55Documents/English/gc55-23_en.pdf.

⁶ The views of several States of the region (Egypt, Iran, Morocco and Syria) have been elaborated further, inter alia, in their statements at the meeting of the Board of Governors on 16 September 2010 (GOV/OR.1282), Application of IAEA Safeguards in the Middle East, Report by the Director General (2011), http://www.iaea.org/About/Policy/GC/GC55/GC55Documents/English/gc55-23_en.pdf.

regional security conditions, and that these issues should be addressed in the framework of a regional security and arms control dialogue that could be resumed in the context of a multilateral peace process.⁷

In 2010, at the Review Conference of the NPT,⁸ the parties to the Treaty, *inter alia*, reaffirmed the importance of the Resolution on the Middle East adopted by the 1995 Review and Extension Conference of the NPT and recalled the affirmation of its goals and objectives by the 2000 NPT Review Conference.

The 1995 Middle East Resolution called upon those remaining states in the region not parties to the NPT to accede to it, thereby accepting an international legally binding commitment not to acquire nuclear weapons or nuclear explosive devices, and to accept IAEA safeguards on all their nuclear activities. The Resolution further called upon all states in the Middle East to take practical steps aimed at making progress towards, *inter alia*, the establishment of an effectively verifiable Middle East zone free of weapons of mass destruction, nuclear, chemical and biological, and their delivery systems.⁹

The 2010 NPT Conference stressed that the 1995 Resolution remained valid until the goals and objectives were achieved, and reiterated that the Resolution, which was co-sponsored by the depositary states of the NPT (the Russian Federation, the United Kingdom, and the United States), was an essential element of the outcome of the 1995 Conference and of the basis on which the Treaty was indefinitely extended without a vote in 1995.

The 2010 NPT Conference also emphasized the importance of a process leading to full implementation of the 1995 Resolution on the Middle East. To that end, the Conference endorsed the practical step that the Secretary-General of the United Nations and the co-sponsors of the 1995 Resolution, in consultation with the states of the region, will convene a conference in 2012, to be attended by all states of the Middle East, on the establishment of

a Middle East zone free of nuclear weapons and all other weapons of mass destruction, on the basis of arrangements freely arrived at by the states of the region, and with the full support and engagement of the nuclear-weapon states. The 2012 Conference shall take the 1995 Resolution as its terms of reference.¹⁰

Forum

In nearly every year since 1995, the IAEA General Conference has adopted resolutions affirming "the urgent need for all States in the Middle East to forthwith accept the application of full-scope Agency safeguards to all their nuclear activities as an important confidence-building measure among all States in the region and as a step in enhancing peace and security in the context of the establishment of a [nuclear-weapon-free zone] NWFZ;" calling upon "all parties directly concerned to consider seriously taking the practical and appropriate steps required for the implementation of the proposal to establish a mutually and effectively verifiable NWFZ in the region" of the Middle East; and calling further upon "all States in the region to take measures, including confidence-building and verification measures, aimed at establishing a NWFZ in the Middle East."¹¹

In addition, on September 22, 2000, in the context of the agenda item "Application of IAEA safeguards in the Middle East," the IAEA General Conference adopted Decision GC(44)/DEC/12, in which it requested "the Director General to make arrangements to convene a forum in which participants from the Middle East and other interested parties could learn from the experience of other regions, including in the area of confidence building relevant to the establishment of a nuclear weapon free zone."¹²

An IAEA Forum on Experience of Possible Relevance to the Creation of a Nuclear-Weapon-Free Zone in the Middle East was successfully organized

⁷ Israel's position has been elaborated further, *inter alia*, in its statement at the meeting of the Board of Governors on 16 September 2010 (GOV/OR.1282). Application of IAEA Safeguards in the Middle East, Report by the Director General (2011), http://www.iaea.org/About/Policy/GC/GC55/GC55Documents/English/gc55-23_en.pdf.

⁸ NPT/CONF.2010/50 (Vol. I), IV. "The Middle East, particularly implementation of the 1995 Resolution on the Middle East."

⁹ Ibid.

¹⁰ NPT/CONF.2010/50 (Vol. I), IV. "The Middle East, particularly implementation of the 1995 Resolution on the Middle East," Application of IAEA Safeguards in the Middle East, Report by the Director General, 2011, http://www.iaea.org/About/Policy/GC/GC55/GC55Documents/English/gc55-23_en.pdf.

¹¹ Application of IAEA Safeguards in the Middle East, Report by the Director General, 2011, http://www.iaea.org/About/Policy/GC/GC55/GC55Documents/English/gc55-23_en.pdf.

¹² Ibid.

in Vienna on November 21-22, 2011.¹³ The Forum saw constructive dialogue on the establishment of an NWFZ, despite the complexity of the issue and differences of views among the states concerned.¹⁴ All states of the region of the Middle East, members of the IAEA, attended the Forum, along with representatives of ABACC, the Commission for the Southeast Asian NWFZ, Euratom, OPANAL, the UN, and Observers: the League of Arab States, the EU, and Palestine.¹⁵ It is important to note is that unlike at the NPT Review Conference, where non-parties are not part of the proceedings and decision-making and thus are not bound by the 1995/2000/2010 Resolutions and follow-on steps, at the IAEA all key states of the region of the Middle East are present, including the one key state in the region not party to the NPT. Furthermore, the IAEA Forum was the fourth event organized to discuss matters relevant to a Middle East NWFZ — the previous three events were technical workshops on “safeguards, verification technologies and related experience, including experience in various regional contexts.”

The principal focus of the Forum was to: (i) study the lessons of other regions regarding the regional setting and context that had prevailed there before they began considering an NWFZ; (ii) review the existing multilaterally agreed principles for establishing NWFZs in populated areas of the world; (iii) review the theory and practice of establishing the five existing NWFZs; (iv) discuss with representatives from the five existing NWFZs their experience in promoting, negotiating, and practically implementing negotiated arrangements for NWFZs; and (v) discuss the region of the Middle East in this context.¹⁶

The Forum addressed the following specific topics: (1) Experience in Africa, Asia, Europe, and Latin America and the Caribbean in making progress toward building cooperation, regional stability, and security;

¹³ <http://www.iaea.org/newscenter/focus/iaeanwzf/index.shtml>.

¹⁴ IAEA Director General Yukiya Amano, Introductory Statement to the IAEA Board of Governors, (Vienna: 5 March 2012).

¹⁵ List of Participants, <http://www.iaea.org/newscenter/focus/iaeanwzf/forumparticipants211111.pdf>.

¹⁶ IAEA Forum on Experience of Possible Relevance to the Creation of a Nuclear-Weapon-Free Zone in the Middle East, Vienna, 21-22 November 2011, Summary, <http://www.iaea.org/newscenter/statements/misc/2011/petersen221111.pdf>. The Agenda for the IAEA Middle East Forum was originally prepared for the 2004 IAEA General Conference and was reiterated at the IAEA General Conferences from 2008 onward. See, http://www.iaea.org/About/Policy/GC/GC48/GC48Documents/English/gc48-18_en.pdf (Application of IAEA Safeguards in the Middle East, Report by the Director General [2004]); and http://www.iaea.org/About/Policy/GC/GC52/GC52Documents/English/gc52-10_en.pdf (Application of IAEA Safeguards in the Middle East, Report by the Director General [2008]).

arms control and disarmament agreements and identification of the required prerequisites towards this end by reaching common understandings on bilateral and regional issues of security, confidence-building, and cooperation, including a discussion of the track record in implementing regional verification arrangements by specifically addressing the practices of Euratom and the Brazil-Argentina Agency for Accounting and Control of Nuclear Materials (ABACC); (2) Principles governing the establishment of NWFZs and the conceptual framework of NWFZ treaty arrangements: (i) geographic delineation; (ii) scope; (iii) verification; (iv) security assurances; and (v) other issues, such as the role of extra-regional states, the nature of the arrangements (politically/legally binding), and the role of international governmental and non-governmental organizations and the public at large in promoting and supporting the arrangements; and (3) the potential relevance of such experience to the case and region of the Middle East.¹⁷

Possible Features of a Middle East NWFZ

In accordance with internationally recognized criteria governing the establishment of NWFZs,¹⁸ a Middle East NWFZ should ensure, *inter alia*: a clear definition of the geographic zone of application; the total absence of nuclear weapons within the area encompassed by the zone; the establishment of an international system of verification and control to monitor compliance; the creation of a regional nuclear co-operation and verification mechanism; the universality of membership of the states of the region; and the provision of assurances by the five nuclear-weapon states to unconditionally refrain from the use or threat of use of nuclear weapons against the states of the zonal treaty. Additional features could include prohibitions on: enrichment or reprocessing of nuclear material; dumping of nuclear and radioactive waste; attacking nuclear facilities; stationing or transit of nuclear weapons; and unsafeguarded and undeclared nuclear activities.¹⁹ Other key features could include provisions for: the verified dismantlement and destruction

¹⁷ Application of IAEA Safeguards in the Middle East, Report by the Director General, 2011, http://www.iaea.org/About/Policy/GC/GC55/GC55Documents/English/gc55-23_en.pdf.

¹⁸ <http://www.un.org/disarmament/WMD/Nuclear/NWFZ.shtml>.

¹⁹ <http://www.un.org/disarmament/WMD/Nuclear/NWFZ.shtml>.

of any existing nuclear weapons and irreversible placement of all weapon-usable nuclear material under safeguards; converting all existing weapon-usable nuclear material to a form not suitable for weapon use; the universal regional implementation of comprehensive and strengthened IAEA safeguards; the enhanced physical protection of nuclear and other radioactive material and nuclear facilities; nuclear safety; the conversion or destruction of nuclear weapon related facilities; mutual verification and joint research; a regional nuclear fuel repository; and a permanent secretariat.

Consultations on applying IAEA safeguards to all nuclear facilities in the Middle East have shown that: i) it would be desirable for IAEA safeguards to apply to all nuclear activities in the Middle East; ii) the establishment of an NWFZ with appropriate verification arrangements would be an important step in enhancing security and creating confidence; and iii) a verification system for an NWFZ would most likely need to be comprehensive and intrusive to be able to deal with the legacy of wars and distrust that exists in the region, and it would most likely benefit from a system of mutual verification by the Parties in addition to global verification by the IAEA.²⁰

The material obligations that could form part of an eventual Middle East NWFZ agreement might fall into several general categories, *inter alia*, those that: (i) preclude research and development on and the possession, acquisition, manufacture, or stationing of nuclear weapons or nuclear explosive devices; (ii) preclude research and development on and the production, importing, or stockpiling of weapon-usable materials (i.e. uranium enriched to 20% or more in uranium-235 and separated plutonium), and require the disclosure of all nuclear activities, including research and development, imports, exports, and production; (iii) require the application of the Agency's strengthened safeguards system, with possible additional features relevant to the region, to all nuclear material, installations, and relevant equipment and material; and (iv) require the verification of the dismantlement of any nuclear weapon programs.²¹

²⁰ Application of IAEA Safeguards in the Middle East, Report by the Director General, 1998, http://www.iaea.org/About/Policy/GC/GC42/GC42Documents/English/gc42-15_en.pdf.

²¹ Application of IAEA Safeguards in the Middle East, Report by the Director General, 1993, http://www.iaea.org/About/Policy/GC/GC37/GC37Documents/English/gc37-1072_en.pdf.

Efficacy of Regimes

An approach to nuclear non-proliferation and disarmament based in a treaty and rules is vastly preferable to a non-treaty approach. Formally negotiated treaties carry the weight of international law, create a barrier to easy reversal, and provide for accountability. Extending the scope of non-proliferation treaties to sub-state actors can be accomplished through criminalization of the possession, acquisition, or use of any weapons of mass destruction or their precursors as a crime against humanity, prosecuted through the International Criminal Court.

In order to be credible and to sustain the longevity of the multilateral treaties and regimes, all questions of compliance must be addressed directly and honestly, and responses must be consistent in their approach and methods. Selective implementation of nuclear non-proliferation strategies has a proven track record of failure; the use or threat of use of force unilaterally to deal with proliferation challenges does not guarantee success — at best, the success would be incomplete, while at worst it would create a driver for proliferation.²²

Conclusions

The generations represented in this room and succeeding generations have been plagued with the sorry task of dealing with the detritus of the Cold War: thousands of nuclear weapons; hundreds of tons of weapon-usable plutonium and highly-enriched uranium; nuclear weapon complexes and test sites contaminated with radioactive materials; thousands of ballistic missiles and bombers; thousands of tons of chemical weapons; not to mention the glut of conventional weapons — the millions of land-mines and light weapons, explosive remnants of war, and other paraphernalia of war.

Albert Einstein once said, "Imagination is more important than knowledge." Einstein preferred imagination over knowledge because he understood that it is the ability to stand on an existing foundation of accepted knowledge, and yet see beyond to the next frontier of discovery, that is the source of personal, cultural, and scientific advancement.

²² IAEA Director General Mohamed ElBaradei, Oxford Union Debate, 29 May 2003.

William Luers, former U.S. Deputy Assistant Secretary of State for Europe and for Inter-American Affairs, and Thomas R. Pickering, former U.S. Under Secretary of State for Political Affairs, recently said that rearranging the deck chairs would not have saved the Titanic. Luers and Pickering added that one lesson provided by former U.S. presidents is the value of direct, high-level contacts with key adversaries to fashion bold new ways to strengthen international security without war. In 1933, Franklin D. Roosevelt negotiated personally with Soviet Foreign Minister Maxim Litvinov to open diplomatic relations between the two countries. Dwight D. Eisenhower invited Nikita Khrushchev to the United States in 1959 to open the eyes of the first Soviet leader ever to visit America. The bilateral U.S.-China talks in Warsaw in the 1960s were fruitless until Richard M. Nixon and National Security Adviser Henry Kissinger opened a different, more direct discussion through the auspices of Pakistan. The opportunity likely exists now to establish new ways to explore common ground and reach a more durable political solution to non-proliferation challenges.²³

As President Kennedy said in 1963, "The pursuit of peace is not as dramatic as the pursuit of war — and frequently the words of the pursuer fall on deaf ears. But we have no more urgent task."

²³ <http://www.project-syndicate.org/> (22 May 2012).



SESSION 1



Chairman –
Alexei ARBATOV,
Academician (RAS)

**Head of the Center for International
Security of the IMEMO (RAS),
Scholar-in-Residence of the
Carnegie Moscow Center (Russia)**

The State and Perspectives for Nuclear Disarmament and Limitation

Roald SAGDEEV, Academician (RAS)

**Distinguished University Professor, Department of Physics at the
University of Maryland, Director Emeritus of the Russian Space
Research Institute, Member of the Supervisory Council of the
International Luxembourg Forum (Russia/U.S.)**

Nearly twenty years ago, an initiative of the Australian government created an expert group called the Canberra Commission on the Elimination of Nuclear Weapons. I had the honor of being a member of that commission, along with former United States Secretary of Defense Robert McNamara and a number of other major political and public figures. This included current members of the Luxembourg Forum's Supervisory Council, including Rolf Ekeus, who represented Sweden over the course of many years in the international political and diplomatic arena, and Gareth Evans, who as Australian Foreign Minister had originated the Canberra initiative. The commission's documents contained a detailed proposal to put together a road map for the transition to a world without nuclear weapons. The commission needed support from the broad international community, and primarily from political actors involved in discussion and negotiations aimed at curtailing the nuclear weapons race. During the process of this work, we made inquiries with the governments of various countries. Unfortunately,

the brief response that we got was, "It's still too early to speak about fully destroying nuclear weapons. It's a non-starter." Sometimes there were other reasons for declining our proposal. For example, at a reception in Canberra I asked the Russian ambassador to Australia to ask the Russian Ministry of Foreign Affairs to provide support for the initiative. The ambassador replied that he had already made such a request to Moscow, but the Minister of Foreign Affairs had rejected it. The reason for the rejection was that Australia had supposedly impeded Russia's entry into Asia-Pacific Economic Cooperation, and therefore Australia's antinuclear initiative did not deserve to be supported. Thank goodness that at least this reason no longer exists! Two or three years later, the Canberra Commission prepared a final report, but it did not become the initial impulse toward a broad international discussion. Furthermore, in Australia itself, the Labor Party government was replaced by a government of conservatives for whom the antinuclear initiative bore no interest.

One of the pioneers of the movement was President Ronald Reagan who, at a meeting with Russian leader Mikhail Gorbachev in Reykjavik, Iceland, in the fall of 1986, proposed renouncing strategic nuclear weapons entirely. That initiative at the time could not be supported, since in the Soviet Union there was excessive concern over the Strategic Defense Initiative (SDI), which became known as the Star Wars program.

The reaction to the Gorbachev-Reagan summit in Reykjavik, naturally, turned out to be negative. The mass media and political commentators declared the meeting a failure. The great dream of fully destroying strategic missiles with their nuclear warheads did not get a ticket to real life. The leaders of the superpowers left the summit with empty hands.

Somewhat later, at the next summit in Washington, they managed to nevertheless reach an agreement, but only on a much less ambitious project to eliminate medium- and short-distance missiles (i.e. the Intermediate-Range Nuclear Forces [INF] Treaty). Even this more modest step had historic significance: the extremely painful question of European missiles was resolved, and the way was cleared to the START negotiations process. But this reality turned out to be very far away from the target initially set (but never reached) in Reykjavik.

Years passed. Now, twenty-five years later, interest in the lessons and significance of the Reykjavik summit has risen sharply. I had the pleasure of participating in a series of narrow meetings held upon the initiative of George Shultz, Secretary of State in the Reagan administration, and Sidney Drell, a well-known physicist at the Hoover Institution in Stanford University. Many of the participants at the meeting in Stanford were from the Reagan team, veterans of the legendary summit in Reykjavik. Recognition that both leaders were completely earnest in striving toward a common goal — toward a world free of nuclear weapons — has become the recurring theme in the current interpretation of Reykjavik. This does not mean that their predecessors did not envision such a future. In 1953, in an address to the United Nations General Assembly in support of the "Atoms for Peace" initiative, President Eisenhower spoke of the necessity of solving the "fearful atomic dilemma" by devoting the heart and the head to finding a way for human genius not to serve weapons of death, but to be devoted to life. President Kennedy warned, "The world was not meant to be a prison in which man awaits his execution." Soviet leaders before Gorbachev had made similar statements on multiple occasions. But in the historical context of the time they could hardly be understood as anything more than declarative statements. However, the meeting in Reykjavik gave Mikhail Gorbachev and Ronald Reagan a historic chance for the first time after decades of the Cold War to raise the question of fully eliminating nuclear weapons as the principal item on the agenda, before traditional issues of arms control and arms reduction, i.e. before business as usual.

The success of such an approach would address the deep concern of non-nuclear countries that are parties to the Treaty on the Non-Proliferation of Nuclear Weapons, Article VI of which is the cornerstone of the agreement between the countries that possess nuclear weapons.

The Stanford meetings of Reykjavik-era veterans helped analyze once more the lessons of the summit and the decisive negative role played by the seemingly profound difference in positions between the United States and the Soviet Union on missile defense. Gorbachev insisted that work in this direction be limited to no higher than the laboratory level, while Reagan wanted to maintain the possibility of tests and development. In a certain

sense, this meant that entry into outer space could potentially signify a step beyond the bounds of the laboratory level. In the verbatim report from Reykjavik, M. S. Gorbachev uses the word "laboratory" over 30 times. Immediately after the summit, Eduard Shevardnadze asked me to clarify what exactly the term "laboratory" means in this context. My position was that outer space is already a laboratory. Every regular cosmonaut flight was presented in the press as a flight to the orbital laboratory (i.e. the Salyut Space Station and later the Mir Space Station). The boundary line must be drawn not by geographical location, but by the nature of the work done, e.g. the scale of energy output for destroying the target. As a whole, the Reykjavik discussions and the disappointments of that time must become an important lesson for contemporary negotiations on nuclear disarmament.

Returning to the result of the meetings in Stanford, one of those results was the initiative by the famous American "Gang of Four" — George Shultz, Henry Kissinger, William Perry, and Sam Nunn — who jointly authored an article published in *The Wall Street Journal* in 2007. They assert in the article that the Cold War ended nearly twenty years ago. Because of this, the principle of nuclear deterrence is no longer relevant, not only in relations between the United States and Russia, but throughout the world as well. The group of authors identified the proliferation of nuclear weapons as a tremendous threat. Therefore, states that possess nuclear weapons must take the lead in reducing nuclear weapons in order to achieve progress in this area, and the United States and Russia must lay the foundations for this.

Thus, the question of a transition to a nuclear-free world was once again posed. This time, much more interest in the idea was manifested, including at the highest level of government in nuclear club countries. President Obama met with the group of four authors who had initiated the program and promised to support it. There was a positive reaction to the proposal from Russia as well, where a Russian group of four veterans in arms race deterrence, including Yevgeny Primakov and Yevgeny Velikhov, issued its own statement. On the American side, after a meeting of the Gang of Four with President Obama, the United States presidential administration presented its conception of a gradual transition to a nuclear-free world. This was done for the first time in Prague in 2009, which inspired great hopes on all sides.

What do we see today? Campaign rhetoric in the United States and the sudden recurrence of the economic crisis in which we once again find ourselves today. This and many other problems have put the prospects of a gradual transition to a nuclear-free world on the back burner.

If we return once more to the past, then we can recall the attitude of disbelief that people close to Mikhail Gorbachev's team initially had toward the prospects of negotiations with President Ronald Reagan, especially after Reagan had declared the Strategic Defense Initiative (SDI) program. I did not immediately come to the conclusion that Ronald Reagan, as well as Mikhail Gorbachev, sincerely supported the idea of a nuclear-free world. For example, at a meeting at the Hoover Institution (when the program of the American Gang of Four was just beginning to form), a video recording was played of the 1976 United States Republican Party Convention, at which Gerald Ford was nominated as the official candidate for president of the United States. Ronald Reagan was there. He had previously tried to become the party candidate, but he lost the Republican primary election to Gerald Ford. As the winner of the nomination, Ford asked Reagan to address the convention, "Ronnie, say something to the audience." Reagan agreed, and delivered the following impromptu speech: "This morning I was present at the laying of a time capsule which the next generation of Americans can open only one hundred years from now. I was asked to write something, and I thought, 'What should I wish for?' I wished for them to live in a nuclear-free world."

At present we have already gone over a third of the way from 1976 to 2076, when Reagan's time capsule will be opened. The clock of history in countdown mode has shown how many potentially positive steps have already been lost. The entire START negotiations process nearly had to be rebuilt starting from the ground up. Furthermore, the treaty on the limitation of anti-ballistic missile systems was irrevocably dismantled. G. W. Bush has said that "friends don't need a treaty." However, this principle was not applied to so-called treaty organizations such as NATO.

Fortunately, questions of a gradual transition to a nuclear-free world have not been taken off the agenda, as has been shown by the group of four authors, as well as the appearance of Global Zero as a broad-based

international social movement. Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons, under which the nuclear powers promised to advance toward a nuclear-free world, likewise remains in full force.

What is keeping us today from taking the next important step toward a profound reduction in strategic nuclear arms? Previously, academician of the Russian Academy of Sciences Alexei Arbatov spoke about how the proposed scenarios for the creation of a missile defense system in Europe do not facilitate progress in nuclear disarmament. The Russian position is based on the demand that either Russia become a full-fledged member of the system with its own distinctly defined functions and division of roles or, if the system is created without Russia, then guarantees must be given such that the system will not (cannot) be used against Russia. On this matter, supporters of a European missile defense system frequently say, "Why does Russia need legally binding guarantees from the United States (NATO)? The missile defense system being created will never be directed against Moscow." But we must recall an established historical fact. When Mikhail Gorbachev and Eduard Shevardnadze agreed in Berlin to withdraw Soviet forces from the German Democratic Republic, which led to the destruction of the Berlin Wall and the emergence of a unified Germany, they were promised that NATO would not extend any further to the east. Within two or three years, the processes of NATO expansion had been put on the agenda. At that time, former U.S. Secretary of State James Baker, who had participated in those historic negotiations in Berlin, confirmed, "Yes, we really did say that. But neither Mikhail Gorbachev nor Eduard Shevardnadze insisted that those guarantees be legally formalized." It cannot be excluded that Russian leaders today are recalling that episode when they now insist that Moscow be provided with legally binding guarantees that the missile defense system being created in Europe not be directed against Russia.

The future will show what steps will be taken in the direction of creating a nuclear-free world. In any case, the fight is not over yet. Washington will soon produce an important document as a follow-up to the publication of the United States Nuclear Posture Review two years ago. It cannot be excluded that we will see interesting proposals in that document from the American side that will make it possible to move further after the (Prague)

New START Treaty becomes effective. It seems that the Russian side will continue its wait-and-see period approach. However, this relates not only to the European missile defense system. It is apparent that Russia's strategic leadership is afraid of the prospect of an increasingly dominant role of the United States military in the hypothetical nuclear-free world, which is to be achieved through terrific technological superiority in the accuracy of target strikes. This is further confirmed in a recent statement by Russian President Vladimir Putin that for the next serious step in the area of nuclear disarmament, Russia will need to attain a new level of military technology comparable to the United States in the area of non-nuclear high-precision weapons. In a world without nuclear weapons, the criteria of strategic stability will, of course, include consideration of this component in arms systems.

The State and Prospects of the Nuclear Arms Control and Reduction Process: Russia's Position

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The Russian approach to the problems of reducing and restricting nuclear weapons is built upon the principles of realism and pragmatism. We consider disarmament to be one of the ways to strengthen international security and stability. In this area we prefer to follow international treaties and agreements, which guarantees the verifiability and irreversibility of the steps we take.

Our country is responsible for its obligations under the Non-Proliferation Treaty, including the obligations in Article VI. Russia's National Security Strategy to 2020 indicates that beneficial conditions for the sustainable development of the country in the long term are to be established through the provision of strategic stability, including through consistent advancement toward a world free from nuclear weapons and the creation of conditions of equal security for all.

Based on this position, Russia participates to the required extent in the development and formation of full-scale agreements for the reduction and restriction of armaments. Furthermore, we seek to facilitate in every possible way the creation of appropriate conditions that will make it possible to

reduce armaments without negatively impacting international security and strategic stability. Proceeding in this manner, Russia intends to maintain its support for the strengthening of regional stability by participating in the processes of reducing and restricting armed forces and armaments.

The currently effective Russian Foreign Policy Concept likewise emphasizes our openness to negotiations with all nuclear powers for the purpose of reducing strategic offensive weapons to a minimal level sufficient to maintain strategic stability.

Such principal tenets are particularly important now, when the issues of nuclear disarmament are taking up more and more space in the international agenda. The increased attention to issues of nuclear disarmament reflects the expectations of a substantial part of the international community that strives toward a more secure and stable world without nuclear weapons. We are understanding toward such ideas and support a constructive and respectful dialogue with their proponents.

Russia's practical contribution to the cause of reducing and restricting nuclear weapons is well known. We have in our favor the Soviet-American Intermediate-Range Nuclear Forces Treaty (INF), which paved the way to nuclear disarmament, the 1991 Strategic Arms Reduction Treaty (START I), the 2002 Strategic Offensive Reductions Treaty (also known as the Treaty of Moscow), and the U.S.-Russia Strategic Arms Reduction Treaty (New START) signed on April 8, 2010, in Prague.

A result of the implementation of these agreements is that two classes of nuclear weapons, land-based ballistic missiles and cruise missiles with a range of 500 to 3500 km, have been completely liquidated in Russia and the United States. Moreover, the irreversibility of that liquidation has been guaranteed, and the reliable verification of the subsequent performance of treaty obligations has been provided for. As for START, by January 1, 2010, approximately 1600 launching devices for intercontinental ballistic missiles (ICBMs) had been liquidated, as well as 3100 ICBMs and submarine-launched ballistic missiles, 47 nuclear submarines, and 67 heavy bombers. At the end of March 2012 our country had 494 deployed ICBMs, submarine-launched ballistic missiles, and heavy bomber-launched ballistic missiles; 1942 deployed nuclear warheads; and 881 deployed and non-deployed

launch devices and heavy bombers. In regard to a number of parameters, these figures still exceed the limits established in New START, viz. no more than 700 deployed ICBMs, submarine-launched ballistic missiles, and heavy bomber-launched ballistic missiles, 1550 warheads, and 800 deployed and non-deployed launch devices for ICBMs, submarine-launched ballistic missiles, and heavy bombers. However, the plan is for Russia to reach the levels prescribed in the Treaty only by 2018.

Along with the reduction in strategic nuclear weapons, Russia has substantially reduced (i.e. by several times) its non-strategic nuclear potential and has radically altered its status. As part of the so-called presidential initiatives of the early 1990s, remaining non-strategic nuclear devices were removed from combat duty, converted to a non-deployed state, and collected in central storage facilities on Russian territory. At present, Russia's non-strategic nuclear arsenal amounts to no more than 25% of what the USSR had in 1991.

It would be highly appropriate now to fairly assess the measures we then took to remove nuclear weapons stored on the territory of the republics of the former USSR, as well as those we took to review the doctrinal tenets and tactics of conducting military operations with an eye to denuclearizing them, to change the organizational structure of military formations that previously had regular nuclear assets, and to reduce the operational status (i.e. de-alerting) of the most common category of nuclear weapons.

We are open to discussing the topic of non-strategic nuclear weapons in the broad context of efforts toward disarmament. Russia's first step on multiple occasions has been to call on our NATO partners to return all non-strategic nuclear weapons to the territory of the countries to which they belong, completely liquidate any exogenous infrastructure for the prompt deployment of non-strategic nuclear weapons, and renounce the practice of joint use of non-strategic nuclear weapons that involves non-nuclear members of the organization in the use of nuclear weapons.

The NATO summit in Chicago, however, showed that the alliance does not intend to follow such a path. The NATO defense and deterrence policy review published in Chicago underscores the emphasis on nuclear arsenals. It confirms the course of involving to the greatest extent possible non-nuclear allies in the planning and conduct of nuclear missions.

Such an approach is a cause for concern for Russia, but not only for Russia. NATO representatives should participate in international events conducted within the framework of the review process pursuant to the Non-Proliferation Treaty and discuss the issues of joint use of nuclear weapons with representatives of the Non-Aligned Movement and the Antinuclear Coalition. They would have to answer many inconvenient questions. It is apparent that that is why the alliance has not shown any interest in such discussions.

The signing of the U.S.-Russia Strategic Arms Reduction Treaty (New START) on April 8, 2010, in Prague marked the beginning of a new stage on the way to nuclear disarmament. In practical terms, the levels prescribed by the Treaty require that warheads be reduced by one third from the levels prescribed in the Treaty of Moscow. The reductions of delivery vehicles are even more significant: Russia and the United States will keep less than half of the levels prescribed in the previous START treaty (i.e. 1600). Thus, under New START, the two countries' nuclear arsenals will be reduced to the lowest levels since the early 1960s, when the full-scale arms race between them began.

Russian priorities for further advancement toward nuclear disarmament remain unchanged. We begin by insisting that before undertaking new large-scale disarmament measures, it is necessary first to ensure that New START is complied with and ensure that it is effective and viable. This approach has been specially noted in a Decree of the President of the Russian Federation, V. V. Putin, dated May 7, 2012, entitled "On Measures for the Realization of the Foreign Policy Course of the Russian Federation." That decree assigns the Ministry of Foreign Affairs the task of ensuring that New START is fully implemented. We have also been advised to begin by insisting that negotiations on further reductions of strategic offensive arms are possible only within the context of an exhaustive accounting of all factors that influence global strategic stability. This primarily entails plans for the unilateral deployment of strategic missile defense, the creation of strategic offensive arms equipped with non-nuclear explosives, the threat of weapons being deployed in outer space, the growing quantitative and qualitative imbalances in conventional weapons against a background of

continuing or newly emerging regional conflicts, the indefinite nature of the prospects of the Comprehensive Nuclear-Test-Ban Treaty, etc. We will meticulously follow these instructions.

In light of the inseparable link between strategic offensive arms and defensive arms, the missile defense factor is acquiring special significance in this context. Russia never denied the possibility that risks and threats associated with the proliferation of missiles would arise. In this connection, an initiative to create a joint European missile defense system constructed on a sector principle was advanced at the NATO-Russia Council summit in Lisbon. This initiative proposed that a unified security perimeter be formed in Europe with Russia participating on an equal basis. It proposed that the NATO partners develop a concept and architecture for the European missile defense system that would be managed jointly, would be capable of handling probable threats, and would not undermine strategic stability.

Unfortunately, the United States and our other NATO partners did not show any serious intent to proceed in this direction. The main stumbling block is the issue of guaranteeing that the missile defense weapons deployed in Europe will not be directed against Russia and our strategic nuclear arsenal. It is obvious that extending the capacity of U.S. missile defense to intercept ICBMs and submarine-launched ballistic missiles can upset the existing strategic balance and create the danger that Russia's strategic nuclear arsenal deterrence potential may weaken on the cusp of 2018-2020.

They assure us at all levels that the future missile defense system is not designed to weaken Russia's nuclear deterrence potential. NATO stated this once more at its summit in Chicago. But when we raise the question of putting such assertions on paper in the form of a distinct legal obligation, we are promptly met with a rigid refusal.

Russia occupies a reasonable position on guaranteeing non-targeting. We are prepared to discuss the status and content of such obligations. The obligations cannot be general and unsubstantiated. They must be formulated in such a way that Russia will be able to judge, not on the basis of some kind of promises, but on objective military and technical criteria, how the actions of the United States and NATO in the area of missile defense relate

to their declarations, what they are doing, whether or not they are impinging upon Russian interests, and whether or not strategic nuclear parity is being broken.

The way our NATO partners put it, the best guarantee for Russia would be our cooperation in a missile defense alliance — even without any right to influence decisions made by the NATO states. But Russia will not agree to participate in a program that prospectively stands to become capable of weakening Russia's deterrence potential and is to be implemented without consideration of our proposals and concerns.

To begin with, we insist that there is still time to achieve mutual understanding on the issues of missile defense. Russia has the political will to conclude the necessary agreements that can turn to a fundamentally new page in our relations with the United States and NATO. However, for this it will be necessary that our partners approach the task of considering Russia's lawful interests in the security area honestly and responsibly.

Otherwise, we will have to give different answers, acting in response to events as they unfold at each successive stage of implementation of the American plan. Similar measures are outlined in an official Statement of the President of the Russian Federation, D. A. Medvedev, dated November 23, 2011, regarding the situation that has taken shape around the NATO countries' missile defense system in Europe. In particular, that statement remarks that if the situation develops in an adverse manner, Russia reserves the right to refuse to take further steps toward disarmament, and likewise arms control. Furthermore, considering the inseparable link between strategic offensive arms and defensive arms, the grounds for our country to repudiate START may arise.

Russia is not closing the door on a continued dialogue with the United States of America and the North Atlantic Treaty Organization on issues of missile defense and practical cooperation in this area. However, the way to such cooperation lies through the creation of a distinct legal basis for interaction that would ensure that our lawful interests are duly considered. The Decree of the President of the Russian Federation, V. V. Putin, dated May 7, 2012, entitled "On Measures for the Realization of the Foreign Policy Course of the Russian Federation," gives the Ministry of Foreign Affairs the

task of consistently defending Russian approaches in relation to the creation of a global missile defense system by the United States and seeking the provision of hard and fast guarantees that such a system will not be targeted against Russia's nuclear deterrence arsenal.

We are open to dialogue and expect that our Western partners will follow a reasonable and constructive approach. If Russia and NATO succeed in agreeing on cooperation in the area of missile defense, that event will be a milestone in Russian-American and Russian-NATO relations, and the prospect of entering a qualitatively new level of interaction will arise. It then will be entirely justifiable to speak of the final conclusion of the Cold War and the formation of a full-fledged partnership between Russia and NATO. Otherwise, further escalation of the confrontation will be inevitable.

A paramount condition for proceeding to further steps toward nuclear disarmament is that all other states that possess nuclear weapons, without exception, join this process without difficulty. New START has brought us to the point where it is no longer possible to ignore the potentials of other countries. It is obvious that resolution of this task will require forming a corresponding political and regulatory framework. Of course, we welcome unilateral steps on the part of individual states to reduce their nuclear potentials. But at the same time, we must consider that such measures are not obligatory under international law, do not entail verification, and can be reconsidered at any point in time.

In forming a model for multilateral nuclear disarmament, the opinions of the expert community are of key significance. Interesting ideas on this matter were recently aired in the Russian press by the academic A. G. Arbatov. Vice President of the Russian Academy of Sciences, academic N. P. Laverov, has supported those ideas in his report. We hope that they have initiated a broader discussion.

Certain ideas on the character and content of future disarmament efforts are contained in New START itself. This primarily relates to the problem of conventionally armed ICBMs and submarine-launched ballistic missiles, which remains unresolved. Another important factor relates to the process of addressing the issue of deeper reductions in nuclear weapon delivery vehicles. Our initial proposal at the talks provided for a restriction of their

number to 500. As before, we feel that that was a correct decision, since strike potential is determined primarily by the number of delivery vehicles available. Without vehicles deployed, nuclear warheads become mere useless ballast.

Disarmament remains one of the central directions of the activities of the Russian Ministry of Foreign Affairs. As Russian President V. V. Putin has emphasized, we would not want to give up hope on the possibility of seeking ways to compromise in the resolution of the most complicated arms control problems. In particular, we are ready to consider various versions of what may comprise the agenda we will share with the Americans in this area during the upcoming period. However, the balance of interests and inadmissibility of attempts to gain unilateral advantages through negotiations will remain an inviolable rule in this process. Russia will continue to follow an active, creative course toward strengthening common security and stability, renouncing confrontation, and responding effectively to the challenges and risks of the contemporary world.

The State of and Perspectives for Nuclear Disarmament

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First, I wish to thank Dr. Viatcheslav Kantor for organizing and sponsoring the International Luxembourg Forum.

During the past two years the Natural Resources Defense Council (NRDC) in Washington, D.C., where I work, and the Institute for USA and Canadian Studies (ISKRAN) in Moscow have been working together on assessing the impacts of sharply cutting the U.S. and Russian nuclear arsenals and lowering the launch readiness of strategic nuclear weapons and the impact this would have on the stability of mutual deterrence.

This work on the U.S. side is led by my colleague Matthew G. McKinzie, and included Christopher E. Paine, Bruce Blair, David Hoffman, and Theodore A. Postol, who is with us today. On the Russian side the work is led by Sergey Rogov, director of ISKRAN, and includes Col.-Gen. (Ret.) Victor Esin, Col. (Ret.) Valery Yarynich, and Maj.-Gen. (Ret.) Pavel Zolotarev.

Using Analytica, a commercially available Monte Carlo software program, McKinzie and Yarynich constructed a nuclear exchange model involving two sides fighting a nuclear war: an "attacker" initiating a first strike and a "victim" retaliating. The model included nuclear forces at

different levels of combat readiness — both on alert and off alert — and their command structures, to simulate U.S. and Russian strategic forces under attack. In the model, what Yarynich termed "first echelon" forces consisted of single-warhead, silo-based ICBM launchers, and "second echelon" forces were comprised of SLBMs, road-mobile ICBMs, and MIRV'd silo-based ICBMs. With this model they were able to demonstrate that U.S. and Russian strategic forces can be reduced to low levels and de-alerted while maintaining mutual deterrence and strategic stability by assured retaliation after a surprise first strike.

This research was reported in a piece in the U.S. journal *Foreign Affairs* [Bruce Blair, Victor Esin, Matthew McKinzie, Valery Yarynich, and Pavel Zolotarev, "Smaller and Safer: A New Plan for Nuclear Postures," *Foreign Affairs*, Volume 89, No. 5 (September/October 2010)], and the analytical results were published in *Science & Global Security* [Bruce Blair, Victor Esin, Matthew McKinzie, Valery Yarynich, and Pavel Zolotarev, "One Hundred Nuclear Wars: Stable Deterrence between the United States and Russia at Reduced Nuclear Force Levels Off Alert in the Presence of Limited Missile Defenses," *Science & Global Security* 19, No. 3 (2011): 167-194].

NRDC has also hosted two meetings with ISKRAN, to examine the questions surrounding the future of U.S.-Russian arms control. The first meeting was held in Washington, D.C. in late May and early June 2011, and the second meeting was held in Moscow in March 2012. The primary goal was to describe a set of new arms control options for the United States and Russia at a time when their national leaderships are in a period of potential change. The secondary goal was to facilitate a greater understanding of Russia's perspectives on its national security, and how nuclear weapons fit into that larger picture for the future of Russian defense planning. NRDC's experience is that U.S. debates on nuclear weapons policy are often fought out in public, but it is difficult to see the internal Russian side of the deliberation.

Today, 22 years after the end of the Cold War, the United States and Russia are building new strategic nuclear weapon delivery systems: new ballistic-missile-carrying submarines, a new Russian liquid-fueled heavy ICBM, and a re-engineered NATO air-delivered tactical bomb. Can these

two countries move away from simply repeating the patterns of the Cold War past? Since 1991 the United States and Russia have gotten stuck between being opponents and allies. A deep-seated Cold War mindset within the security establishments of both the United States and Russia continues to oppose de-alerting and deep reductions in strategic weapons. Why does this mindset persist? Do the problems we are now experiencing in our security relationship arise from a genuine and unavoidable clash of U.S. and Russian "national interests"? Or do these problems originate primarily from within each country's domestic economy and politics, specifically in the interaction of each nation's "national security complex" with its domestic political and economic situation?

Unfortunately, the concept of strategic stability in Russian-American relations still remains narrowed to that of prevention of a surprise nuclear attack. Both Russia and the United States still behave as if a disarming, decapitating nuclear strike could really happen at any time, albeit at a very low probability. Just last week (May 30, 2012) U.S. STRATCOM Commander General C. Robert Kehler said, "I also think that it is important that we offer to the president, as long as he believes he needs this kind of capability, the ability to respond to a full range of scenarios, to include the very, very unlikely but not zero possibility in a future crisis of a very short notice attack of some kind. . . . if I look at the capability inherent in other arsenals in the world, the capability to launch a short-notice attack continues to exist. As long as it does, my view is that we need to deter that. And part of our deterrence is a posture that allows the president, if he chooses, to respond promptly if he needs to do that."

Both the United States and Russia maintain alert nuclear forces that carry with them the risk of launch on false alarm or as a result of human error, or even malicious, unauthorized launch. Both sides are still prepared, despite the Cold War's end, to inflict apocalyptic devastation on one another in a first and second strike: events playing out in less than one hour following a decision executed in minutes, resulting in millions of deaths and global environmental ruin.

In the recent Nuclear Posture Review (NPR-2010) the U.S. administration said: "The NPR considered the possibility of reducing alert rates for

ICBMs and at-sea rates of SSBNs, and concluded that such steps could reduce crisis stability by giving an adversary the incentive to attack before 're-alerting' was complete." The NRDC/ISKRAN modeling results dispute this view. By "echeloning" the forces, a stable nuclear deterrent whole is constructed from more vulnerable, de-alerted parts. In Yarynich and McKinzie's formulation, the partitioning of nuclear forces into first and second echelons serves as a barrier to sudden nuclear war while maintaining a stable deterrent. Both sides' cities would remain vulnerable to second-strike retaliation by the other side under any scenario and therefore preemptive "re-alerting" would serve no rational purpose. Furthermore, these results are robust under a range of conditions that allow for limited missile defenses and some attrition resulting from conventional strikes against nuclear forces.

These conclusions are consistent with the recent public statement by retired Gen. James Cartwright, former Vice Chairman of the Joint Chiefs of Staff and head of Strategic Command. General Cartwright said that the United States' nuclear deterrence could be guaranteed with a total arsenal of 900 warheads, and with only half of them deployed at any one time. Even those in the field would be taken off prompt alert, requiring 24 to 72 hours for launching, to reduce the chance of accidental war.

Our concern is that the internal politics in both countries will prevent the United States and Russia from moving beyond New START. At this time neither country sees any domestic political advantage to taking unilateral arms control steps, for example, to the levels cited by General Cartwright. Tragically, both the United States and Russia continue to spend vast sums, and are planning to spend more, for strategic force modernization at the expense of investing in worthy domestic social projects or urgently-needed international assistance. For example, the United States is planning to spend an estimated \$6 billion on the B-61 bomb Life Extension Program (LEP), including installing a new tail-kit to improve its accuracy. The "opportunity costs" for the two countries to maintain their respective Cold War Mutually Assured Destruction (MAD) capabilities is staggering. What a waste.

One of the topics that enters into discussions of strategic stability is Ballistic Missile Defense (BMD), which generates endless debates about

proposed deployments and technical analyses of the effectiveness, or lack thereof, of these systems. Following President Reagan's "Star Wars" speech in 1983, Academicians Yevgeny Velikhov, Roald Sagdeev, Andrei Kokoshin, and their colleagues among the Soviet Scientists' Committee for the Defense of Peace Against Nuclear Threat, published "Weapons in Space: the Dilemma of Security" in 1986. Three of the authors are with us today: Academicians Roald Sagdeev and Alexei Arbatov and Dr. Alexander Konovalov. These scientists pointed out that these systems could be readily defeated with countermeasures or if necessary overwhelmed. They were the architects, along with missile designer Yuri Solomonov, of the Soviet Union's asymmetric response to Reagan's Star Wars initiative.

With regard to the technical analyses of the utility of BMD systems, little has changed since the 1986 report by the Soviet Scientists' Committee. Dr. Ted Postol, in a presentation at the ISKRAN/NRDC Moscow meeting in March of this year, cited a recent report of the Defense Science Board Task Force entitled, "Report on Science and Technology Issues of Early Intercept Ballistic Missile Defense Feasibility." This U.S.-DOD report concluded that:

- 1) none of the radars in the European Phased Adaptive Approach (EPAA) missile defense system are sufficiently powerful to make it workable;
- 2) the Department of Defense has not been able to demonstrate that any of the existing missile defense sensors (radar and infrared) used in either the EPAA or the Ground-Based Missile Defense (GMD) can reliably distinguish between warheads, decoys, and other debris;
- 3) U.S. intelligence has already observed foreign ballistic missile launches that demonstrate an ability to quickly deploy decoys and other countermeasures.

Postol noted that correcting radar problems will require vast additional expenditures for the system. However, these additional expenditures will still not result in workable defenses due to the second of the three findings — the longstanding decoy issue. Postol also pointed out that as noted in finding 2 above (from the DSB report) the United States has not demonstrated an ability to reliably distinguish between decoys, warheads, and other potentially confusing objects.

With almost total disregard for the technical analyses of the BMD system, in the United States missile defense has become embroiled in the domestic political debate where Republicans attempt to paint Democrats as weak on defense. As Christopher Paine noted at the ISKRAN/NRDC Moscow meeting, the Democrats are willing to spend roughly \$10 billion per year on ineffective BMD systems just to take the missile defense issue off the table. In the latest round of this domestic political sparring, the House of Representatives approved a 2013 defense authorization bill to begin construction of an East Coast BMD system by the end of 2015 (later the Democrat-controlled Senate Armed Services Committee rejected the East Coast site in its version of the bill).

On the other hand, the Obama Administration's adaptive approach to missile defense is characterized as a hidden threat by some in Russia. Despite the technical failings of U.S. BMD, lack of any cooperation or confidence-building measures on missile defense between Russia and the United States could be bad news for the future of nuclear arms reductions. Just last week Russia test-launched a new version of the *Topol* ICBM, described as having missile defense penetration capabilities, in direct response to NATO affirming its commitment to building the European missile shield.

As with missile defense, the sparring between the United States, together with its NATO partners, and Russia over reductions and deployments, or even the complete elimination, of tactical nuclear weapons has little to do with the military utility of these systems. U.S. non-strategic nuclear weapons, including those still deployed in Europe, presumably have no assigned targets and surely have no utility in deterring nuclear war. These non-strategic weapons are retained in Europe solely for perceived political benefits. The United States, in the interest of NATO cohesion, has given new NATO members, such as Poland and Lithuania, veto rights over the question of withdrawing land-based nuclear weapons from Europe. This illusion of NATO cohesion is more important to the United States than incurring the stigma of being the only country that continues to base its nuclear weapons on the territory of other nations.

With the end of the Cold War, NATO lost its mission. Instead of disbanding, NATO has been struggling to find new missions such as peacekeeping.

Today, NATO nations are among Russia's largest trading and investment partners and sources of private investment capital; NATO countries are significantly dependent on Russian supplies of natural gas, oil, and uranium enrichment services; NATO nations are facing severe budget and employment problems, and their defense budgets are shrinking; why on earth would NATO want to pick a fight with Russia? Nevertheless, Russia still views NATO as a continuing threat, not just in connection with the use of U.S. non-strategic nuclear weapons deployed in NATO countries, but more in connection with the potential future use of the United States' and NATO's precision-guided conventional munitions, including drones, in a future potential conflict within Russia's historical sphere of influence. To preserve the option of intervening militarily within its historical sphere of influence to protect Russian interests, Russia sees fit to retain a bloated stockpile of obsolete tactical nuclear weapons and refuses to give them up, at least not without accommodations from the United States on a grand bargain including BMD, conventional Global Strike capabilities, and the Russia-NATO conventional military balance.

But Russia's short-range nuclear weapons are not a credible deterrence to NATO's precision-guided conventional munitions. Russia is faced with the unattractive choice between starting a wider war with NATO, backed by threats of disproportionately destructive tactical nuclear escalation, or backing down. As Christopher Paine has noted, a more sensible alternative would be for Russia to ensure that legitimate democratic political processes are in place within Russia's sphere of influence so that these countries could peacefully determine their own future, and then for Russia to respect the outcome. Under such circumstances the United States and NATO would not constitute a potential "threat" to Russia.

When I first went to the Soviet Union in 1986, it was to work with like-minded Soviet colleagues to demonstrate to our respective political leaderships and the public that American and Russian scientists could work together to eliminate nuclear weapon testing. Now, more than twenty years since the end of the Cold War, the people of the United States and Russia are at peace and are engaged together in a wide range of business enterprises. But when one listens to some officials in our two governments posturing

over new arms control proposals, you might conclude that the Cold War is not over. We need to treat each other truly as security partners. Partners don't haggle over every issue at hand. Partners ask one another "what troubles you and how can I help solve your problem?"

On a less serious note, you may ask how it is that I know that it is time to put away the nuclear weapons. Well, Mikhail Prokhorov owns the Brooklyn Nets, a U.S. basketball team. Russians own two British — I could say NATO — football clubs, Chelsea and Portsmouth, and a part of Arsenal. There are 31 Russians playing in the National Hockey League (NHL), including Alexander Ovechkin and Alexander Semin, who play for my home team, the Washington Capitals. They practice three miles from the Pentagon and play their home games at the Verizon Center, less than a mile from the nation's capital. Russians are playing in the Stanley Cup Finals. So every day Americans are cheering for our Russians friends. Yes, it really is time to put away the nuclear weapons.



SESSION 2



Chairman –
Vladimir DVORKIN,
Professor

Chairman of the Organizing
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The Role of the UN Security Council and the IAEA in the Strengthening of the NPT Regime

Rolf EKEUS, Ambassador

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After the four senior American statesmen (Shultz, Perry, Nunn, and Kissinger) surprised the world in 2007 with a joint statement favoring a world free of nuclear weapons, the lethargy that has characterized international considerations of nuclear weapons policies since the end of the Cold War turned into an almost enthusiastic outbreak of interest in nuclear weapons disarmament and non-proliferation matters. In a speech in Prague in 2009, President Obama set forth a commitment to advance toward a world free of nuclear weapons. This set the tone for progress in U.S.-Russian negotiations for reductions in their strategic arsenals, leading to the New START, the Treaty on Measures for the Further Reduction and Limitation of Strategic Offensive Arms. As regards nuclear non-proliferation, the UN Security Council, with fourteen heads of state and government present, unanimously adopted Resolution 1887, reaffirming the support of the Security Council for the goals of the NPT, including nuclear disarmament and strengthening the NPT-regime, at the same time urging action to reduce the threat of nuclear terrorism.

This development has had a positive impact on non-nuclear-weapon states, especially the non-aligned states, which are not positioned under the nuclear umbrella, the deterrence assurances provided by the United States to its allies. However, among the non-aligned states, there are those that feel that the disarmament undertakings under the NPT have not been implemented to a degree that corresponds to the obligations of the non-nuclear-weapon states under the Treaty.

Should the non-proliferation regime survive in the long run, the duality as regards nuclear and non-nuclear states must gradually be reduced. Proliferation pressure is most obvious in the Middle East region, where political and security divisions and tensions tend to make the nuclear weapons option a distinct reality. As an expression of this concern, the 2010 NPT Review Conference unanimously called for a conference to be convened in 2012 by the UN Secretary-General and the co-sponsors of the resolution (Russia, the U.K., and the U.S.), to be attended by all states of the Middle East, on the establishment of a Middle East zone free of nuclear weapons and all other weapons of mass destruction.

The NPT bargain is important, as it provides the non-nuclear-weapon states with assurances of support, as all NPT states have undertaken to facilitate the exchange of technology and equipment for the peaceful uses of nuclear energy, especially in the non-nuclear-weapon States Party to the Treaty.

A special case in this context is the U.S.-India agreement, which may constitute an effort to bring India into the NPT-regime. However the actual implementation appears to defeat that purpose, as India, a non-NPT state and a harsh critic of the Treaty, now can get access to nuclear technology from the Nuclear Suppliers Group, NSG, without any NPT/IAEA comprehensive safeguards and even less Additional Protocol-type control. Thus, by granting India the privileges of an NPT member state, but without the obligations of an NPT state, e.g. under Article VI, the NSG states undermine the rationale for joining the NPT. The message is that non-nuclear states that contemplate acquiring nuclear weapons, can count on a forgiving attitude from the NSG in the long run. Now any non-nuclear-weapon state may have second thoughts about their commitment to the Treaty.

The IAEA Safeguards and Their Shortcomings

The undertaking by each of the non-nuclear-weapon States Party to the Non-Proliferation Treaty to enter into a safeguards agreement with the IAEA and to accept safeguards for the purpose of verification constitutes the foundation of the verification of the implementation of the Treaty. The explicit details of a verification system for this very purpose have been developed in the context of the operations of the IAEA.

The obligation of a non-nuclear-weapon State Party to the Treaty is to make a comprehensive safeguards agreement, which requires the State to declare all nuclear material and facilities to the IAEA, and even to maintain nuclear accounting records and to report all relevant changes.

The IAEA is mandated to conduct inspections to verify the correctness of the declarations. In addition to site visits, the verification activities can include camera surveillance and environmental sampling of the declared facilities and nuclear material.

The fundamental point in this context is that the comprehensive nature of a "comprehensive safeguards agreement" is limited to declared facilities only. When the Treaty was negotiated and drafted, it was believed that nuclear fuel cycle development outside declared facilities would not be realizable, but this turned out to be wrong, as was shown in the case of Iraq. Thus, when the verification activities mandated by the Security Council (under resolution 687) were applied by UNSCOM/IAEA in Iraq, inspections disclosed a wide range of activities, including different approaches to the enrichment of nuclear fuel and some quantities of plutonium that had been separated. None of this had been registered in the comprehensive safeguards inspections. Even violations of safeguards agreements by Iran, Libya, and Syria have gradually confirmed that comprehensive safeguards verifications are not designed to detect deliberate violation of the non-proliferation regime.

These experiences regrettably demonstrate that, as regards the norms for weapons of mass destruction, the principle of *Pacta sunt servanda* (treaties shall be respected and executed) does not always apply. Ronald Reagan's dictum "Trust but verify" would be more suitable. The limitation of comprehensive safeguards verification to declared facilities only does not

exclude the possibility that member states can assist in confidence building by providing the IAEA safeguards department with detection technologies, including satellite imagery and national technical means (intelligence data).

However, after the experience of the clear failure of the IAEA safeguards system in the case of Iraq, it has become a broadly accepted view that a verification system limited to declared facilities and activities only must be strengthened. The IAEA Model Additional Protocol, introduced in 1997 as a voluntary legal instrument, could draw extensively from the experiences of the IAEA/UNSCOM inspections in Iraq. What was new with the Additional Protocol was to make it possible for the IAEA to access more extensive information on nuclear-related activity in manufacturing, exports and imports, and more importantly, to provide inspectors with broader rights to visit and investigate nuclear sites and nuclear-related locations.

At present time, most non-nuclear-weapon States (105), including many with extensive nuclear programs, have signed the Additional Protocol. However, five states with significant nuclear activities — Argentina, Brazil, Egypt, Syria, and Venezuela — have not adopted the Additional Protocol. Iran, having adopted the Protocol in 2003, stated in February 2007 that it would no longer act in accordance with the provisions of the Protocol.

In the case of Iran, the IAEA indicates that its experts should have the possibility to investigate the entire range of possible nuclear activities that are necessary for the manufacture of nuclear weapons or explosive devices, like the conversion of fissile material into metallic form and the development and acquisition of high-explosive lenses or of high-energy electrical components.

A complicating factor is the question of whether the IAEA has the expertise and competence to deal with weapons designs and weapons development in addition to its high quality work in verifying nuclear material. Furthermore, from a non-proliferation point of view, it is questionable whether weapons development and production know-how should be made easily available to a multilateral organization like the IAEA. The risks are obvious that such highly sensitive knowledge could be widely dispersed internationally, causing serious harm to the international non-proliferation regime.

Fundamentally, the problem with the Additional Protocol is that states engaged in advanced nuclear-related activities refuse to adhere to it. The motivations differ from being political to being technical. As indicated earlier, the outsiders deeply dislike the discriminating character of the non-proliferation regime in favor of nuclear-weapon states and cannot accept the addition of further obligations for the non-nuclear-weapon states. Proposals that the NSG states should limit their exports of nuclear material only to states that have adopted the Additional Protocol could create serious international tensions and could be counterproductive. On the other hand, proposals that the nuclear-weapon states also take on new responsibilities, e.g. in the form of increased transparency as regards their weapon programs, as recently demonstrated by the U.S. administration, are welcome, but they are considered far from sufficient to redress the imbalances or modify the perceived imbalances in the implementation of the NPT.

Improving the Political Support for the IAEA

Little, short of substantial reductions of the nuclear weapons arsenal, indicating the launch of processes toward the elimination of nuclear weapons, could satisfy the non-aligned states outside the U.S. nuclear guarantees, the “non-umbrella” states. This does not exclude the positive reception of reform proposals as regards the role of the IAEA and the UN, if they indicate a shared concern about the dangers of a world that is not free of nuclear weapons.

One such proposal was the initiative by former IAEA Director General Mohammed El-Baradei, aimed at a multilateralized nuclear fuel cycle to diminish the quest for national fuel cycles and to guarantee states that are considering developing peaceful nuclear energy programs a safe supply of civilian nuclear reactor technology and reactor fuel. Supportive of this is the nuclear fuel bank, as originally proposed by the Nuclear Threat Initiative (NTI). The bank should stand as a guarantor of the supply of nuclear fuel to civilian nuclear energy projects. The financing of the system is based upon a grant by the NTI and by contributions from the U.S. government, the European Union, and others. The nuclear fuel bank is now operational as a part of an IAEA-related organizational set-up. The non-aligned states have

accepted this system but emphasize that the existence of the bank should not be allowed to call into question the rights of the parties under the NPT to develop their own national enrichment capability for peaceful purposes. This position does not mean that these states are necessarily endorsing Director General El-Baradei's multilateralization plan. Alternatively, nuclear-weapon states, e.g. Russia and the United States, offer certain assurances about the delivery of LEU for peaceful purposes, but the major nonaligned non-nuclear-weapon states appear not to be impressed.

The Role of the UN Security Council in the Iraqi Experience

In 1991 the Security Council took the initiative to create its own verification disarmament unit with its Resolution 687, the ceasefire resolution after the Kuwait war in 1991. The Special Commission, UNSCOM, became the first subsidiary organ of the Council and was tasked with supervising the removal and destruction of Iraqi weapons of mass destruction, relevant delivery systems, and measures to prevent their reconstitution. Concerning specifically the nuclear weapons dimension of the decision by the Security Council, the Director General of the IAEA was given the responsibility of the supervision. It was thus not the IAEA organization, with its institutional structures and decision-making bodies, that was to carry out the task of supervising the destruction and elimination of the proscribed nuclear-related items.

To fulfill his obligations, the Director General set up an Action Team with the necessary expertise, but independent of the IAEA formal structures. Through the Action Team, the Director General could carry out his task of verifying and accounting for the nuclear facilities declared by Iraq. UNSCOM had to provide the financing for the Action Team's operations. Regarding corresponding non-declared locations relevant for nuclear verification and supervision, it was left to the Executive Chairman of UNSCOM to designate locations for inspections by the Action Team, which had to carry out their operations with the assistance and cooperation of UNSCOM.

Two points concerning principles should be made in this context:

- To give the IAEA, a Specialized Agency within the UN family, a highly intrusive task with complex political and security dimensions was

considered not suitable for the Agency's institutional set-up and decision-making structures (the General Conference and the Board of Governors), which could not be adapted to the kind of systematic operational activities that were expected for the verification and disarmament task ahead. Another problem in this context was that the verification task was not only limited to IAEA's specialty of nuclear fuel matters but could be expected to relate to weapons technology and weapons design, with potential weapons proliferation significance.

- The fact that the Security Council did not authorize the Director General of the IAEA to act with regard to non-declared facilities and activities without a designation from UNSCOM was an expression of the principle established in the preambular part of the cease-fire resolution, namely the commitment to the sovereignty, territorial integrity, and political independence of Iraq. The Security Council was thus not ready to farm out to the IAEA or its Director-General any rights that could challenge the territorial integrity of Iraq. Instead, it was the Council's own subsidiary organ, UNSCOM, that, under the Council's supervision, should be politically responsible for handling and judging such sensitive issues as the consequences of designating non-declared locations for investigation.

The creation of UNSCOM and the related institutional construction is unique in contemporary history. The earlier historical example is the Control Commission tasked with disarming Germany after World War I. In contrast to the Control Commission, the UNSCOM/DGIAEA (later called the UNSCOM/IAEA) operation turned out to be a remarkable success. Stiff resistance by the Iraqi authorities with regard to the weapons declarations, access for inspectors, and, generally obstructive practices challenged the inspectors in the implementation of their task. However, a united Security Council gave constant and continuous political support with strong statements and sometimes threatening language. With that solid political backing, the UNSCOM operations continued effectively until 1998, when the U.S. bombing of Iraq made the continuation of work impossible, and UNSCOM/IAEA was forced to terminate the inspection and verification activities in the country.

The UNSCOM/IAEA inspections combined a "search and destroy" mission with an ongoing monitoring verification system, OMV, set up by

UNSCOM and the Action Team and approved by the Security Council in Resolution 715, which, in addition to site inspections, encompassed document searches, interviews, air sampling, overhead photography from U2 flight surveillance, sampling equipment, satellite imagery, ground penetrating radar, and intelligence provided by governments. The monitoring applied no-notice inspections at locations where activities suspected of involving the development, production, or storage of prohibited items could take place. The special strength of the system was that as a rule inspections were led by seasoned experts in their field: nuclear, chemical, biological, and missile technology.

The definite evaluation of the quality and efficiency of the UNSCOM/IAEA verification and inspection work in Iraq from 1991 to 1998 could not be made until the end of the Iraq war in 2003, when the U.S. and allied troops had occupied the country. The final assessment of the post-war evaluation carried out by the American-Iraqi Survey Group led to the conclusion that UNSCOM/IAEA had already accomplished its task completely in 1997, in accordance with ceasefire Resolution 687 and subsequent Resolutions 707 and 715. In other words, all prohibited items, facilities, and capabilities had been identified and destroyed.

The UNMOVIC inspection system, which was to replace UNSCOM (dissolved in the context of the break-up of the earlier seven years of the Council's unified support), was set up by the Security Council in 1999. As was proven later, UNMOVIC had no prohibited items to look for. Its operations in Iraq immediately before the outbreak of the Iraq war in 2003 were limited to four months only (compared to UNSCOM's eight years).

A Permanent Subsidiary Organ of the UN Security Council

As a consequence of the indisputable success and accomplishments of the control and verification systems set up by the Security Council for Iraq, a number of proposals have been launched. The common denominator for these proposals has been that the Security Council should consider the establishment of a subsidiary organ on a permanent basis for the verification and supervision of suspected proliferation breakouts with regard

to all matters involving weapons of mass destruction. The focus as regards nuclear weapons should be on weapons, weaponization, and weapons production. There should thus not be a duplication of IAEA activities as regards nuclear fuel, HEU, and plutonium. As in the case of UNSCOM/IAEA cooperation, the subsidiary organ could address the questions of inspections or site visits by IAEA inspection teams to non-declared facilities. Such decisions should take into account the principles of national sovereignty and territorial integrity. The subsidiary organ should base its authority on decisions by the Security Council. At the same time, the subsidiary organ should be able and have competence to alert the Security Council to possible threats of proliferation and related events.

An organizational structure of the UNSCOM type would also be responsible for investigating what the Security Council could consider possible threats of chemical or biological weapons use, production, and acquisition. The subsidiary organ should closely follow developments regarding nuclear weapons proliferation by analyzing and gathering information from governments and by following and evaluating trade patterns and tendencies. The NW competence of the subsidiary organ must be carefully protected, both when selecting staff and by the handling of sensitive incoming data. The staffing of the unit would follow the UNSCOM model of recruiting both seasoned scientific experts and personnel with operational experience and training for the inspection activities. Weapons analysts should be placed at the headquarters, reachable by the Security Council. A roster of weapons inspectors should be kept ready in their home countries; they should be regularly trained and updated and be available to be summoned on short notice.

The Non-Proliferation Treaty after the 2010 NPT Review Conference

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Introduction

It is my great honor and pleasure to speak to this distinguished body on its fifth anniversary. Having attended the first Luxembourg Forum, and a number of its subsequent meetings in Rome, Vienna, and Washington, D.C., it is instructive to reflect on what has changed with respect to nuclear proliferation in the past five years — for good and for bad — and what we can expect in the next several years. As my particular mandate from the meeting organizers is to address the NPT after the 2010 NPT Review Conference, I will focus my remarks on how the NPT has changed since 2010 and what we can anticipate in the lead-up to the 2015 NPT Review Conference. My remarks are informed by having participated as a delegate at the 2010 NPT Rev Con and the recently concluded 2012 NPT PrepCom, although I am speaking today very much in my personal capacity.

The Promise of the 2010 NPT Review Conference Final Document

Arguably, the most important innovation of the 2010 Rev Con was its adoption of a set of specific forward-looking recommendations in the form of action items. This approach generated an Action Plan with 64 specific benchmarks against which NPT States parties could be judged during the subsequent review cycle on all of the Treaty's three pillars — i.e., disarmament, non-proliferation, and peaceful use.

The Conference also was noteworthy for reaching a consensus Final Document, which was only possible because of the compromise language adopted related to recommendations on the Middle East. While no one was entirely satisfied by that language, absent the flexibility displayed by many key parties — including the United States and many members of the Non-Aligned Movement, who reluctantly agreed to subordinate a number of their priority disarmament objectives to the single-minded goal related to language on the Middle East pursued by a very determined and talented NAM Chair from Egypt — it would have been impossible to have forged a consensus Final Document. It is very important to recall this point as we look forward to the 2015 NPT Review Conference, because it suggests that the consensus that was reached in 2010 is more fragile than many observers appreciate and could unravel rather quickly if certain developments do not transpire — most importantly the convening of the 2012 Middle East Conference.

I also would note that the 2010 Review Conference demonstrated that the NPT review process is a very different beast than the UN Security Council or the Nuclear Security Summit Process. Although this should not have been a surprise, it appeared to have been for many Western diplomats in 2010, who expected there to be more enthusiasm at the NPT forum for initiatives linked to countering nuclear terrorism, promoting the Additional Protocol as a legally-binding verification instrument, or securing support for multinational nuclear fuel arrangements or modification in the NPT withdrawal process. This observation is not intended as an argument against the logic of such initiatives, but it is a reminder that they are unlikely to succeed unless their advocates take into greater account the

perspectives of key NAM states that may not oppose the objectives of these initiatives, but have major reservations about the manner in which they typically are pursued.

Finally, with respect to the 2010 Review Conference, I would observe that the disarmament provisions in the 2010 Final Document are both more and less than meet the eye. On the one hand, the Document contains a number of very positive elements, including the first reference in a Rev Con consensus document to the importance of implementing the recommendations of the UN Experts Group on Disarmament and Nonproliferation Education (Action 22), reference to the Secretary General's 5-point proposal for nuclear disarmament (including, *inter alia*, "consideration of negotiation on a nuclear weapons convention..."), and recognition of the humanitarian dimension to the problem of nuclear weapons. These are substantial accomplishments and reflect a much greater flexibility on disarmament issues on the part of the U.S. government and some of the other NWS. According to my reading, however, the document is actually weaker in some respects than elements in the "13 Practical Steps" from 2000, specifically with respect to the role of nuclear weapons in states' security doctrines and with reference to reducing the operational status of nuclear weapons. Perhaps most significantly, the consensus Final Document masks the very pronounced divergence of views between NWS and NNWS over disarmament matters — a gulf that was clearly reflected in debates in Main Committee 1 and Subsidiary Body 1 and was much larger than many had anticipated following the so-called arms control spring of 2010. Thus, although Egypt was able to persuade NAM to support a consensus Rev Con document because it included language it sought on the ME, this "consensus" should not be interpreted as very deep, especially as it relates to disarmament issues.

The 2012 PrepCom: Calm before the Storm?

For all practical purposes, the real business of the 2012 NPT PrepCom was accomplished in the first hour of the meeting on Monday, April 30th, when the Chair successfully gained adoption of his draft agenda and indicative time-table — items that had stalled the 2007 PrepCom and paralyzed the

2005 NPT Review Conference. In the eyes of many delegates, the rest of the 2012 meeting was a "non-event." While this assessment may overstate the case, it also is not far off the mark. Thanks to the very careful and inclusive consultations undertaken by Australian Ambassador Peter Woolcott in advance of the 2012 PrepCom and the inclination of most States parties to hold their fire on issues associated with the 2012 Middle East Conference until the end of the year, the PrepCom came to a "smooth conclusion," as Chinese diplomats would say. To the extent that there was any suspense at the meeting it related to whether or not the DPRK would choose to conduct its third nuclear test during the PrepCom, and if it tested, how the PrepCom should respond.

As is usually the case at PrepComs, a great deal of energy is invested by NNWS in reserving time for debate on issues related to nuclear disarmament, but when the time comes for the debate, few have much to say and even fewer are prepared to abandon their prepared texts and engage in an interactive exchange of views. This PrepCom was no different in this respect, and as a consequence, the Cluster 1 debate on disarmament issues ended early. Perhaps the most interesting and unanticipated development in the disarmament discussion was the breadth and depth of support across different political groupings for marshalling international humanitarian law and the humanitarian consequences of nuclear weapons to spur action on disarmament within the review process. The NWS appeared to be somewhat surprised by the support these issues generated at the PrepCom, and in its response the United States, in particular, sought to circumscribe language in the 2010 Final Document that might be interpreted as encouraging this approach. In contrast, support for a legally binding Nuclear Weapons Convention did not appear to have gained noticeably more support than existed in 2010.

The only extended debate that was intense or unscripted took place on the morning of May 8 following the report by the Facilitator for the 2012 Middle East Conference, Finnish Under-Secretary of State Jaako Laajava. Although most parties praised the work of the Facilitator, it also was clear that some of the key states who participated in the debate would have preferred for the entire enterprise to disappear; others would have liked

to see it delayed, while still others would have liked it to be accelerated. Interestingly, the most heated deliberations reportedly took place among members of the Arab League and between them and other NAM representatives. Some of these differences were evident in the statements made on behalf of NAM, the Arab League, and Egypt, with NAM staking out the most extreme position and the Arab League the most moderate.

Ambassador Woolcott had made it very clear from the outset of the PrepCom that he would not seek to negotiate a final document that required a consensus decision, but would instead submit a Chairman's Factual Summary as a Working Paper that reflected his assessment of the support for the various items discussed during the meeting. This approach, along with his extensive consultations and the use of a formula that distinguished among "States parties," "some parties," and "many States parties" enabled the Chair to depict in a balanced and inclusive fashion most of the discussion that transpired during the PrepCom. As such, the Chairman's report was well received by all those who chose to speak (including the United States and Iran), and only the Russian Federation found it necessary to caution that further steps in nuclear disarmament will only be possible if strategic stability is maintained, a situation it claimed was now being tested by global missile defense.

Implications and Conclusion

Let me conclude by relating the recent developments I have recounted within the NPT review process to the broader proliferation challenges that often appear to be outside the scope or reach of NPT diplomacy. These include issues such as the growing risk of nuclear terrorism, regional nuclear insecurity and arms racing, enforcement of treaty noncompliance, and nuclear force modernization and doctrinal developments at odds with NPT Article VI obligations. I don't have time at this meeting to elaborate on these points, but I would make the following brief observations.

1. One can only ask so much of the NPT. Procedural issues — most importantly a reliance on consensus decision-making — is both cumbersome and ensures a lowest common denominator approach in the NPT review

process. Much of the heavy lifting on issues that have never been central to the NPT, such as the dangers posed by non-state actors and regional arms racing, will have to be addressed outside of the NPT context, although hopefully making full use of international institutions such as the IAEA and in a manner consistent with the NPT.

2. Until there is the resumption of a meaningful Middle East peace process, it is hard to imagine more than perfunctory implementation of the 1995 Middle East Resolution or progress at a Middle East Conference such as that mandated by the 2010 NPT Final Document. That being said, failure to convene a Middle East Conference in 2012 (or at least prior to the 2013 NPT PrepCom, scheduled to begin in April of next year), almost certainly will lead to a disastrous second NPT PrepCom session and the unraveling of many elements of the consensus documents, including those related to nuclear disarmament.

3. While one should acknowledge the modest progress that has been made on the disarmament front in the two years since the 2010 NPT Review Conference, there is need for much greater and timely action. Both the United States and Russia need to disabuse themselves of the notion that they can leisurely assess the implementation of the New START Treaty without investing significantly in exploring creative next steps in advancing nuclear disarmament. Given domestic political obstacles to ratifying legally binding accords, it may be necessary to revisit an approach involving reciprocal or parallel unilateral measures both with respect to force reductions and strategic doctrine. In my view, such reciprocal measures would make particular sense in areas such as limitations on deployments of NSNWs, extending time available for decisions about launching nuclear weapons, and acceptance of transparency measures at all nuclear test sites in advance of entry into force of the CTBT. In addition, both governments would do well to pointedly address the big question of how their enormous nuclear arsenals contribute to reducing the major national security threats they discern.

4. While a great deal correctly is expected of the NWS — and especially the United States and Russia — when it comes to disarmament, the NNWS also have a role to play. To the extent that they are delinquent in

ratifying relevant disarmament treaties such as the CTBT and neglect implementation of their NWFZ treaty commitments (e.g., obligations not to engage in nuclear trade with countries lacking full-scope safeguards or the Additional Protocol), they reduce their own moral standing and diminish their potential influence in promoting full implementation of Article VI.

5. Finally, as my CNS colleague Gaukhar Mukhatzhanova and I have sought to explore in our recent new book on "Nuclear Politics and the Non-Aligned Movement," progress on most of the major issues involving nuclear disarmament, non-proliferation, and peaceful use will require far more cross-bloc cooperation than is currently the case. Finding convergent interests and common ground between the NWS and NAM members within the NPT, in turn, will require much more nuanced views by both groupings about the policies and priorities of the other. In addition, it will be necessary to pursue non-proliferation policies that apply equally to all states. Moreover, if the past decade is any guide, non-proliferation headway is more likely to be made when states voluntarily adopt measures they regard to be in their self interest such as the Additional Protocol than if they are told they must do so.

As we note in our book, achieving a broad-based agreement takes longer than passing a Security Council resolution or launching an initiative of a few like-minded states. However, in searching for solutions to the nuclear predicament, it is desirable for all parties to heed an African proverb: *"If you want to go fast, walk alone; if you want to go far, walk together."*



SESSION 3



Chairman –
Sergey OZNOBISHCHEV,
Ph.D.

**Director of the Institute for Strategic
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India and Pakistan's Role in a Multi-polar Nuclear World

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In two profound ways India and Pakistan's nuclear programs bear on the Luxembourg Forum's concern with "preventing nuclear catastrophe:" first, in affecting strategic stability between nuclear-weapons states (NWS) and, second, in aiding or obstructing the spread of nuclear weapons to states without them (NNWS). Moreover, these two dimensions unfold in a post-Cold War nuclear world with several disturbing features, and India and Pakistan figure in two of the most disturbing.

First, while the strategic nuclear arms race during the Cold War was essentially a single-vector phenomenon between the United States and the Soviet Union, today's version is already multi-vector. China is as much a player in the tensions over ballistic missile defense or the weaponization of space as the United States and Russia. India's nuclear program keys on China (as much as Pakistan) and will impinge on China's response to U.S. strategic nuclear weapons programs. Chinese nuclear developments, in turn, figure in the Indian-Pakistani nuclear competition. As a result, while the scale of the U.S. and Russian arsenals swamp those of others and remain the central issue, the dynamic that will shape the nuclear world of the

future increasingly depends on the complex intersections among multiple nuclear relationships. None — including the Indian-Pakistani rivalry — will be simply bilateral, let alone merely a side effect of U.S. and Russian nuclear trends.

Second, the threat inherent in the proliferation of nuclear weapons is no longer simply generic — i.e., the increased probability of a nuclear weapon going off — but now the risk is that nuclear weapons will fall into the hands of terrorist organizations or states that would or might use them recklessly. (Phrasing the threat in these terms does not mean that the response should also be normative rather than generic. For any non-proliferation regime to be effective, the rules should be universal and non-discriminatory.)

The Threat to Strategic Stability in a Multi-Vectored Nuclear Arms Race

Although the concept of strategic stability is often victim to varied and sloppy use, here it is meant in its original sense: a situation in which the structure and character of nuclear forces do not create an incentive for a disarming first strike in a crisis. India and Pakistan, in their part of a multi-vector arms race, are not contributing to, but instead jeopardizing strategic stability. This manifests itself in two respects: through the vertical proliferation inherent in the increase and modernization of weapons and through the destabilizing evolution of nuclear doctrine.

In the first half of 2012, Pakistan tested five new nuclear-capable missiles, including the *Hatf-9* tactical (battlefield) ballistic missile, the *Hatf-8* air-launched medium-range cruise missile, the modified *Shaheen-1A* intermediate-range ballistic missile, and the *Hatf-7*, a high maneuverability, terrain hugging missile with radar avoidance features designed to strike vital counterforce targets all along the India-Pakistan border and coastline. In May it announced the induction of a new headquarters for its Naval Strategic Force Command, described as the "custodian of the nation's second strike capability." With Chinese assistance it is completing the fourth Khushab nuclear reactor to accelerate production of plutonium with the express aim of building a large number of smaller nuclear weapons.

In April India tested the *Agni-V* 5000-kilometer ballistic missile with a three-warhead capacity and announced that the *Agni-VI*, an 8-10,000-kilometer ICBM capable of transporting up to ten warheads, would be ready by mid-2014. (Both missiles bring Beijing within range and presumably have a Chinese mission.) In 2013 it intends to commission the first of three ballistic missile submarines, an important step toward mounting a long-intended strategic nuclear "triad." In May the head of the Indian Defense Research and Development Organization announced the near readiness of an antimissile shield to protect New Delhi and Mumbai.

While in theory some of these initiatives might be seen as contributing to strategic stability, by moving the two sides away from their previous dependence on highly vulnerable delivery systems (F-16 aircraft and stationary cruise-missile sites), in reality, this is unlikely, given the asymmetric advantage India enjoys as the action-reaction unfolds.

The evolution of Indian and Pakistani nuclear doctrine contributes the second element that is debilitating to strategic stability. India's 1999 draft doctrine highlighted a commitment to "credible minimum deterrence," "no first use," and the principle that the "sole purpose" of its nuclear weapons is effectively nuclear deterrence. In fall 2010, however, India's national security advisor, Shivshankar Menon, signaled a shift from a pure no-first-use doctrine to no first use against "non-nuclear states." When in 2011 Pakistan's President Zardari indicated that his country would adopt a no-first-use posture, Army chief of staff, General Ashfaq Parvez Kayani, quickly repudiated the prospect. Pakistan's standard position is that it cannot afford a no-first-use doctrine in the face of India's conventional superiority.

More threatening, however, are operational concepts that apparently guide the Pakistani approach to actual nuclear use. Pakistan is said to see its tactical nuclear-capable missiles with so-called "shoot and scoot" characteristics — such as the *Hatf-9* — as the answer to India's Cold Start doctrine, built around the idea of a swift conventional incursion into Pakistan. Further, there is evidence that Pakistani planners believe that if battlefield nuclear weapons are used on Pakistani soil to repel an invading conventional Indian force, it will not risk nuclear escalation.²⁴

²⁴ Separate conversations with senior Pakistani security specialists reported by two participants in the 5th Luxembourg

The Threat of Nuclear Proliferation

Historically India and Pakistan have been near polar opposites in their relationship to the nuclear non-proliferation regime. Pakistan, while long resisting accession to the NPT as long as India refuses to join, has many times over many years proposed a variety of measures that would constrain nuclear proliferation in South Asia. Yet, at the same time, through complicity in the illicit transfer of nuclear technology, it has done immense damage to the NPT regime. On the one hand, Pakistan has annually introduced a resolution in the UN General Assembly in favor of a nuclear-weapon-free zone in South Asia, a bilateral Indian-Pakistani nuclear test ban (1987), five-nation talks on nuclear proliferation in South Asia (1991), and a multilateral conference on security, arms control, and non-proliferation (1996). On the other hand, not simply Abdul Qadeer Khan's network but the shadowy activity of Pakistani agencies directly abetted the proliferation of nuclear weapons — such as the 2000 transfer of used P-1 centrifuges to North Korea that led to its secret uranium enrichment program, to the undoing of the 1994 Agreed Framework, and subsequently to North Korea's withdrawal from the NPT in January 2003.

India, in contrast, has from the beginning rejected the Non-Proliferation Treaty as discriminatory — initially because of the eligibility rule in Article I but over time because of the unequal application of the so-called three “pillars” in the NPT (the linked commitments to non-proliferation by the NNWS and to disarmament by the NWS and the right to the peaceful use of nuclear technology for all). On the other hand, India has scrupulously guarded its weapons material and technology against commercial and illicit export. Since the 1998 tests, it has committed itself to observing Article I and III of the NPT.

Moreover, by its recent willingness to join the Nuclear Suppliers Group (NSG), the Missile Technology Control Regime (MTCR), the Australia Group, and the Wassenaar Arrangement, India is helping to strengthen a broader nuclear non-proliferation regime of which the NPT is a part.²⁵ At

the same time, India's recent success in cutting deals with the United States and other countries giving it access to civilian nuclear technology and fuel has harmed efforts to shore up the nuclear non-proliferation regime in at least three ways: by reinforcing the conviction among the states in the non-aligned movement that the NWS pick and choose the rules they are willing to observe; by complicating the Iran issue (India privileged as a non-NPT member; Iran punished as an NPT member); and by further undermining the objective of NPT universality and the tie between vertical and horizontal nuclear proliferation in Article VI of the treaty.

In short, India in particular but also Pakistan pose a conundrum: How to deal with an India as a pivotal member of the non-proliferation regime that is not and almost certainly will not be a member of the NPT? And a Pakistan that has a shaky history as an influence on the non-proliferation regime, and that has few near-term prospects of joining its extended institutional framework, and virtually no possibility of becoming a member of the NPT?

Connecting the Two Dimensions

At every turn linkages exist between the ways the Indian-Pakistani nuclear competition blurs into a multi-vectored arms race and the impact that their nuclear postures have on efforts to prevent the spread of nuclear weapons. India, notwithstanding its attitude toward the NPT, has long embraced the idea of nuclear disarmament — but not until China reduces its weapons and fissile material. (The commonplace assumption is that China will not consider engaging in multilateral strategic arms control until the United States and Russia cross the 1000-warhead threshold through further reductions.)

India regularly votes against a nuclear-weapon-free zone for South Asia in the General Assembly on the grounds that China would stand outside. When in a 2011 joint Nuclear Threat Initiative-India working group on non-proliferation, the U.S. participants proposed increased Indian transparency of nuclear forces and materials, the Indian side balked unless China were to do the same.²⁶ Pakistan, in turn, conditions its position on everything

Forum (Berlin), June 4, 2012. Since Pakistani officials believe such an attack is highly probable, say, in the case of a repeat of the 2008 Mumbai terrorist attack, this almost certainly deluded notion appears particularly dangerous.

²⁵ Little in India's changing nuclear status and actions, however, is straightforward. Thus, the 2005-2008 U.S.-India nuclear deals that *de facto* consummated India's status as an NWS and created an incentive for India to join the NSG have measurably weakened the NSG by diluting its norms.

²⁶ Teresita Schaffer with Joan Rohlfing, *India and the Non-Proliferation System* (Nuclear Threat Initiative, November 2011), p. 18.

from membership in the NPT to its current veto on discussion of the Fissile Material Cut-Off Treaty in the UN Committee on Disarmament on the India factor.

These linkages create the underlying context helping to shape a multi-vectored arms race — latent earlier but now active with each new phase in the growth and modernization of nuclear forces among the NWS. It promises to render a nuclear world far more complex and unpredictable than its Cold War predecessor. To the extent that the NWS, beginning with Russia and United States, feel no urgency to deal with this looming reality, the graver will be the perils that it poses.

Finding Solutions for the Iranian Nuclear Issue

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Iran's nuclear program provides many reasons for concern. One positive aspect is that the key nations of the world largely agree on the aspects of the problem and are working together toward a solution. Sanctions are seriously impacting Iran and have persuaded Tehran to come to the negotiating table without preconditions. The situation remains very dangerous, however, because Iran continues to accumulate a nuclear hedge in order to be able to produce nuclear weapons in a short time if a decision is made to do so.

There are civilian aspects to Iran's nuclear program, but even Iranian officials acknowledge that the enriched uranium is a strategic asset. It is important not to exaggerate the Iranian challenge but not to ignore the dangers. Even if Iran does not reach the point of building a nuclear weapon, it could spark a proliferation cascade in the Middle East and even a war.

We are generally agreed on the nature of the problem because of the evidence presented quarterly by the International Atomic Energy Agency. The salient facts are that Iran now has accumulated enough low-enriched uranium for at least four nuclear weapons, if further enriched, and the

stockpile is growing faster: one-third more low-enriched uranium is produced every month than last year. This product is not needed for any civilian purpose, because Russia supplies the fuel for Iran's only reactor at Bushehr, and if this supply ever stopped, there are various fuel bank and other supply guarantee mechanisms that Iran could utilize.

Iran's emphasis is now 20% enriched uranium, which is very close to being weapons-usable. Some analysts say the stockpile of 20% enriched uranium is almost enough for a nuclear weapon. In my analysis, this is an exaggeration. Iran has produced 145 kilograms, 44 kg of which has been converted to an oxide form that is not readily usable for nuclear weapons. Theoretically, 185 kg of 20% enriched product is needed for a weapon, but for the first weapon this amount should be doubled. Still, 20% presents a very serious concern, and Iran has at least four times as many centrifuges producing 20% as it did a year ago. Most of this work takes place at the Fordow facility, buried under 80 to 90 meters of rock.

Iran also continues to work on more advanced centrifuges, although one bright spot is that this work has not yet been successful. This is because of sanctions that have prevented Iran from acquiring the carbon fiber, maraging steel, and other materials necessary for the advanced centrifuges. However, eventually Iran will probably be producing enriched uranium at an even faster pace.

Let us not forget that there is also the plutonium problem, as mentioned by Mr. Kantor in his opening presentation. Iran's heavy water reactor at Arak is also experiencing some problems because of sanctions and export controls, but it is scheduled to come online in the third quarter of next year.

In addition to this fissile material, Iran has been working on weaponization. This work was revealed in detail in the November IAEA report, which showed how comprehensively Iran had been pursuing almost every aspect of weaponization. It even acquired a nuclear weapons design from the A. Q. Khan network that was apparently more advanced than what Libya acquired from the network. It is not clear how far this weaponization work progressed before the structured program was suspended in autumn 2003, nor is it clear how much of this weaponization work continued after 2003

and how much continues today. It was notable that in the November report, of the 65 paragraphs in the annex that discussed the weaponization work, only four related to work conducted after 2003.

The question of how far Iran advanced its weaponization work is very relevant, because if one seeks to assess how close Iran is to being able to produce a nuclear weapon, the major unknown factor is how long it would take to weaponize. We can easily calculate how long it would take to produce enough highly-enriched uranium, although there are some differences in opinion as to how much might be wasted at the beginning. I had estimated that six months was a minimum for weaponization, and hence I agree with what Mr. Kantor said yesterday, that Iran is approximately one year away from a nuclear weapon — if it were to make the corresponding decision. However, some U.S. analysts assume that Iran already can easily weaponize, and therefore one only has to look at the time for producing enough highly-enriched uranium.

The timeline for producing one bomb is not so relevant, because Iran would need a handful to have a real deterrent, which would take a couple of years. There still is time then for diplomacy. An Iranian nuclear weapon is not inevitable. Still it's no wonder that many of the countries in the Middle East in particular are very worried about Iran's progress, and that there is talk of a preventive war to stop Iran's progress. It would be a mistake to attack before Iran has made a decision to build nuclear weapons, because it would cause Iran to put all the resources of the country into this very purpose.

U.S. Secretary of Defense Leon Panetta reportedly predicted earlier this year that Israel probably would attack Iran in April, May, or June. The talk of an Israeli attack has been quieted, however, because of the talks that have been initiated. I want to make it clear that Israel is not the problem. The problem is Iran, but one cannot ignore this possibility of a military attack. To offer my prediction, I would say that if Iran begins to produce nuclear weapons or takes steps that are an inevitable precursor of producing nuclear weapons such as producing highly-enriched uranium or expelling the IAEA or testing a weapon, the United States would launch a pre-emptive attack against Iran's facilities.

President Obama has said clearly that he would not accept a nuclear-armed Iran. He clearly stated that for the United States, the red line is the production of a nuclear weapon. Israel has referred to a different red line: an Iranian nuclear weapons capability. I do not know what this means. A capability is not one particular point; it's a spectrum, and Iran already has the capability. But if the current round of diplomacy fails to limit Iran's uranium enrichment program, by September or October before the U.S. presidential election, and depending on how the U.S. election appears to be going, I think we will possibly see an Israeli preventive attack.

There are many variables in this prediction, including what limits on Iran's program might be reached as a result of the current round of diplomacy. First, to be clear, what is on the table in the current round is not a solution to the Iranian nuclear program. It is only a set of confidence-building measures. Iran has been asked to do three things: to stop the 20% enrichment, to export the 20% stockpile, and to stop the activity at Fordow.

The initial round in Istanbul was positive. The mood turned sour in the second round in Bangkok. This is not surprising. Nations typically hold to hard lines at the beginning of negotiations and only after some rounds begin to show some compromises. But I am worried that the expectations were set very high for these talks. Iran was talking about seeking the lifting of sanctions. This ignores the political reality in Washington in which Obama is already accused of appeasement and cannot provide too much in the way of compromise. The U.S. Congress would not accept any lifting of sanctions.

Talking about the EU lifting its sanctions ignores the reality of the EU decision-making process. EU sanctions on oil will come into play on the first of July unless all 27 member states agree to suspend them. It takes a consensus to now change what has been decided. The six nations that are negotiating with Iran have also set expectations that are too high in the way they talk about Iran making compromises without receiving any sanctions relief in return.

Sanctions certainly are hurting Iran. That is why the Iranians are at the talks, but they're not hurting enough to offer a compromise without having some face-saving means of making a concession. Iran will need some lifting

of some sanctions in order to make it politically feasible in Tehran to make any concessions.

So we need to find some calibration of sanctions relief and Iranian limitations. I think a freeze might be possible: no more sanctions, no more additional centrifuges, and no more work at Fordow. But at least we should hope that the three confidence-building measures that have been tabled will be accepted by Iran. This is more likely if the six nations keep their consensus and keep a united front. If Iran is able to find divisions among the six, it will not accept all three of those conditions, and if Iran does not accept all three of those conditions, the prospects for the kind of military action that I mentioned earlier are heightened.

Let us hope that we may reach success in limiting Iran's program.

Overcoming the North Korean Nuclear Deadlock

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To solve the North Korean nuclear deadlock, mid- to long-term non-proliferation measures are needed at the international legal and organizational levels (multilateral export arms control, dual technology control regimes), based on voluntary cooperation by member states, with respect to: the Non-Proliferation Treaty, the International Atomic Energy Agency, the Missile Technology Control Regime (MTCR), the Nuclear Suppliers Group (NSG), the Nuclear Security Summit (NSS), the United Nations Security Council (UNSC) resolutions, sanctions, measures, etc., including streamlining and rationalizing these entities, as discussed in the first gathering of Luxembourg Forum in 2007.

It is also necessary to provide enforcement and to establish much stronger counter-proliferation measures beyond the voluntary level, using even coercive diplomacy, involving not only state but also non-state actors, such as: the Container Security Initiative (CSI) at the legal, human (biological) level, and the intrusive Proliferation Security Initiative (PSI), targeting financial modules — accounts of the North Korean leadership abroad and also related

companies involved in illicit trade, not only with respect to counterfeit pharmaceuticals, cigarettes, alcohol, and treasury notes, but also involving money laundering, endangered species trafficking, and other illicit activities (i.e., insurance fraud). Special priority should definitely be given to the proliferation to third countries of weapons of mass destruction (WMD) with respect to nuclear, chemical, and bacteriological weapons and their delivery means, including conventional weapons (about \$500 million-1 billion per annum).

Measures of coercive diplomacy should be implemented, not ruling out the military option, to address testing of WMDs, missile launches, and parallel asymmetrical warfare capability (electronic/psychological warfare, local provocation at sea and on land, special commando operations, long-range artillery and nuclear, chemical, and bacteriological capabilities) by either delaying or canceling the United States Forces in Korea (U.S.F.K.) operational command authority (OPCON) to the Republic of Korea (ROK), and extending the existing 300-kilometer (km) missile treaty between the U.S. and the ROK to 1,000 km (which excludes cruise missiles).

This list could also include strengthening Japanese, South Korean, Taiwanese, and U.S. anti-air defense, ballistic missile defense capability (procuring multiple Precision-Guided Munitions [PGMs], smart weapons), AEGIS, AWACS systems, and drone systems; taking measures to enhance South Korean C4ISR (communication, control, computer, command, intelligence, surveillance, and reconnaissance) capability; countering North Korea's coastal infiltration capability by procuring advanced coastal radar systems; strengthening the U.S.-Korean Extended Deterrence Policy Committee; redressing the departure of the U.S. 2nd Infantry Division (2nd ID) and the U.S.F.K., which was cannibalized for the wars in Iraq and Afghanistan (20,000 troop withdrawal from South Korea); and possibly reintroducing U.S. tactical nuclear weapons.

Some other measures may be mentioned: coercive diplomacy by pressuring China's political and economic support (energy and food aid); increasing military exercise/war games with the participation of Japan, the ROK, and the U.S.; keeping the KPA stretched; depleting resources; sowing confusion within the KPA and military; disrupting the financial network (blocking payments); and engaging in psychological warfare (leaflets, broadcasts, balloons, CDs, cellular devices, etc.)

Meanwhile consideration should be given to North Korea's WMD capability within the context of its asymmetrical capability (vertical proliferation) and the transfer, co-production, and training of other state and non-state actors (horizontal proliferation) as a source of income.

Some principal figures give the impression of the existing "balance." In FY 2010, North Korea's defense expenditures were approximately \$8.5 billion or 22-24% of GNP, while South Korea's defense expenditures were \$25 billion or 2.6% of GNP. The GNP of South Korea is 40 times larger than that of North Korea. Consideration should also be given to such factors as the North Korean famine (2012), the energy sector crisis, great inflation, and the transition of power to Kim, Jong-Eun.

There are certain peculiarities in the North Korean domestic situation, and there is the challenge of relying on nepotism (Aunt Kim, Kyung-Hee, Uncle Jang, Sung-Taek) in the military and the Korean Workers' Party (KWP), but balancing them by empowering Lee, Young-Ho in the military and Choi, Yeongae in the KWP, who protect Kim, Jong-Eun.

Another process should be mentioned: that of strengthening the KWP over the military by adding two heads of military and political security agencies as two additional members of the Political Bureau (Politbureau) of the KWP: the Ministry of Public Security and the newly created Department of Public Security within the Ministry of Public Security, whose role is to watch over society/the body politic as well as key military sectors.

In the nearest future measures should be expected to solidify Kim, Jong-Eun's leadership (post-Kim, Jong-Il's leadership) and enhance state legitimacy based on nationalism (the revised constitution declaring the nuclear state as a major feat of Kim, Jong-Il, the failed missile launch last month, and the military parade).

The situation may be expected to follow the pre-existing scenario. There may be prolonged development of the military ability to hurt South Korea, without provoking an all-out response from the U.S.-Korean Combined Forces Command (CFC), i.e., asymmetrical capability: the 2010 stealth torpedoing of the South Korean *Chonam Corvet*; the expansion of North Korean Special Operation Forces (SPA) from 100,000 to 200,000 men; and the recent electronic warfare against critical infrastructure (frequent hacking of South Korean

government websites and national security personnel, cyber-warfare against financial centers, and Electronic Warfare [EWA] against key transportation/communication hubs, including Incheon airport last month, which is in the range of lethal Long-Range Artillery [LRA], Self-Propelled Guns [SPGs], and Multiple Rocket Launchers [MRLs], which have a range between 27.5 km and 70 km and can be tipped with nuclear, chemical, or biological weapons).

North Korea presumably will continue the development of short-, medium-, and long-range missiles, 100 km-2,400 km, in targeting Japanese, Republic of Korea, and U.S. forces, military installations (e.g., the 2010 Yeonpyung Island shelling), airfields, and political and industrial centers (Seoul). The export of delivery means components via the People's Republic of China's territory or air space will be prolonged. In this context, the role and position of China and Russia on these issues is important in the UNSC sanction committee.

The development of eight to twelve nuclear bombs and the possible miniaturization of nuclear yields with between 0.5 kt and 1 kt explosive power can be expected. New developments may take place in missiles, conventional weapons (multiple rocket launchers, anti-tank rockets, firearms, ammunition, and naval weapons — small submarines and torpedoes), and nuclear technology, driven by the Second Economic Committee of the National Defense Commission, the Military Arms Production Department of the KWP, and the General Bureau of Atomic Energy.

Military cooperation and transfers will be going on with: Angola (conventional weapons); Burma (a uranium refining and enrichment plant, missiles); the Democratic Republic of the Congo (conventional weapons); Egypt (missiles, conventional weapons); Ethiopia (conventional weapons); Indonesia (conventional weapons); Iran (plutonium reprocessing, uranium enrichment, nuclear devices, missiles, conventional weapons); Libya (uranium hexafluoride via the A. Q. Khan network, missiles); Pakistan (missiles); Sudan (conventional weapons); Syria (plutonium production, missiles, chemical/conventional weapons); the United Arab Emirates (UAE) (missiles); Vietnam (missiles, conventional weapons); and Yemen (missiles).

To overcome the North Korean nuclear deadlock, China, Japan, Russia, South Korea, and the United States — in broad terms, the West and the international community — have to implement stronger, more robust measures.



APPENDICES

APPENDIX 1

Declaration of the Fifth Anniversary Conference of the International Luxembourg Forum on Preventing Nuclear Catastrophe (June 4–5, 2012, Berlin)

Participants of the Conference appreciate the significant work undertaken by the Luxembourg Forum on Preventing Nuclear Catastrophe since its inception five years ago.

During this time the Luxembourg Forum conducted twelve conferences, workshops, and seminars dedicated to the most important and urgent problems concerning nuclear disarmament, non-proliferation, and international security. Representatives of the Luxembourg Forum have met with high officials of the leading nations and international organizations, among them, Minister of Foreign Affairs of the Russian Federation Sergey Lavrov, First Deputy Minister of Foreign Affairs of the Russian Federation Andrey Denisov, Deputy Minister of Foreign Affairs of the Russian Federation Sergey Ryabkov, Deputy Minister of Defense of the Russian Federation Anatoly Antonov, Acting Under Secretary of State Rose Gottemoeller, and Director General of the IAEA Mohamed El-Baradei.

During the last five years the Luxembourg Forum has addressed U.S.-Russian security relationships as well as regional conflicts and broader proliferation matters. The Luxembourg Forum has published eight books

and booklets reflecting the discussions and findings of the conference and workshops. On the basis of the meetings of the Luxembourg Forum the participants adopted twelve final documents, which were presented to the leaders of both regional and global states and organizations (the UN, IAEA, OSCE, EU, NATO, and CSTO). In response to these final documents a number of letters of support and encouragement were received, among them letters from the Secretary General of the United Nations, the President of the European Commission, and the Secretary General of the North Atlantic Treaty Organization.

The Luxembourg Forum received direct commendations from Presidents of the Russian Federation Vladimir Putin and Dmitry Medvedev and Minister of Foreign Affairs Sergey Lavrov. The activity of the Forum was mentioned in the speeches of officials, works of well known specialists, and reports of the international expert community.

The Luxembourg Forum fully endorses the vision of a nuclear-weapon-free world revived by prominent American statesmen (George P. Shultz, William J. Perry, Henry A. Kissinger, and Sam Nunn) and supported by many well-known political and public figures

of a number of other countries, including the Russian Federation (Yevgeny Primakov, Igor Ivanov, Yevgeny Velikhov, and Mikhail Moiseev). The activities of the Luxembourg Forum have been aimed at promoting this idea in various practical ways and agreements pertaining to specific issues of nuclear non-proliferation and disarmament.

The participants of the Fifth Anniversary Conference are deeply concerned by the new deadlock and growing controversies among the great powers, foremost between Russia and the United States, over the prospects and conditions for further nuclear disarmament and non-proliferation. This is all the more disheartening after considerable breakthroughs achieved in the context of the "reset" of Russian-American security relations in 2009 through 2012: the signing and ratification of the New START Treaty, the successful outcome of the Eighth Review Conference of the Treaty on the Non-Proliferation of Nuclear Weapons, and the adoption of the documents of Nuclear Security Summits in Washington and Seoul.

In the meantime, the arms race, as well as the proliferation of nuclear weapons and delivery systems, is continuing in the world. Regional crises and armed conflicts, as well as acts of non-state terror, may escalate in scale, geographic distribution, level of destruction, and number of fatalities. This is especially the case in the Middle East, South Asia, and the Korean Peninsula as extensively debated at the UN and the IAEA. These problems were in the center of the discussions of the Luxembourg Forum.

The participants of the Fifth Anniversary Conference of the International Luxembourg Forum on Preventing Nuclear Catastrophe dedicated to "Contemporary Problems of Nuclear Non-Proliferation" call on the leaders of the Russian Federation and of the United States, their allies, and all responsible nations, as well as international

organizations, to apply the necessary political will, flexibility, and ingenuity in order to overcome the present impasse and resume consistent steps along the path of nuclear disarmament, enhancing non-proliferation regimes and facilitating cooperative international security in general.

APPENDIX 2

Normative Documents on Nuclear Non-Proliferation

2.1. The Treaty on the Non-Proliferation of Nuclear Weapons, July 1, 1968; Moscow, London and Washington

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, encourage, 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 Depositaries 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. United Nations Security Council Resolution 1874 (North Korea), June 12, 2009; New-York

The Security Council,

Recalling its previous relevant resolutions, including resolution 825 (1993), resolution 1540 (2004), resolution 1695 (2006), and, in particular, resolution 1718 (2006), as well as the statements of its President of 6 October 2006 (S/PRST/2006/41) and 13 April 2009 (S/PRST/2009/7),

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 nuclear test conducted by the Democratic People's Republic of Korea ("the DPRK") on 25 May 2009 (local time) in violation of resolution 1718 (2006), and at the challenge such a test constitutes to the Treaty on Non-Proliferation of Nuclear Weapons ("the NPT") and to international efforts aimed at strengthening the global regime of non-proliferation of nuclear weapons towards the 2010 NPT Review Conference, and the danger it poses to peace and stability in the region and beyond,

Stressing its collective support for the NPT and commitment to strengthen the Treaty

in all its aspects, and global efforts towards nuclear non-proliferation and nuclear disarmament, and recalling that the DPRK cannot have the status of a nuclear-weapon state in accordance with the NPT in any case,

Deploing the DPRK's announcement of withdrawal from the NPT and its pursuit of nuclear weapons,

Underlining once again the importance that the DPRK respond to other security and humanitarian concerns of the international community,

Underlining also that measures imposed by this resolution are not intended to have adverse humanitarian consequences for the civilian population of the DPRK,

Expressing its gravest concern that the nuclear test and missile activities carried out by the DPRK have further generated increased tension in the region and beyond, and determining that there continues to exist a clear threat to international peace and security,

Reaffirming the importance that all Member States uphold the purposes and principles of the Charter of the United Nations,

Acting under Chapter VII of the Charter of the United Nations, and taking measures under its Article 41,

1. *Condemns* in the strongest terms the nuclear test conducted by the DPRK on 25 May 2009 (local time) in violation and flagrant disregard of its relevant resolutions, in particular resolutions 1695 (2006) and 1718 (2006), and the statement of its President of 13 April 2009 (S/PRST/2009/7);
2. *Demands* that the DPRK not conduct any further nuclear test or any launch using ballistic missile technology;
3. *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 launches;
4. *Demands* that the DPRK immediately comply fully with its obligations under relevant Security Council resolutions, in particular resolution 1718 (2006);
5. *Demands* that the DPRK immediately retract its announcement of withdrawal from the NPT;
6. *Demands* further that the DPRK return at an early date to the NPT and International Atomic Energy Agency (IAEA) safeguards, bearing in mind the rights and obligations of States Parties to the NPT, and underlines the need for all States Parties to the NPT to continue to comply with their Treaty obligations;
7. *Calls upon* all Member States to implement their obligations pursuant to resolution 1718 (2006), including with respect to designations made by the Committee established pursuant to resolution 1718 (2006) ("the Committee") pursuant to the statement of its President of 13 April 2009 (S/PRST/2009/7);
8. *Decides* that the DPRK shall abandon all nuclear weapons and existing nuclear programs in a complete, verifiable and irreversible manner and immediately cease all related activities, shall act strictly in accordance with the obligations applicable to parties under the NPT and the terms and conditions of the IAEA Safeguards Agreement (IAEA INFCIRC/403) and shall provide the IAEA transparency measures extending beyond these requirements, including such access to individuals, documentation, equipment and facilities as may be required and deemed necessary by the IAEA;
9. *Decides* that the measures in paragraph 8 (b) of resolution 1718 (2006) shall also apply to all arms and related materiel, as well as to financial transactions, technical training, advice, services or assistance related to the provision, manufacture, maintenance or use of such arms or materiel;
10. *Decides* that the measures in paragraph 8 (a) of resolution 1718 (2006) shall also apply to all arms and related materiel, as well as to financial transactions, technical training, advice, services or assistance related to the provision, manufacture, maintenance or use of such arms, except for small arms and light weapons and their related materiel, and calls upon States to exercise vigilance over the direct or indirect supply, sale or transfer to the DPRK of small arms or light weapons, and further decides that States shall notify the Committee at least five days prior to selling, supplying or transferring small arms or light weapons to the DPRK;
11. *Calls upon* all States to inspect, in accordance with their national authorities and legislation, and consistent with international law, all cargo to and from the DPRK, in their territory, including sea-ports and airports, if the State concerned has information that provides reasonable

grounds to believe the cargo contains items the supply, sale, transfer, or export of which is prohibited by paragraph 8 (a), 8 (b), or 8 (c) of resolution 1718 or by paragraph 9 or 10 of this resolution, for the purpose of ensuring strict implementation of those provisions;

12. *Calls upon* all Member States to inspect vessels, with the consent of the flag State, on the high seas, if they have information that provides reasonable grounds to believe that the cargo of such vessels contains items the supply, sale, transfer, or export of which is prohibited by paragraph 8 (a), 8 (b), or 8 (c) of resolution 1718 (2006) or by paragraph 9 or 10 of this resolution, for the purpose of ensuring strict implementation of those provisions;
13. *Calls upon* all States to cooperate with inspections pursuant to paragraphs 11 and 12, and, if the flag State does not consent to inspection on the high seas, decides that the flag State shall direct the vessel to proceed to an appropriate and convenient port for the required inspection by the local authorities pursuant to paragraph 11;
14. *Decides* to authorize all Member States to, and that all Member States shall, seize and dispose of items the supply, sale, transfer, or export of which is prohibited by paragraph 8 (a), 8 (b), or 8 (c) of resolution 1718 or by paragraph 9 or 10 of this resolution that are identified in inspections pursuant to paragraph 11, 12, or 13 in a manner that is not inconsistent with their obligations under applicable Security Council resolutions, including resolution 1540 (2004), as well as any obligations of parties to the NPT, the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction of 29 April 1997, and
15. *Requires* any Member State, when it undertakes an inspection pursuant to paragraph 11, 12, or 13, or seizes and disposes of cargo pursuant to paragraph 14, to submit promptly reports containing relevant details to the Committee on the inspection, seizure and disposal;
16. *Requires* any Member State, when it does not receive the cooperation of a flag State pursuant to paragraph 12 or 13 to submit promptly to the Committee a report containing relevant details;
17. *Decides* that Member States shall prohibit the provision by their nationals or from their territory of bunkering services, such as provision of fuel or supplies, or other servicing of vessels, to DPRK vessels if they have information that provides reasonable grounds to believe they are carrying items the supply, sale, transfer, or export of which is prohibited by paragraph 8 (a), 8 (b), or 8 (c) of resolution 1718 (2006) or by paragraph 9 or 10 of this resolution, unless provision of such services is necessary for humanitarian purposes or until such time as the cargo has been inspected, and seized and disposed of if necessary, and underlines that this paragraph is not intended to affect legal economic activities;
18. *Calls upon* Member States, in addition to implementing their obligations pursuant to paragraphs 8 (d) and (e) of resolution 1718 (2006), to prevent the provision of financial services or the transfer to, through, or from their territory, or to or by their nationals or entities organized under their laws (including branches

the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction of 10 April 1972, and decides further that all States shall cooperate in such efforts;

- abroad), or persons or financial institutions in their territory, of any financial or other assets or resources that could contribute to the DPRK's nuclear-related, ballistic missile-related, or other weapons of mass destruction-related programs or activities, including by freezing any financial or other assets or resources on their territories or that hereafter come within their territories, or that are subject to their jurisdiction or that hereafter become subject to their jurisdiction, that are associated with such programs or activities and applying enhanced monitoring to prevent all such transactions in accordance with their national authorities and legislation;
19. *Calls upon* all Member States and international financial and credit institutions not to enter into new commitments for grants, financial assistance, or concessional loans to the DPRK, except for humanitarian and developmental purposes directly addressing the needs of the civilian population, or the promotion of denuclearization, and also calls upon States to exercise enhanced vigilance with a view to reducing current commitments;
 20. *Calls upon* all Member States not to provide public financial support for trade with the DPRK (including the granting of export credits, guarantees or insurance to their nationals or entities involved in such trade) where such financial support could contribute to the DPRK's nuclear-related or ballistic missile-related or other WMD-related programs or activities;
 21. *Emphasizes* that all Member States should comply with the provisions of paragraphs 8 (a) (iii) and 8 (d) of resolution 1718 (2006) without prejudice to the activities of the diplomatic missions in the DPRK pursuant to the Vienna Convention on Diplomatic Relations;
 22. *Calls upon* all Member States to report to the Security Council within forty-five days of the adoption of this resolution and thereafter upon request by the Committee on concrete measures they have taken in order to implement effectively the provisions of paragraph 8 of resolution 1718 (2006) as well as paragraphs 9 and 10 of this resolution, as well as financial measures set out in paragraphs 18, 19 and 20 of this resolution;
 23. *Decides* that the measures set out at paragraphs 8 (a), 8 (b) and 8 (c) of resolution 1718 (2006) shall also apply to the items listed in INFCIRC/254/Rev.9/Part 1a and INFCIRC/254/Rev.7/Part 2a;
 24. *Decides* to adjust the measures imposed by paragraph 8 of resolution 1718 (2006) and this resolution, including through the designation of entities, goods, and individuals, and directs the Committee to undertake its tasks to this effect and to report to the Security Council within thirty days of adoption of this resolution, and further decides that, if the Committee has not acted, then the Security Council will complete action to adjust the measures within seven days of receiving that report;
 25. *Decides* that the Committee shall intensify its efforts to promote the full implementation of resolution 1718 (2006), the statement of its President of 13 April 2009 (S/PRST/2009/7) and this resolution, through a work programme covering compliance, investigations, outreach, dialogue, assistance and cooperation, to be submitted to the Council by 15 July 2009, and that it shall also receive and consider reports from Member States pursuant to paragraphs 10, 15, 16 and 22 of this resolution;
 26. *Requests* the Secretary-General to create for an initial period of one year, in consultation with the Committee, a group of up to seven experts ("Panel of Experts"), acting under the direction of the Committee to carry out the following tasks: (a) assist the Committee in carrying out its mandate as specified in resolution 1718 (2006) and the functions specified in paragraph 25 of this resolution; (b) gather, examine and analyze information from States, relevant United Nations bodies and other interested parties regarding the implementation of the measures imposed in resolution 1718 (2006) and in this resolution, in particular incidents of non-compliance; (c) make recommendations on actions the Council, or the Committee or Member States, may consider to improve implementation of the measures imposed in resolution 1718 (2006) and in this resolution; and (d) provide an interim report on its work to the Council no later than 90 days after adoption of this resolution, and a final report to the Council no later than 30 days prior to termination of its mandate with its findings and recommendations;
 27. *Urges* all States, relevant United Nations bodies and other interested parties, to cooperate fully with the Committee and the Panel of Experts, in particular by supplying any information at their disposal on the implementation of the measures imposed by resolution 1718 (2006) and this resolution;
 28. *Calls upon* all Member States to exercise vigilance and prevent specialized teaching or training of DPRK nationals within their territories or by their nationals, of disciplines which could contribute to the DPRK's proliferation-sensitive nuclear activities and the development of nuclear weapon delivery systems;
 29. *Calls upon* the DPRK to join the Comprehensive Nuclear-Test-Ban Treaty at the earliest date;
 30. *Supports* peaceful dialogue, calls upon the DPRK to return immediately to the Six Party Talks without precondition, and urges all the participants to intensify their efforts on the full and expeditious implementation of the Joint Statement issued on 19 September 2005 and the joint documents of 13 February 2007 and 3 October 2007, by China, the DPRK, Japan, the Republic of Korea, the Russian Federation and the United States, with a view to achieving the verifiable denuclearization of the Korean Peninsula and to maintain peace and stability on the Korean Peninsula and in north-east Asia;
 31. *Expresses* its commitment to a peaceful, diplomatic and political solution to the situation and welcomes efforts by Council members as well as other Member States to facilitate a peaceful and comprehensive solution through dialogue and to refrain from any actions that might aggravate tensions;
 32. *Affirms* that it shall keep the DPRK's actions under continuous review and that it shall be prepared to review the appropriateness of the measures contained in paragraph 8 of resolution 1718 (2006) and relevant paragraphs of this resolution, 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 relevant provisions of resolution 1718 (2006) and this resolution;
 33. *Underlines* that further decisions will be required, should additional measures be necessary;
 34. *Decides* to remain actively seized of the matter.
- Source:** United Nations Security Council Resolution 1874/ United Nations' official site// <http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N09/368/49/PDF/N0936849.pdf?OpenElement>.

2.3. United Nations Security Council Resolution 1929 (Iran), June 9, 2010; New-York

The Security Council,

Recalling the Statement of its President, S/PRST/2006/15, and its resolutions 1696 (2006), 1737 (2006), 1747 (2007), 1803 (2008), 1835 (2008), and 1887 (2009) 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 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,

Noting with serious concern that, as confirmed by the reports of 27 February 2006 (GOV/2006/15), 8 June 2006 (GOV/2006/38), 31 August 2006 (GOV/2006/53), 14 November 2006 (GOV/2006/64), 22 February 2007

(GOV/2007/8), 23 May 2007 (GOV/2007/22), 30 August 2007 (GOV/2007/48), 15 November 2007 (GOV/2007/58), 22 February 2008 (GOV/2008/4), 26 May 2008 (GOV/2008/15), 15 September 2008 (GOV/2008/38), 19 November 2008 (GOV/2008/59), 19 February 2009 (GOV/2009/8), 5 June 2009 (GOV/2009/35), 28 August 2009 (GOV/2009/55), 16 November 2009 (GOV/2009/74), 18 February 2010 (GOV/2010/10) and 31 May 2010 (GOV/2010/28) of the Director General of the International Atomic Energy Agency (IAEA), Iran has not established full and sustained suspension of all enrichment-related and reprocessing activities and heavy water-related projects as set out in resolutions 1696 (2006), 1737 (2006), 1747 (2007) and 1803 (2008) nor resumed its cooperation with the IAEA under the Additional Protocol, nor cooperated with the IAEA in connection with the remaining issues of concern, which need to be clarified to exclude the possibility of military dimensions of Iran's nuclear programme, nor taken the other steps required by the IAEA Board of Governors, nor complied with the provisions of Security Council resolutions 1696 (2006), 1737 (2006), 1747

(2007) and 1803 (2008) and which are essential to build confidence, and *deploring* Iran's refusal to take these steps,

Reaffirming that outstanding issues can be best resolved and confidence built in the exclusively peaceful nature of Iran's nuclear programme by Iran responding positively to all the calls which the Council and the IAEA Board of Governors have made on Iran,

Noting with serious concern the role of elements of the Islamic Revolutionary Guard Corps (IRGC, also known as "Army of the Guardians of the Islamic Revolution"), including those specified in Annex D and E of resolution 1737 (2006), Annex I of resolution 1747 (2007) and Annex II of this resolution, in Iran's proliferation-sensitive nuclear activities and the development of nuclear weapon delivery systems,

Noting with serious concern that Iran has constructed an enrichment facility at Qom in breach of its obligations to suspend all enrichment-related activities, and that Iran failed to notify it to the IAEA until September 2009, which is inconsistent with its obligations under the Subsidiary Arrangements to its Safeguards Agreement,

Also noting the resolution of the IAEA Board of Governors (GOV/2009/82), which urges Iran to suspend immediately construction at Qom, and to clarify the facility's purpose, chronology of design and construction, and calls upon Iran to confirm, as requested by the IAEA, that it has not taken a decision to construct, or authorize construction of, any other nuclear facility which has as yet not been declared to the IAEA,

Noting with serious concern that Iran has enriched uranium to 20 per cent, and did so without notifying the IAEA with sufficient time for it to adjust the existing safeguards procedures,

Noting with concern that Iran has taken issue with the IAEA's right to verify design

information which had been provided by Iran pursuant to the modified Code 3.1, and *emphasizing* that in accordance with Article 39 of Iran's Safeguards Agreement Code 3.1 cannot be modified nor suspended unilaterally and that the IAEA's right to verify design information provided to it is a continuing right, which is not dependent on the stage of construction of, or the presence of nuclear material at, a facility,

Reiterating its determination to reinforce the authority of the IAEA, strongly supporting the role of the IAEA Board of Governors, and *commending* the IAEA for its efforts to resolve outstanding issues relating to Iran's nuclear programme,

Expressing 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,

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* in this regard the efforts of Turkey and Brazil towards an agreement with Iran on the Tehran Research Reactor that could serve as a confidence-building measure,

Emphasizing also, however, in the context of these efforts, the importance of Iran addressing the core issues related to its nuclear programme,

Stressing that China, France, Germany, the Russian Federation, the United Kingdom and the United States are willing to take further concrete measures on exploring an overall strategy of resolving the Iranian nuclear issue through negotiation on the basis of their June 2006 proposals (S/2006/521) and their June 2008 proposals (INFCIRC/730), and

noting the confirmation by these countries that once the confidence of the international community in the exclusively peaceful nature of Iran's nuclear programme is restored it will be treated in the same manner as that of any Non-Nuclear Weapon State Party to the Treaty on the Non-Proliferation of Nuclear Weapons,

Welcoming the guidance issued by the Financial Action Task Force (FATF) to assist States in implementing their financial obligations under resolutions 1737 (2006) and 1803 (2008), and *recalling* in particular the need to exercise vigilance over transactions involving Iranian banks, including the Central Bank of Iran, so as to prevent such transactions contributing to proliferation-sensitive nuclear activities, or to the development of nuclear weapon delivery systems,

Recognizing that access to diverse, reliable energy is critical for sustainable growth and development, while noting the potential connection between Iran's revenues derived from its energy sector and the funding of Iran's proliferation-sensitive nuclear activities, and *further noting* that chemical process equipment and materials required for the petrochemical industry have much in common with those required for certain sensitive nuclear fuel cycle activities,

Having regard to States' rights and obligations relating to international trade,

Recalling that the law of the sea, as reflected in the United Nations Convention on the Law of the Sea (1982), sets out the legal framework applicable to ocean activities,

Calling for the ratification of the Comprehensive Nuclear-Test-Ban Treaty by Iran at an early date,

Determined to give effect to its decisions by adopting appropriate measures to persuade Iran to comply with resolutions 1696 (2006), 1737 (2006), 1747 (2007) and 1803 (2008) 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,

Concerned by the proliferation risks presented by the Iranian nuclear programme and mindful of its primary responsibility under the Charter of the United Nations for the maintenance of international peace and security,

Stressing that nothing in this resolution compels States to take measures or actions exceeding the scope of this resolution, including the use of force or the threat of force,

Acting under Article 41 of Chapter VII of the Charter of the United Nations,

1. *Affirms* that Iran has so far failed to meet the requirements of the IAEA Board of Governors and to comply with resolutions 1696 (2006), 1737 (2006), 1747 (2007) and 1803 (2008);
2. *Affirms* that Iran shall without further delay take the steps required by the IAEA Board of Governors in its resolutions GOV/2006/14 and GOV/2009/82, which are essential to build confidence in the exclusively peaceful purpose of its nuclear programme, to resolve outstanding questions and to address the serious concerns raised by the construction of an enrichment facility at Qom in breach of its obligations to suspend all enrichment-related activities, and, in this context, *further affirms* its decision that Iran shall without delay take the steps required in paragraph 2 of resolution 1737 (2006);
3. *Reaffirms* that Iran shall cooperate fully with the IAEA on all outstanding issues, particularly those which give rise to concerns about the possible military dimensions of the Iranian nuclear programme,

including by providing access without delay to all sites, equipment, persons and documents requested by the IAEA, and *stresses* the importance of ensuring that the IAEA have all necessary resources and authority for the fulfillment of its work in Iran;

4. *Requests* the Director General of the IAEA to communicate to the Security Council all his reports on the application of safeguards in Iran;
5. *Decides* that Iran shall without delay comply fully and without qualification with its IAEA Safeguards Agreement, including through the application of modified Code 3.1 of the Subsidiary Arrangement to its Safeguards Agreement, *calls upon* Iran to act strictly in accordance with the provisions of the Additional Protocol to its IAEA Safeguards Agreement that it signed on 18 December 2003, *calls upon* Iran to ratify promptly the Additional Protocol, and *reaffirms* that, in accordance with Articles 24 and 39 of Iran's Safeguards Agreement, Iran's Safeguards Agreement and its Subsidiary Arrangement, including modified Code 3.1, cannot be amended or changed unilaterally by Iran, and *notes* that there is no mechanism in the Agreement for the suspension of any of the provisions in the Subsidiary Arrangement;
6. *Reaffirms* that, in accordance with Iran's obligations under previous resolutions to suspend all reprocessing, heavy water-related and enrichment-related activities, Iran shall not begin construction on any new uranium-enrichment, reprocessing, or heavy water-related facility and shall discontinue any ongoing construction of any uranium-enrichment, reprocessing, or heavy water-related facility;
7. *Decides* that Iran shall not acquire an interest in any commercial activity in another State involving uranium mining, production or use of nuclear materials and technology as listed in INFCIRC/254/Rev.9/Part 1, in particular uranium enrichment and reprocessing activities, all heavy-water activities or technology related to ballistic missiles capable of delivering nuclear weapons, and *further decides* that all States shall prohibit such investment in territories under their jurisdiction by Iran, its nationals, and entities incorporated in Iran or subject to its jurisdiction, or by persons or entities acting on their behalf or at their direction, or by entities owned or controlled by them;
8. *Decides* that all States shall prevent the direct or indirect supply, sale or transfer to Iran, from or through their territories or by their nationals or individuals subject to their jurisdiction, or using their flag vessels or aircraft, and whether or not originating in their territories, 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 of Conventional Arms, or related materiel, including spare parts, or items as determined by the Security Council or the Committee established pursuant to resolution 1737 (2006) ("the Committee"), decides further that all States shall prevent the provision to Iran by their nationals or from or through their territories of technical training, financial resources or services, advice, other services or assistance related to the supply, sale, transfer, provision, manufacture, maintenance or use of such arms and related materiel, and, in this context, *calls upon* all States to exercise vigilance and restraint over the supply, sale, transfer, provision, manufacture and use of all other arms and related materiel;

9. *Decides* that Iran shall not undertake any activity related to ballistic missiles capable of delivering nuclear weapons, including launches using ballistic missile technology, and that States shall take all necessary measures to prevent the transfer of technology or technical assistance to Iran related to such activities;
10. *Decides* that all States shall take the necessary measures to prevent the entry into or transit through their territories of individuals designated in Annex C, D and E of resolution 1737 (2006), Annex I of resolution 1747 (2007), Annex I of resolution 1803 (2008) and Annexes I and II of this resolution, or by the Security Council or the Committee pursuant to paragraph 10 of resolution 1737 (2006), except where such entry or transit is for activities directly related to the provision to Iran of items in subparagraphs 3(b)(i) and (ii) of resolution 1737 (2006) in accordance with paragraph 3 of resolution 1737 (2006), underlines that nothing in this paragraph shall oblige a State to refuse its own nationals entry into its territory, and *decides* that the measures imposed in this paragraph shall not apply when 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 this resolution, including where Article XV of the IAEA Statute is engaged;
11. *Decides* that the measures specified in paragraphs 12, 13, 14 and 15 of resolution 1737 (2006) shall apply also to the individuals and entities listed in Annex I of this resolution and to any individuals or entities acting on their behalf or at their direction, and to entities owned or controlled by them, including through illicit means, and to any individuals and entities determined by the Council or the Committee to have assisted designated individuals or entities in evading sanctions of, or in violating the provisions of, resolutions 1737 (2006), 1747 (2007), 1803 (2008) or this resolution;
12. *Decides* that the measures specified in paragraphs 12, 13, 14 and 15 of resolution 1737 (2006) shall apply also to the Islamic Revolutionary Guard Corps (IRGC, also known as "Army of the Guardians of the Islamic Revolution") individuals and entities specified in Annex II, and to any individuals or entities acting on their behalf or at their direction, and to entities owned or controlled by them, including through illicit means, and calls upon all States to exercise vigilance over those transactions involving the IRGC that could contribute to Iran's proliferation-sensitive nuclear activities or the development of nuclear weapon delivery systems;
13. *Decides* that for the purposes of the measures specified in paragraphs 3, 4, 5, 6 and 7 of resolution 1737 (2006), the list of items in S/2006/814 shall be superseded by the list of items in INFCIRC/254/Rev.9/Part 1 and INFCIRC/254/Rev.7/Part 2, and any further items if the State determines that they could contribute to enrichment-related, reprocessing or heavy water-related activities or to the development of nuclear weapon delivery systems, and further *decides* that for the purposes of the measures specified in paragraphs 3, 4, 5, 6 and 7 of resolution 1737 (2006), the list of items contained in S/2006/815 shall be superseded by the list of items contained in S/2010/263;
14. *Calls upon* all States to inspect, in accordance with their national authorities and legislation and consistent with international law, in particular the law of the sea and relevant international civil aviation agreements, all cargo to and from Iran, in their territory, including seaports and airports, if the State concerned has information that provides reasonable grounds to believe the cargo contains items the supply, sale, transfer, or export of which is prohibited by paragraphs 3, 4 or 7 of resolution 1737 (2006), paragraph 5 of resolution 1747 (2007), paragraph 8 of resolution 1803 (2008) or paragraphs 8 or 9 of this resolution, for the purpose of ensuring strict implementation of those provisions;
15. *Notes* that States, consistent with international law, in particular the law of the sea, may request inspections of vessels on the high seas with the consent of the flag State, and *calls upon* all States to cooperate in such inspections if there is information that provides reasonable grounds to believe the vessel is carrying items the supply, sale, transfer, or export of which is prohibited by paragraphs 3, 4 or 7 of resolution 1737 (2006), paragraph 5 of resolution 1747 (2007), paragraph 8 of resolution 1803 (2008) or paragraphs 8 or 9 of this resolution, for the purpose of ensuring strict implementation of those provisions;
16. *Decides* to authorize all States to, and that all States shall, seize and dispose of (such as through destruction, rendering inoperable, storage or transferring to a State other than the originating or destination States for disposal) items the supply, sale, transfer, or export of which is prohibited by paragraphs 3, 4 or 7 of resolution 1737 (2006), paragraph 5 of resolution 1747 (2007), paragraph 8 of resolution 1803 (2008) or paragraphs 8 or 9 of this resolution that are identified in inspections pursuant to paragraphs 14 or 15 of this resolution, in a manner that is not inconsistent with their obligations under applicable Security Council resolutions, including resolution 1540 (2004), as well as any obligations of parties to the NPT, and *decides* further that all States shall cooperate in such efforts;
17. *Requires* any State, when it undertakes an inspection pursuant to paragraphs 14 or 15 above to submit to the Committee within five working days an initial written report containing, in particular, explanation of the grounds for the inspections, the results of such inspections and whether or not cooperation was provided, and, if items prohibited for transfer are found, *further requires* such States to submit to the Committee, at a later stage, a subsequent written report containing relevant details on the inspection, seizure and disposal, and relevant details of the transfer, including a description of the items, their origin and intended destination, if this information is not in the initial report;
18. *Decides* that all States shall prohibit the provision by their nationals or from their territory of bunkering services, such as provision of fuel or supplies, or other servicing of vessels, to Iranian-owned or -contracted vessels, including chartered vessels, if they have information that provides reasonable grounds to believe they are carrying items the supply, sale, transfer, or export of which is prohibited by paragraphs 3, 4 or 7 of resolution 1737 (2006), paragraph 5 of resolution 1747 (2007), paragraph 8 of resolution 1803 (2008) or paragraphs 8 or 9 of this resolution, unless provision of such services is necessary for humanitarian purposes or until such time as the cargo has been inspected, and seized and disposed of if necessary, and underlines that this paragraph is not intended to affect legal economic activities;
19. *Decides* that the measures specified in paragraphs 12, 13, 14 and 15 of resolution 1737 (2006) shall also apply to the entities of the Islamic Republic of Iran Shipping Lines (IRISL) as specified in Annex III and

- to any person or entity acting on their behalf or at their direction, and to entities owned or controlled by them, including through illicit means, or determined by the Council or the Committee to have assisted them in evading the sanctions of, or in violating the provisions of, resolutions 1737 (2006), 1747 (2007), 1803 (2008) or this resolution;
20. *Requests* all Member States to communicate to the Committee any information available on transfers or activity by Iran Air's cargo division or vessels owned or operated by the Islamic Republic of Iran Shipping Lines (IRISL) to other companies that may have been undertaken in order to evade the sanctions of, or in violation of the provisions of, resolutions 1737 (2006), 1747 (2007), 1803 (2008) or this resolution, including renaming or re-registering of aircraft, vessels or ships, and requests the Committee to make that information widely available;
21. *Calls upon* all States, in addition to implementing their obligations pursuant to resolutions 1737 (2006), 1747 (2007), 1803 (2008) and this resolution, to prevent the provision of financial services, including insurance or re-insurance, or the transfer to, through, or from their territory, or to or by their nationals or entities organized under their laws (including branches abroad), or persons or financial institutions in their territory, of any financial or other assets or resources if they have information that provides reasonable grounds to believe that such services, assets or resources could contribute to Iran's proliferation-sensitive nuclear activities, or the development of nuclear weapon delivery systems, including by freezing any financial or other assets or resources on their territories or that hereafter come within their territories, or that are subject to their jurisdiction or that hereafter become subject to their jurisdiction, that are related to such programmes or activities and applying enhanced monitoring to prevent all such transactions in accordance with their national authorities and legislation;
22. *Decides* that all States shall require their nationals, persons subject to their jurisdiction and firms incorporated in their territory or subject to their jurisdiction to exercise vigilance when doing business with entities incorporated in Iran or subject to Iran's jurisdiction, including those of the IRGC and IRISL, and any individuals or entities acting on their behalf or at their direction, and entities owned or controlled by them, including through illicit means, if they have information that provides reasonable grounds to believe that such business could contribute to Iran's proliferation-sensitive nuclear activities or the development of nuclear weapon delivery systems or to violations of resolutions 1737 (2006), 1747 (2007), 1803 (2008) or this resolution;
23. *Calls upon* States to take appropriate measures that prohibit in their territories the opening of new branches, subsidiaries, or representative offices of Iranian banks, and also that prohibit Iranian banks from establishing new joint ventures, taking an ownership interest in or establishing or maintaining correspondent relationships with banks in their jurisdiction to prevent the provision of financial services if they have information that provides reasonable grounds to believe that these activities could contribute to Iran's proliferation-sensitive nuclear activities or the development of nuclear weapon delivery systems;
24. *Calls upon* States to take appropriate measures that prohibit financial institutions within their territories or under their jurisdiction from opening representative offices or subsidiaries or banking accounts in Iran if they have information that provides reasonable grounds to believe that such financial services could contribute to Iran's proliferation-sensitive nuclear activities or the development of nuclear weapon delivery systems;
25. *Deplores* the violations of the prohibitions of paragraph 5 of resolution 1747 (2007) that have been reported to the Committee since the adoption of resolution 1747 (2007), and *commends* States that have taken action to respond to these violations and report them to the Committee;
26. *Directs* the Committee to respond effectively to violations of the measures decided in resolutions 1737 (2006), 1747 (2007), 1803 (2008) and this resolution, and *recalls* that the Committee may designate individuals and entities who have assisted designated persons or entities in evading sanctions of, or in violating the provisions of, these resolutions;
27. *Decides* that the Committee shall intensify its efforts to promote the full implementation of resolutions 1737 (2006), 1747 (2007), 1803 (2008) and this resolution, including through a work programme covering compliance, investigations, outreach, dialogue, assistance and cooperation, to be submitted to the Council within forty-five days of the adoption of this resolution;
28. *Decides* that the mandate of the Committee as set out in paragraph 18 of resolution 1737 (2006), as amended by paragraph 14 of resolution 1803 (2008), shall also apply to the measures decided in this resolution, including to receive reports from States submitted pursuant to paragraph 17 above;
29. *Requests* the Secretary-General to create for an initial period of one year, in consultation with the Committee, a group of up to eight experts ("Panel of Experts"), under the direction of the Committee, to carry out the following tasks: (a) assist the Committee in carrying out its mandate as specified in paragraph 18 of resolution 1737 (2006) and paragraph 28 of this resolution; (b) gather, examine and analyse information from States, relevant United Nations bodies and other interested parties regarding the implementation of the measures decided in resolutions 1737 (2006), 1747 (2007), 1803 (2008) and this resolution, in particular incidents of non-compliance; (c) make recommendations on actions the Council, or the Committee or State, may consider to improve implementation of the relevant measures; and (d) provide to the Council an interim report on its work no later than 90 days after the Panel's appointment, and a final report to the Council no later than 30 days prior to the termination of its mandate with its findings and recommendations;
30. *Urges* all States, relevant United Nations bodies and other interested parties, to cooperate fully with the Committee and the Panel of Experts, in particular by supplying any information at their disposal on the implementation of the measures decided in resolutions 1737 (2006), 1747 (2007), 1803 (2008) and this resolution, in particular incidents of non-compliance;
31. *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 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21, 22, 23 and 24;
32. *Stresses* the willingness of China, France, Germany, the Russian Federation, the United Kingdom and the United States to further enhance diplomatic efforts to promote dialogue and consultations, including to resume dialogue with Iran on

- the nuclear issue without preconditions, most recently in their meeting with Iran in Geneva on 1 October 2009, with a view to seeking a comprehensive, long-term and proper solution of this issue on the basis of the proposal made by China, France, Germany, the Russian Federation, the United Kingdom and the United States on 14 June 2008, which would allow for the development of relations and wider cooperation with Iran based on mutual respect and the establishment of international confidence in the exclusively peaceful nature of Iran's nuclear programme and, inter alia, starting formal negotiations with Iran on the basis of the June 2008 proposal, and *acknowledges with appreciation* that the June 2008 proposal, as attached in Annex IV to this resolution, remains on the table;
33. *Encourages* the High Representative of the European Union for Foreign Affairs and Security Policy to continue communication with Iran in support of political and diplomatic efforts to find a negotiated solution, including relevant proposals by China, France, Germany, the Russian Federation, the United Kingdom and the United States with a view to create necessary conditions for resuming talks, and *encourages* Iran to respond positively to such proposals;
34. *Commends* the Director General of the IAEA for his 21 October 2009 proposal of a draft Agreement between the IAEA and the Governments of the Republic of France, the Islamic Republic of Iran and the Russian Federation for Assistance in Securing Nuclear Fuel for a Research Reactor in Iran for the Supply of Nuclear Fuel to the Tehran Research Reactor, *regrets* that Iran has not responded constructively to the 21 October 2009 proposal, and *encourages* the IAEA to continue exploring such measures to build confidence consistent with and in furtherance of the Council's resolutions;
35. *Emphasizes* the importance of all States, including Iran, taking the necessary measures to ensure that no claim shall lie at the instance of the Government of Iran, or of any person or entity in Iran, or of persons or entities designated pursuant to resolution 1737 (2006) and related resolutions, or any person claiming through or for the benefit of any such person or entity, in connection with any contract or other transaction where its performance was prevented by reason of the measures imposed by resolutions 1737 (2006), 1747 (2007), 1803 (2008) and this resolution;
36. *Requests* within 90 days a report from the Director General of the IAEA on whether Iran has established full and sustained 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 of Governors and with other provisions of resolutions 1737 (2006), 1747 (2007), 1803 (2008) and of this resolution, to the IAEA Board of Governors and in parallel to the Security Council for its consideration;
37. *Affirms* that it shall review Iran's actions in light of the report referred to in paragraph 36 above, to be submitted within 90 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 of resolution 1747 (2007), paragraphs 3, 5, 7, 8, 9, 10 and 11 of resolution 1803 (2008), and in paragraphs 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21, 22, 23 and 24 above, as soon as it determines, following receipt of the report referred to in the paragraph 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 of Governors; (c) that it shall, in the event that the report shows that Iran has not complied with resolutions 1737 (2006), 1747 (2007), 1803 (2008) 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;
38. *Decides* to remain seized of the matter.
- ANNEX I**
- Individuals and entities involved in nuclear or ballistic missile activities**
- Entities**
- Amin Industrial Complex:** Amin Industrial Complex sought temperature controllers which may be used in nuclear research and operational/production facilities. Amin Industrial Complex is owned or controlled by, or acts on behalf of, the Defense Industries Organization (DIO), which was designated in resolution 1737 (2006).
Location: P.O. Box 91735-549, Mashad, Iran; Amin Industrial Estate, Khalage Rd., Seyedi District, Mashad, Iran; Kaveh Complex, Khalaj Rd., Seyedi St., Mashad, Iran.
A.K.A.: Amin Industrial Compound and Amin Industrial Company
 - Armament Industries Group:** Armament Industries Group (AIG) manufactures and services a variety of small arms and light weapons, including large- and medium-calibre guns and related technology. AIG conducts the majority of its procurement activity through Hadid Industries Complex.
Location: Sepah Islam Road, Karaj Special Road Km 10, Iran; Pasdaran Ave., P.O. Box 19585/777, Tehran, Iran
 - Defense Technology and Science Research Center:** Defense Technology and Science Research Center (DTSRC) is owned or controlled by, or acts on behalf of, Iran's Ministry of Defense and Armed Forces Logistics (MODAFL), which oversees Iran's defence R&D, production, maintenance, exports, and procurement.
Location: Pasdaran Ave, PO Box 19585/777, Tehran, Iran
 - Doostan International Company:** Doostan International Company (DICO) supplies elements to Iran's ballistic missile program.
 - Farasakht Industries:** Farasakht Industries is owned or controlled by, or act on behalf of, the Iran Aircraft Manufacturing Company, which in turn is owned or controlled by MODAFL.
Location: P.O. Box 83145-311, Kilometer 28, Esfahan-Tehran Freeway, Shahin Shahr, Esfahan, Iran
 - First East Export Bank, P.L.C.:** First East Export Bank, PLC is owned or controlled by, or acts on behalf of, Bank Mellat. Over the last seven years, Bank Mellat has facilitated hundreds of millions of dollars in transactions for Iranian nuclear, missile, and defense entities.
Location: Unit Level 10 (B1), Main Office Tower, Financial Park Labuan, Jalan Merdeka, 87000 WP Labuan, Malaysia; Business Registration Number LL06889 (Malaysia)

7. **Kaveh Cutting Tools Company:** Kaveh Cutting Tools Company is owned or controlled by, or acts on behalf of, the DIO.

Location: 3rd Km of Khalaj Road, Seyyedi Street, Mashad 91638, Iran; Km 4 of Khalaj Road, End of Seyyedi Street, Mashad, Iran; P.O. Box 91735-549, Mashad, Iran; Khalaj Rd., End of Seyyedi Alley, Mashad, Iran; Moqan St., Pasdaran St., Pasdaran Cross Rd., Tehran, Iran

8. **M. Babaie Industries:** M. Babaie Industries is subordinate to Shahid Ahmad Kazemi Industries Group (formally the Air Defense Missile Industries Group) of Iran's Aerospace Industries Organization (AIO). AIO controls the missile organizations Shahid Hemmat Industrial Group (SHIG) and the Shahid Bakeri Industrial Group (SBIG), both of which were designated in resolution 1737 (2006).

Location: P.O. Box 16535-76, Tehran, 16548, Iran

9. **Malek Ashtar University:** A subordinate of the DTRSC within MODAFL. This includes research groups previously falling under the Physics Research Center (PHRC). IAEA inspectors have not been allowed to interview staff or see documents under the control of this organization to resolve the outstanding issue of the possible military dimension to Iran's nuclear program.

Location: Corner of Imam Ali Highway and Babaei Highway, Tehran, Iran

10. **Ministry of Defense Logistics Export:** Ministry of Defense Logistics Export (MODLEX) sells Iranian-produced arms to customers around the world in contravention of resolution 1747 (2007), which prohibits Iran from selling arms or related materiel.

Location: PO Box 16315-189, Tehran, Iran; located on the west side of Dabestan Street, Abbas Abad District, Tehran, Iran

11. **Mizan Machinery Manufacturing:** Mizan Machinery Manufacturing (3M) is owned or controlled by, or acts on behalf of, SHIG.

Location: P.O. Box 16595-365, Tehran, Iran

A.K.A.: 3MG

12. **Modern Industries Technique Company:** Modern Industries Technique Company (MITEC) is responsible for design and construction of the IR-40 heavy water reactor in Arak. MITEC has spearheaded procurement for the construction of the IR-40 heavy water reactor.

Location: Arak, Iran

A.K.A.: Rahkar Company, Rahkar Industries, Rahkar Sanaye Company, Rahkar Sanaye Novin

13. **Nuclear Research Center for Agriculture and Medicine:** The Nuclear Research Center for Agriculture and Medicine (NFRPC) is a large research component of the Atomic Energy Organization of Iran (AEOI), which was designated in resolution 1737 (2006). The NFRPC is AEOI's center for the development of nuclear fuel and is involved in enrichment-related activities.

Location: P.O. Box 31585-4395, Karaj, Iran

A.K.A.: Center for Agricultural Research and Nuclear Medicine; Karaji Agricultural and Medical Research Center

14. **Pejman Industrial Services Corporation:** Pejman Industrial Services Corporation is owned or controlled by, or acts on behalf of, SBIG.

Location: P.O. Box 16785-195, Tehran, Iran

15. **Sabalan Company:** Sabalan is a cover name for SHIG.

Location: Damavand Tehran Highway, Tehran, Iran

16. **Sahand Aluminum Parts Industrial Company (SAPICO):** SAPICO is a cover name for SHIG.

Location: Damavand Tehran Highway, Tehran, Iran

17. **Shahid Karrazi Industries:** Shahid Karrazi Industries is owned or controlled by, or acts on behalf of, SBIG.

Location: Tehran, Iran

18. **Shahid Satarri Industries:** Shahid Sattari Industries is owned or controlled by, or acts on behalf of, SBIG.

Location: Southeast Tehran, Iran

A.K.A.: Shahid Sattari Group Equipment Industries

19. **Shahid Sayyade Shirazi Industries:** Shahid Sayyade Shirazi Industries (SSSI) is owned or controlled by, or acts on behalf of, the DIO.

Location: Next To Nirou Battery Mfg. Co, Shahid Babaii Expressway, Nobonyad Square, Tehran, Iran; Pasdaran St., P.O. Box 16765, Tehran 1835, Iran; Babaei Highway — Next to Niru M.F.G, Tehran, Iran

20. **Special Industries Group:** Special Industries Group (SIG) is a subordinate of DIO.

Location: Pasdaran Avenue, PO Box 19585/777, Tehran, Iran

21. **Tiz Pars:** Tiz Pars is a cover name for SHIG. Between April and July 2007, Tiz Pars attempted to procure a five axis laser welding and cutting machine, which could make a material contribution to Iran's missile program, on behalf of SHIG.

Location: Damavand Tehran Highway, Tehran, Iran

22. **Yazd Metallurgy Industries:** Yazd Metallurgy Industries (YMI) is a subordinate of DIO.

Location: Pasdaran Avenue, Next To Telecommunication Industry, Tehran 16588, Iran; Postal Box 89195/878, Yazd, Iran; P.O. Box 89195-678, Yazd, Iran; Km 5 of Taft Road, Yazd, Iran

A.K.A.: Yazd Ammunition Manufacturing and Metallurgy Industries, Directorate of Yazd Ammunition and Metallurgy Industries

INDIVIDUALS

Javad Rahiqi: Head of the Atomic Energy Organization of Iran (AEOI) Esfahan Nuclear Technology Center (additional information: DOB: 24 April 1954; POB: Marshad).

ANNEX II

Entities owned, controlled, or acting on behalf of the Islamic Revolutionary Guard Corps

1. **Fater (or Faater) Institute:** Khatam al-Anbiya (KAA) subsidiary. Fater has worked with foreign suppliers, likely on behalf of other KAA companies on IRGC projects in Iran.
2. **Gharagahe Sazandegi Ghaem:** Gharagahe Sazandegi Ghaem is owned or controlled by KAA.
3. **Ghorb Karbala:** Ghorb Karbala is owned or controlled by KAA.
4. **Ghorb Nooh:** Ghorb Nooh is owned or controlled by KAA.
5. **Hara Company:** Owned or controlled by Ghorb Nooh.
6. **Imensazan Consultant Engineers Institute:** Owned or controlled by, or acts on behalf of, KAA.
7. **Khatam al-Anbiya Construction Headquarters:** Khatam al-Anbiya Construction Headquarters (KAA) is an IRGC-owned company involved in large scale civil and military construction projects and other engineering activities. It undertakes a significant amount of work on Passive Defense Organization projects. In particular, KAA subsidiaries were heavily involved in the construction of the uranium enrichment site at Qom/Fordow.

8. **Makin:** Makin is owned or controlled by or acting on behalf of KAA, and is a subsidiary of KAA.
9. **Omran Sahel:** Owned or controlled by Ghorb Nooh.
10. **Oriental Oil Kish:** Oriental Oil Kish is owned or controlled by or acting on behalf of KAA.
11. **Rah Sahel:** Rah Sahel is owned or controlled by or acting on behalf of KAA.
12. **Rahab Engineering Institute:** Rahab is owned or controlled by or acting on behalf of KAA, and is a subsidiary of KAA.
13. **Sahel Consultant Engineers:** Owned or controlled by Ghorb Nooh.
14. **Sepanir:** Sepanir is owned or controlled by or acting on behalf of KAA.
15. **Sepasad Engineering Company:** Sepasad Engineering Company is owned or controlled by or acting on behalf of KAA.

ANNEX III

Entities owned, controlled, or acting on behalf of the Islamic Republic of Iran Shipping Lines (IRISL)

1. Irano Hind Shipping Company

Location: 18 Mehrshad Street, Sadaghat Street, Opposite of Park Mellat, Valie-Asr Ave., Tehran, Iran; 265, Next to Mehrshad, Sedaghat St., Opposite of Mellat Park, Vali Asr Ave., Tehran 1A001, Iran

2. IRISL Benelux NV

Location: Noorderlaan 139, B-2030, Antwerp, Belgium; V.A.T. Number BE480224531 (Belgium)

3. South Shipping Line Iran (SSL)

Location: Apt. No. 7, 3rd Floor, No. 2, 4th Alley, Gandi Ave., Tehran, Iran; Qaem Magham Farahani St., Tehran, Iran

ANNEX IV

Proposal to the Islamic Republic of Iran by China, France, Germany, the Russian Federation, the United Kingdom of Great Britain and Northern Ireland, the United States of America and the European Union

Presented to the Iranian authorities on 14 June 2008 Teheran

Possible Areas of Cooperation with Iran

In order to seek a comprehensive, long-term and proper solution of the Iranian nuclear issue consistent with relevant UN Security Council resolutions and building further upon the proposal presented to Iran in June 2006, which remains on the table, the elements below are proposed as topics for negotiations between China, France, Germany, Iran, Russia, the United Kingdom, and the United States, joined by the High Representative of the European Union, as long as Iran verifiably suspends its enrichment-related and reprocessing activities, pursuant to OP 15 and OP 19(a) of UNSCR 1803. In the perspective of such negotiations, we also expect Iran to heed the requirements of the UNSC and the IAEA. For their part, China, France, Germany, Russia, the United Kingdom, the United States and the European Union High Representative state their readiness:

to recognize Iran's right to develop research, production and use of nuclear energy for peaceful purposes in conformity with its NPT obligations;

to treat Iran's nuclear programme in the same manner as that of any Non-nuclear Weapon State Party to the NPT once international confidence in the exclusively peaceful nature of Iran's nuclear programme is restored.

Nuclear Energy

— Reaffirmation of Iran's right to nuclear energy for exclusively peaceful purposes

in conformity with its obligations under the NPT.

— Provision of technological and financial assistance necessary for Iran's peaceful use of nuclear energy, support for the resumption of technical cooperation projects in Iran by the IAEA.

— Support for construction of LWR based on state-of-the-art technology.

— Support for R&D in nuclear energy as international confidence is gradually restored.

— Provision of legally binding nuclear fuel supply guarantees.

— Cooperation with regard to management of spent fuel and radioactive waste.

Political

— Improving the six countries' and the EU's relations with Iran and building up mutual trust.

— Encouragement of direct contact and dialogue with Iran.

— Support Iran in playing an important and constructive role in international affairs.

— Promotion of dialogue and cooperation on non-proliferation, regional security and stabilization issues.

— Work with Iran and others in the region to encourage confidence-building measures and regional security.

— Establishment of appropriate consultation and cooperation mechanisms.

— Support for a conference on regional security issues.

— Reaffirmation that a solution to the Iranian nuclear issue would contribute to non-proliferation efforts and to realizing the objective of a Middle East free of weapons of mass destruction, including their means of delivery.

— Reaffirmation of the obligation under the UN Charter to 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 Charter of the United Nations.

— Cooperation on Afghanistan, including on intensified cooperation in the fight against drug trafficking, support for programmes on the return of Afghan refugees to Afghanistan; cooperation on reconstruction of Afghanistan; cooperation on guarding the Iran-Afghan border.

Economic

Steps towards the normalization of trade and economic relations, such as 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.

Energy Partnership

Steps towards the normalization of cooperation with Iran in the area of energy: establishment of a long-term and wide-ranging strategic energy partnership between Iran and the European Union and other willing partners, with concrete and practical applications/measures.

Agriculture

— Support for agricultural development in Iran.

Facilitation of Iran's complete self-sufficiency in food through cooperation in modern technology.

Environment, Infrastructure

— Civilian Projects in the field of environmental protection, infrastructure, science and technology, and high-tech:

- Development of transport infrastructure, including international transport corridors.
- Support for modernization of Iran's telecommunication infrastructure, including by possible removal of relevant export restrictions.

Civil Aviation

- Civil aviation cooperation, including the possible removal of restrictions on manufacturers exporting aircraft to Iran:
- Enabling Iran to renew its civil aviation fleet;
- Assisting Iran to ensure that Iranian aircraft meet international safety standards.

Economic, social and human development/humanitarian issues

- Provide, as necessary, assistance to Iran's economic and social development and humanitarian need.
- Cooperation/technical support in education in areas of benefit to Iran.
- Supporting Iranians to take courses, placements or degrees in areas such as civil engineering, agriculture and environmental studies;
- Supporting partnerships between Higher Education Institutions e.g. public health, rural livelihoods, joint scientific projects, public administration, history and philosophy.
- Cooperation in the field of development of effective emergency response capabilities (e.g. seismology, earthquake research, disaster control etc.).
- Cooperation within the framework of a "dialogue among civilizations".

Implementation mechanism

- Constitution of joint monitoring groups for the implementation of a future agreement.

Source: United Nations Security Council Resolution 1929/ United Nations' official site// <http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N10/396/79/PDF/N1039679.pdf?OpenElement>.

2.4. Seoul Communiqué at the 2012 Nuclear Security Summit, March 27, 2012; Seoul

This communiqué was released in a joint declaration of leaders at the 2012 Seoul Nuclear Security Summit in the Seoul, South Korea on March 27, 2012.

We, the leaders, gathered in Seoul on March 26-27, 2012, renew the political commitments generated from the 2010 Washington Nuclear Security Summit to work toward strengthening nuclear security, reducing the threat of nuclear terrorism, and preventing terrorists, criminals, or other unauthorized actors from acquiring nuclear materials. Nuclear terrorism continues to be one of the most challenging threats to international security. Defeating this threat requires strong national measures and international cooperation given its potential global political, economic, social, and psychological consequences.

We reaffirm our shared goals of nuclear disarmament, nuclear nonproliferation and peaceful uses of nuclear energy.

Committed to seeking a safer world for all, we also all share the objective of nuclear security. We recognize that the Nuclear Security Summit is a valuable process at the highest political level, supporting our joint

call to secure all vulnerable nuclear material in four years. In this regard, we welcome the substantive progress being made on the political commitments of Participating States since the Washington Summit.

We stress the fundamental responsibility of States, consistent with their respective national and international obligations, to maintain effective security of all nuclear material, which includes nuclear materials used in nuclear weapons, and nuclear facilities under their control, and to prevent non-state actors from acquiring such materials and from obtaining information or technology required to use them for malicious purposes. We likewise recognize the fundamental responsibility of States to maintain effective security of other radioactive materials.

We reaffirm that measures to strengthen nuclear security will not hamper the rights of States to develop and utilize nuclear energy for peaceful purposes.

Noting the essential role of the International Atomic Energy Agency (IAEA) in facilitating international cooperation and supporting the efforts of States to fulfill their nuclear security responsibilities, we further stress the

importance of regional and international co-operation, and encourage States to promote cooperation with and outreach activities to international partners.

Noting the Fukushima accident of March 2011 and the nexus between nuclear security and nuclear safety, we consider that sustained efforts are required to address the issues of nuclear safety and nuclear security in a coherent manner that will help ensure the safe and secure peaceful uses of nuclear energy.

We will continue to use the Washington Communiqué and Work Plan as a basis for our future work in advancing our nuclear security objectives. At this Seoul Summit, we agree that we will make every possible effort to achieve further progress in the following important areas.

GLOBAL NUCLEAR SECURITY ARCHITECTURE

1. We recognize the importance of multi-lateral instruments that address nuclear security, such as the Convention on the Physical Protection of Nuclear Material (CPPNM), as amended, and the International Convention for the Suppression of Acts of Nuclear Terrorism (ICSANT). We therefore encourage the universal adherence to these Conventions. We urge states in a position to do so to accelerate their domestic approval of the 2005 Amendment to the CPPNM, seeking to bring the Amendment into force by 2014. We acknowledge the important role of the United Nations (UN) in promoting nuclear security, support the UN Security Council Resolutions 1540 and 1977 in strengthening global nuclear security, and welcome the extension of its mandate. We will strive to use the IAEA Physical Protection of Nuclear Material and Nuclear Facilities (INFCIRC/225/Rev.5) document and related Nuclear Security Series documents, and reflect them into national practice.

2. We recognize the contributions since the 2010 Summit of international initiatives and processes such as the Global Initiative to Combat Nuclear Terrorism (GICNT) and Global Partnership against the Spread of Weapons and Materials of Mass Destruction, within their respective mandates and memberships. We welcome the wider participation in the GICNT and the Global Partnership and value its extension beyond 2012. Noting the importance of strengthening coordination and complementarity among nuclear security activities, we welcome the proposal of the IAEA to organize an international conference in 2013. We welcome contributions from the industry, academia, institutes and civil society that promote nuclear security.

ROLE OF THE IAEA

3. We reaffirm the essential responsibility and central role of the IAEA in strengthening the international nuclear security framework, and recognize the value of the IAEA Nuclear Security Plan 2010-2013. We will work to ensure that the IAEA continues to have the appropriate structure, resources and expertise needed to support the implementation of nuclear security objectives. To this end, we encourage States in a position to do so and the nuclear industry to increase voluntary contributions to the IAEA's Nuclear Security Fund, as well as in-kind contributions. We also encourage continued IAEA activities to assist, upon request, national efforts to establish and enhance nuclear security infrastructure through its various support programs, and encourage States to make use of these IAEA resources.

NUCLEAR MATERIALS

4. Recognizing that highly enriched uranium (HEU) and separated plutonium

require special precautions, we reemphasize the importance of appropriately securing, accounting for and consolidating these materials. We also encourage States to consider the safe, secure and timely removal and disposition of nuclear materials from facilities no longer using them, as appropriate, and consistent with national security considerations and development objectives.

5. We recognize that the development, within the framework of the IAEA, of options for national policies on HEU management will advance nuclear security objectives. We encourage States to take measures to minimize the use of HEU, including through the conversion of reactors from highly enriched to low enriched uranium (LEU) fuel, where technically and economically feasible, taking into account the need for assured supplies of medical isotopes, and encourage States in a position to do so, by the end of 2013, to announce voluntary specific actions intended to minimize the use of HEU. We also encourage States to promote the use of LEU fuels and targets in commercial applications such as isotope production, and in this regard, welcome relevant international cooperation on high-density LEU fuel to support the conversion of research and test reactors.

RADIOACTIVE SOURCES

6. Taking into account that radioactive sources are widely used and can be vulnerable to malicious acts, we urge States to secure these materials, while bearing in mind their uses in industrial, medical, agricultural and research applications. To this end, we encourage States in a position to do so to continue to work towards the process of ratifying or acceding to the ICSANT; reflect into national practices relevant IAEA Nuclear Security Series

documents, the IAEA Code of Conduct on the Safety and Security of Radioactive Sources and its supplementary document on the IAEA Guidance on the Import and Export of Radioactive Sources; and establish national registers of high-activity radioactive sources where required. We also commit to work closely with the IAEA to encourage cooperation on advanced technologies and systems, share best practices on the management of radioactive sources, and provide technical assistance to States upon their request. In addition, we encourage continued national efforts and international cooperation to recover lost, missing or stolen sources and to maintain control over disused sources.

NUCLEAR SECURITY AND SAFETY

7. Acknowledging that safety measures and security measures have in common the aim of protecting human life and health and the environment, we affirm that nuclear security and nuclear safety measures should be designed, implemented and managed in nuclear facilities in a coherent and synergistic manner. We also affirm the need to maintain effective emergency preparedness, response and mitigation capabilities in a manner that addresses both nuclear security and nuclear safety. In this regard, we welcome the efforts of the IAEA to organize meetings to provide relevant recommendations on the interface between nuclear security and nuclear safety so that neither security nor safety is compromised. We also welcome the convening of the High Level Meeting on Nuclear Safety and Security initiated by the UN Secretary-General, held in New York on 22 September 2011. Noting that the security of nuclear and other radioactive materials also includes spent nuclear fuel and radioactive waste, we encourage States to

consider establishing appropriate plans for the management of these materials.

TRANSPORTATION SECURITY

8. We will continue efforts to enhance the security of nuclear and other radioactive materials while in domestic and international transport, and encourage States to share best practices and cooperate in acquiring the necessary technologies to this end. Recognizing the importance of a national layered defense against the loss or theft of nuclear and other radioactive materials, we encourage the establishment of effective national nuclear material inventory management and domestic tracking mechanisms, where required, that enable States to take appropriate measures to recover lost and stolen materials.

COMBATING ILLICIT TRAFFICKING

9. We underscore the need to develop national capabilities to prevent, detect, respond to and prosecute illicit nuclear trafficking. In this regard, we encourage action-oriented coordination among national capacities to combat illicit trafficking, consistent with national laws and regulations. We will work to enhance technical capabilities in the field of national inspection and detection of nuclear and other radioactive materials at the borders. Noting that several countries have passed export control laws to regulate nuclear transfers, we encourage further utilization of legal, intelligence and financial tools to effectively prosecute offenses, as appropriate and consistent with national laws. In addition, we encourage States to participate in the IAEA Illicit Trafficking Database program and to provide necessary information relating to nuclear and other radioactive materials outside of regulatory control. We will

work to strengthen cooperation among States and encourage them to share information, consistent with national regulations, on individuals involved in trafficking offenses of nuclear and other radioactive materials, including through INTERPOL's Radiological and Nuclear Terrorism Prevention Unit and the World Customs Organization.

NUCLEAR FORENSICS

10. We recognize that nuclear forensics can be an effective tool in determining the origin of detected nuclear and other radioactive materials and in providing evidence for the prosecution of acts of illicit trafficking and malicious uses. In this regard, we encourage States to work with one another, as well as with the IAEA, to develop and enhance nuclear forensics capabilities. In this regard, they may combine the skills of both traditional and nuclear forensics through the development of a common set of definitions and standards, undertake research and share information and best practices, as appropriate. We also underscore the importance of international cooperation both in technology and human resource development to advance nuclear forensics.

NUCLEAR SECURITY CULTURE

11. Recognizing that investment in human capacity building is fundamental to promoting and sustaining a strong nuclear security culture, we encourage States to share best practices and build national capabilities, including through bilateral and multilateral cooperation. At the national level, we encourage all stakeholders, including the government, regulatory bodies, industry, academia, nongovernmental organizations and the media, to fully commit to enhancing security culture and to maintain robust communica-

tion and coordination of activities. We also encourage States to promote human resource development through education and training. In this regard, we welcome the establishment of Centers of Excellence and other nuclear security training and support centers since the Washington Summit, and encourage the establishment of new centers. Furthermore, we welcome the effort by the IAEA to promote networking among such centers to share experience and lessons learned and to optimize available resources. We also note the holding of the Nuclear Industry Summit and the Nuclear Security Symposium on the eve of the Seoul Nuclear Security Summit.

INFORMATION SECURITY

12. We recognize the importance of preventing non-state actors from obtaining information, technology or expertise required to acquire or use nuclear materials for malicious purposes, or to disrupt information technology based control systems at nuclear facilities. We therefore encourage States to: continue to develop and strengthen national and facility-level measures for the effective management of such information, including information on the procedures and protocols to protect nuclear materials and facilities; to support relevant capacity building projects; and to enhance cyber security measures concerning nuclear facilities, consistent with the IAEA General Conference Resolution on Nuclear Security(GC(55)/Res/10) and bearing in mind the International Telecommunication Union Resolution 174. We also encourage States to: promote a security culture that emphasizes the need to protect nuclear security related information; engage with scientific, industrial and academic communities in the pursuit of common solutions; and support the IAEA in

producing and disseminating improved guidance on protecting information.

INTERNATIONAL COOPERATION

13. We encourage all States to enhance their physical protection of and accounting system for nuclear materials, emergency preparedness and response capabilities and relevant legal and regulatory framework. In this context, we encourage the international community to increase international cooperation and to provide assistance, upon request, to countries in need on a bilateral, regional, and multilateral level, as appropriate. In particular, we welcome the intent by the IAEA to continue to lead efforts to assist States, upon request. We also reaffirm the need for various public diplomacy and outreach efforts to enhance public awareness of actions taken and capacities built to address threats to nuclear security, including the threat of nuclear terrorism.

We will continue to make voluntary and substantive efforts toward strengthening nuclear security and implementing political commitments made in this regard. We welcome the information on the progress made in the field of nuclear security since the Washington Summit provided by the participants at this Seoul Summit. The next Nuclear Security Summit will be held in the Netherlands in 2014.

Source: Seoul Communiqué at 2012 Nuclear Security Summit// Site of the Council on Foreign Relations. — New York. — <http://www.cfr.org/proliferation/seoul-communication-2012-nuclear-security-summit/p27735>.

2.5. Statement by the President of the United Nations Security Council, April 16, 2012; New-York

At the 6752nd meeting of the Security Council, held on Monday, 16 April 2012, in connection with the Council's consideration of the item entitled "Non-proliferation/Democratic People's Republic of Korea", the President of the Security Council made the following statement on behalf of the Council:

"The Security Council strongly condemns the 13 April 2012 (local time) launch by the Democratic People's Republic of Korea (DPRK).

The Security Council underscores that this satellite launch, as well as any launch that uses ballistic missile technology, even if characterized as a satellite launch or space launch vehicle, is a serious violation of Security Council resolutions 1718 (2006) and 1874 (2009).

The Security Council deplores that such a launch has caused grave security concerns in the region.

The Security Council demands that the DPRK not proceed with any further launches using ballistic missile technology and comply with resolutions 1718 (2006) and 1874 (2009) by suspending all activities related to its ballistic missile programme and in this

context re-establish its pre-existing commitments to a moratorium on missile launches.

The Security Council agrees to adjust the measures imposed by paragraph 8 of resolution 1718 (2006), as modified by resolution 1874 (2009). The Security Council directs the Committee established pursuant to resolution 1718 (2006) to undertake the following tasks and to report to the Security Council within fifteen days:

- (a) Designate additional entities and items;
- (b) Update the information contained on the Committee's list of individuals, entities, and items (S/2009/205 and INFCIRC/254/Rev.9/Part.1), and update on an annual basis thereafter;
- (c) Update the Committee's annual workplan.

The Security Council further agrees that, if the Committee has not acted pursuant to the paragraph above within fifteen days, then the Security Council will complete action to adjust these measures within an additional five days.

The Security Council demands that the DPRK immediately comply fully with its obligations under Security Council resolutions

1718 (2006) and 1874 (2009), including that it: abandon all nuclear weapons and existing nuclear programmes in a complete, verifiable and irreversible manner; immediately cease all related activities; and not conduct any further launches that use ballistic missile technology, nuclear tests or any further provocation.

The Security Council calls upon all Member States to implement fully their obligations pursuant to resolutions 1718 (2006) and 1874 (2009).

The Security Council expresses its determination to take action accordingly in the event of a further DPRK launch or nuclear test."

Source: Statement by the President of the United Nations Security Council, April 16, 2012/ United Nations' official site// <http://daccess-dds-ny.un.org/doc/UN-DOC/GEN/N12/295/91/PDF/N1229591.pdf?OpenElement>.

2.6. Camp David Declaration, May 18-19, 2012; Camp David, Maryland, United States

PREAMBLE

1. We, the Leaders of the Group of Eight, met at Camp David on May 18 and 19, 2012 to address major global economic and political challenges.

THE GLOBAL ECONOMY

2. Our imperative is to promote growth and jobs.
3. The global economic recovery shows signs of promise, but significant headwinds persist.
4. Against this background, we commit to take all necessary steps to strengthen and reinvigorate our economies and combat financial stresses, recognizing that the right measures are not the same for each of us.
5. We welcome the ongoing discussion in Europe on how to generate growth, while maintaining a firm commitment to implement fiscal consolidation to be assessed on a structural basis. We agree on the importance of a strong and cohesive Eurozone for global stability and recovery, and we affirm our interest in Greece

remaining in the Eurozone while respecting its commitments. We all have an interest in the success of specific measures to strengthen the resilience of the Eurozone and growth in Europe. We support Euro Area Leaders' resolve to address the strains in the Eurozone in a credible and timely manner and in a manner that fosters confidence, stability and growth.

6. We agree that all of our governments need to take actions to boost confidence and nurture recovery including reforms to raise productivity, growth and demand within a sustainable, credible and non-inflationary macroeconomic framework. We commit to fiscal responsibility and, in this context, we support sound and sustainable fiscal consolidation policies that take into account countries' evolving economic conditions and underpin confidence and economic recovery.
7. To raise productivity and growth potential in our economies, we support structural reforms, and investments in education and in modern infrastructure, as appropriate. Investment initiatives can be financed using a range of mechanisms, including leveraging the private sector.

Sound financial measures, to which we are committed, should build stronger systems over time while not choking off near-term credit growth. We commit to promote investment to underpin demand, including support for small businesses and public-private partnerships.

8. Robust international trade, investment and market integration are key drivers of strong sustainable and balanced growth. We underscore the importance of open markets and a fair, strong, rules-based trading system. We will honor our commitment to refrain from protectionist measures, protect investments and pursue bilateral, plurilateral, and multilateral efforts, consistent with and supportive of the WTO framework, to reduce barriers to trade and investment and maintain open markets. We call on the broader international community to do likewise. Recognizing that unnecessary differences and overly burdensome regulatory standards serve as significant barriers to trade, we support efforts towards regulatory coherence and better alignment of standards to further promote trade and growth.
9. Given the importance of intellectual property rights (IPR) to stimulating job and economic growth, we affirm the significance of high standards for IPR protection and enforcement, including through international legal instruments and mutual assistance agreements, as well as through government procurement processes, private-sector voluntary codes of best practices, and enhanced customs cooperation, while promoting the free flow of information. To protect public health and consumer safety, we also commit to exchange information on rogue internet pharmacy sites in accordance with national law and share best practices on combating counterfeit medical products.

ENERGY AND CLIMATE CHANGE

10. As our economies grow, we recognize the importance of meeting our energy needs from a wide variety of sources ranging from traditional fuels to renewables to other clean technologies. As we each implement our own individual energy strategies, we embrace the pursuit of an appropriate mix from all of the above in an environmentally safe, sustainable, secure, and affordable manner. We also recognize the importance of pursuing and promoting sustainable energy and low carbon policies in order to tackle the global challenge of climate change. To facilitate the trade of energy around the world, we commit to take further steps to remove obstacles to the evolution of global energy infrastructure; to reduce barriers and refrain from discriminatory measures that impede market access; and to pursue universal access to cleaner, safer, and more affordable energy. We remain committed to the principles on global energy security adopted by the G-8 in St. Petersburg.
11. As we pursue energy security, we will do so with renewed focus on safety and sustainability. We are committed to establishing and sharing best practices on energy production, including exploration in frontier areas and the use of technologies such as deep water drilling and hydraulic fracturing, where allowed, to allow for the safe development of energy sources, taking into account environmental concerns over the life of a field. In light of the nuclear accident triggered by the tsunami in Japan, we continue to strongly support initiatives to carry out comprehensive risk and safety assessments of existing nuclear installations and to strengthen the implementation of relevant conventions to aim for high levels of nuclear safety.

12. We recognize that increasing energy efficiency and reliance on renewables and other clean energy technologies can contribute significantly to energy security and savings, while also addressing climate change and promoting sustainable economic growth and innovation. We welcome sustained, cost-effective policies to support reliable renewable energy sources and their market integration. We commit to advance appliance and equipment efficiency, including through comparable and transparent testing procedures, and to promote industrial and building efficiency through energy management systems.

13. We agree to continue our efforts to address climate change and recognize the need for increased mitigation ambition in the period to 2020, with a view to doing our part to limit effectively the increase in global temperature below 2°C above pre-industrial levels, consistent with science. We strongly support the outcome of the 17th Conference of the Parties to the U.N. Framework Convention on Climate Change (UNFCCC) in Durban to implement the Cancun agreements and the launch of the Durban Platform, which we welcome as a significant breakthrough toward the adoption by 2015 of a protocol, another legal instrument or an agreed outcome with legal force applicable to all Parties, developed and developing countries alike. We agree to continue to work together in the UNFCCC and other fora, including through the Major Economies Forum, toward a positive outcome at Doha.

14. Recognizing the impact of short-lived climate pollutants on near-term climate change, agricultural productivity, and human health, we support, as a means of promoting increased ambition and complementary to other CO₂ and GHG

emission reduction efforts, comprehensive actions to reduce these pollutants, which, according to UNEP and others, account for over thirty percent of near-term global warming as well as 2 million premature deaths a year. Therefore, we agree to join the Climate and Clean Air Coalition to Reduce Short-lived Climate Pollutants.

15. In addition, we strongly support efforts to rationalize and phase-out over the medium term inefficient fossil fuel subsidies that encourage wasteful consumption, and to continue voluntary reporting on progress.

FOOD SECURITY AND NUTRITION

16. For over a decade, the G-8 has engaged with African partners to address the challenges and opportunities afforded by Africa's quest for inclusive and sustainable development. Our progress has been measurable, and together we have changed the lives of hundreds of millions of people. International assistance alone, however, cannot fulfill our shared objectives. As we move forward, and even as we recommit to working together to reduce poverty, we recognize that our task is also to foster the change that can end it, by investing in Africa's growth, its expanding role in the global economy, and its success. As part of that effort, we commit to fulfill outstanding L'Aquila financial pledges, seek to maintain strong support to address current and future global food security challenges, including through bilateral and multilateral assistance, and agree to take new steps to accelerate progress towards food security and nutrition in Africa and globally, on a complementary basis.

17. Since the L'Aquila Summit, we have seen an increased level of commitment to global food security, realignment of as-

sistance in support of country-led plans, and new investments and greater collaboration in agricultural research. We commend our African partners for the progress made since L'Aquila, consistent with the Maputo Declaration, to increase public investments in agriculture and to adopt the governance and policy reforms necessary to accelerate sustainable agricultural productivity growth, attain greater gains in nutrition, and unlock sustainable and inclusive country-led growth. The leadership of the African Union and the role of its Comprehensive Africa Agriculture Development Program (CAADP) have been essential.

18. Building on this progress, and working with our African and other international partners, today we commit to launch a New Alliance for Food Security and Nutrition to accelerate the flow of private capital to African agriculture, take to scale new technologies and other innovations that can increase sustainable agricultural productivity, and reduce the risk borne by vulnerable economies and communities. This New Alliance will lift 50 million people out of poverty over the next decade, and be guided by a collective commitment to invest in credible, comprehensive and country-owned plans, develop new tools to mobilize private capital, spur and scale innovation, and manage risk; and engage and leverage the capacity of private sector partners — from women and smallholder farmers, entrepreneurs to domestic and international companies.

19. The G-8 reaffirms its commitment to the world's poorest and most vulnerable people, and recognizes the vital role of official development assistance in poverty alleviation and achieving the Millennium Development Goals. As such, we welcome and endorse the Camp David

Accountability Report which records the important progress that the G-8 has made on food security consistent with commitments made at the L'Aquila Summit, and in meeting our commitments on global health, including the Muskoka initiative on maternal, newborn and child health. We remain strongly committed to reporting transparently and consistently on the implementation of these commitments. We look forward to a comprehensive report under the UK Presidency in 2013.

AFGHANISTAN'S ECONOMIC TRANSITION

20. We reaffirm our commitment to a sovereign, peaceful, and stable Afghanistan, with full ownership of its own security, governance and development and free of terrorism, extremist violence, and illicit drug production and trafficking. We will continue to support the transition process with close coordination of our security, political and economic strategies.

21. With an emphasis on mutual accountability and improved governance, building on the Kabul Process and Bonn Conference outcomes, our countries will take steps to mitigate the economic impact of the transition period and support the development of a sustainable Afghan economy by enhancing Afghan capacity to increase fiscal revenues and improve spending management, as well as mobilizing non-security assistance into the transformation decade.

22. We will support the growth of Afghan civil society and will mobilize private sector support by strengthening the enabling environment and expanding business opportunities in key sectors, as well as promote regional economic cooperation to enhance connectivity.

23. We will also continue to support the Government of the Islamic Republic of Afghanistan in its efforts to meet its obligation to protect and promote human rights and fundamental freedoms, including in the rights of women and girls and the freedom to practice religion.

24. We look forward to the upcoming Tokyo Conference in July, as it generates further long-term support for civilian assistance to Afghanistan from G-8 members and other donors into the transformation decade; agrees to a strategy for Afghanistan's sustainable economic development, with mutual commitments and benchmarks between Afghanistan and the international community; and provides a mechanism for biennial reviews of progress being made against those benchmarks through the transformation decade.

THE TRANSITIONS IN THE MIDDLE EAST AND NORTH AFRICA

25. A year after the historic events across the Middle East and North Africa began to unfold, the aspirations of people of the region for freedom, human rights, democracy, job opportunities, empowerment and dignity are undiminished. We recognize important progress in a number of countries to respond to these aspirations and urge continued progress to implement promised reforms. Strong and inclusive economic growth, with a thriving private sector to provide jobs, is an essential foundation for democratic and participatory government based on the rule of law and respect for basic freedoms, including respect for the rights of women and girls and the right to practice religious faith in safety and security.

26. We renew our commitment to the Deauville Partnership with Arab Countries in Transition, launched at the G-8 Summit

last May. We welcome the steps already taken, in partnership with others in the region, to support economic reform, open government, and trade, investment and integration.

27. We note in particular the steps being taken to expand the mandate of the European Bank for Reconstruction and Development to bring its expertise in transition economies and financing support for private sector growth to this region; the platform established by international financial institutions to enhance coordination and identify opportunities to work together to support the transition country reform efforts; progress in conjunction with regional partners toward establishing a new transition fund to support country-owned policy reforms complementary to existing mechanisms; increased financial commitments to reforming countries from international and regional financial institutions, the G-8 and regional partners; strategies to increase access to capital markets to help boost private investment; and commitments from our countries and others to support small and medium-sized enterprises, provide needed training and technical assistance and facilitate international exchanges and training programs for key constituencies in transition countries.

28. Responding to the call from partner countries, we endorse an asset recovery action plan to promote the return of stolen assets and welcome, and commit to support the action plans developed through the Partnership to promote open government, reduce corruption, strengthen accountability and improve the regulatory environment, particularly for the growth of small- and medium-sized enterprises. These governance reforms will foster the inclusive economic growth, rule of law and job creation needed for the success

of democratic transition. We are working with Partnership countries to build deeper trade and investment ties, across the region and with members of the G-8, which are critical to support growth and job creation. In this context, we welcome Partnership countries' statement on openness to international investment.

29. G-8 members are committed to an enduring and productive partnership that supports the historic transformation underway in the region. We commit to further work during the rest of 2012 to support private sector engagement, asset recovery, closer trade ties and provision of needed expertise as well as assistance, including through a transition fund. We call for a meeting in September of Foreign Ministers to review progress being made under the Partnership.

POLITICAL AND SECURITY ISSUES

30. We remain appalled by the loss of life, humanitarian crisis, and serious and widespread human rights abuses in Syria. The Syrian government and all parties must immediately and fully adhere to commitments to implement the six-point plan of UN and Arab League Joint Special Envoy (JSE) Kofi Annan, including immediately ceasing all violence so as to enable a Syrian-led, inclusive political transition leading to a democratic, plural political system. We support the efforts of JSE Annan and look forward to seeing his evaluation, during his forthcoming report to the UN Security Council, of the prospects for beginning this political transition process in the near-term. Use of force endangering the lives of civilians must cease. We call on the Syrian government to grant safe and unhindered access of humanitarian personnel to populations in need of assistance in accordance with international law. We welcome

the deployment of the UN Supervision Mission in Syria, and urge all parties, in particular the Syrian government, to fully cooperate with the mission. We strongly condemn recent terrorist attacks in Syria. We remain deeply concerned about the threat to regional peace and security and humanitarian despair caused by the crisis and remain resolved to consider further UN measures as appropriate.

31. We remain united in our grave concern over Iran's nuclear program. We call on Iran to comply with all of its obligations under relevant UNSC resolutions and requirements of the International Atomic Energy Agency's (IAEA) Board of Governors. We also call on Iran to continuously comply with its obligations under the Nuclear Non-Proliferation Treaty, including its safeguards obligations. We also call on Iran to address without delay all outstanding issues related to its nuclear program, including questions concerning possible military dimensions. We desire a peaceful and negotiated solution to concerns over Iran's nuclear program, and therefore remain committed to a dual-track approach. We welcome the resumption of talks between Iran and the E3+3 (China, France, Germany, Russia, the United Kingdom, the United States, and the European Union High Representative). We call on Iran to seize the opportunity that began in Istanbul, and sustain this opening in Baghdad by engaging in detailed discussions about near-term, concrete steps that can, through a step-by-step approach based on reciprocity, lead towards a comprehensive negotiated solution which restores international confidence that Iran's nuclear program is exclusively peaceful. We urge Iran to also comply with international obligations to uphold human rights and fundamental freedoms, including freedom of religion, and end interference with the

media, arbitrary executions, torture, and other restrictions placed on rights and freedoms.

32. We continue to have deep concerns about provocative actions of the Democratic People's Republic of Korea (DPRK) that threaten regional stability. We remain concerned about the DPRK's nuclear program, including its uranium enrichment program. We condemn the April 13, 2012, launch that used ballistic missile technology in direct violation of UNSC resolution. We urge the DPRK to comply with its international obligations and abandon all nuclear and ballistic missile programs in a complete, verifiable, and irreversible manner. We call on all UN member states to join the G-8 in fully implementing the UNSC resolutions in this regard. We affirm our will to call on the UN Security Council to take action, in response to additional DPRK acts, including ballistic missile launches and nuclear tests. We remain concerned about human rights violations in the DPRK, including the situation of political prisoners and the abductions issue.

33. We recognize that according women full and equal rights and opportunities is crucial for all countries' political stability, democratic governance, and economic growth. We reaffirm our commitment to advance human rights of and opportunities for women, leading to more development, poverty reduction, conflict prevention and resolution, and improved maternal health and reduced child mortality. We also commit to supporting the right of all people, including women, to freedom of religion in safety and security. We are concerned about the reduction of women's political participation and the placing at risk of their human rights and fundamental freedoms, including in Middle East and North Africa countries

emerging from conflict or undergoing political transitions. We condemn and avow to stop violence directed against, including the trafficking of, women and girls. We call upon all states to protect human rights of women and to promote women's roles in economic development and in strengthening international peace and security.

34. We pay tribute to the remarkable efforts of President Thein Sein, Daw Aung San Suu Kyi, and many other citizens of Burma/Myanmar to deliver democratic reform in their country over the past year. We recognize the need to secure lasting and irreversible reform, and pledge our support to existing initiatives, particularly those which focus on peace in ethnic area, national reconciliation, and entrenching democracy. We also stress the need to cooperate to further enhance aid coordination among international development partners of Burma/Myanmar and conduct investment in a manner beneficial to the people of Burma/Myanmar.

35. We recognize the particular sacrifices made by the Libyan people in their transition to create a peaceful, democratic, and stable Libya. The international community remains committed to actively support the consolidation of the new Libyan institutions.

36. We condemn transnational organized crime and terrorism in all forms and manifestations. We pledge to enhance our cooperation to combat threats of terrorism and terrorist groups, including al-Qa'ida, its affiliates and adherents, and transnational organized crime, including individuals and groups engaged in illicit drug trafficking and production. We stress that it is critical to strengthen efforts to curb illicit trafficking in arms in the Sahel area, in particular to eliminate the Man-Portable Air Defense Sys-

tems proliferated across the region; to counter financing of terrorism, including kidnapping for ransom; and to eliminate support for terrorist organizations and criminal networks. We urge states to develop necessary capacities including in governance, education, and criminal justice systems, to address, reduce and undercut terrorist and criminal threats, including "lone wolf" terrorists and violent extremism, while safeguarding human rights and upholding the rule of law. We underscore the central role of the United Nations and welcome the Global Counterterrorism Forum (GCTF) and efforts of the Roma-Lyon Group in countering terrorism. We reaffirm the need to strengthen the implementation of the UN Al-Qaida sanctions regime, and the integrity and implementation of the UN conventions on drug control and transnational organized crime.

37. We reaffirm that nonproliferation and disarmament issues are among our top priorities. We remain committed to fulfill all of our obligations under the Nuclear Non-proliferation Treaty and, concerned about the severe proliferation challenges, call on all parties to support and promote global nonproliferation and disarmament efforts.

38. We welcome and fully endorse the G-8 Foreign Ministers Meeting Chair's Statement with accompanying annex.

CONCLUSION

39. We look forward to meeting under the presidency of the United Kingdom in 2013.

Source: Camp David Declaration// Official site of the White House. — Washington D.C. — <http://www.whitehouse.gov/the-press-office/2012/05/19/camp-david-declaration>.

2.7. Statement by Catherine Ashton, High Representative of the European Union for Foreign Affairs and Security Policy and Vice-president of the Commission, Following the Talks of E3+3 with Iran in Baghdad; May 24, 2012; Brussels

First of all, I would like to thank the Iraqi government, and in particular Foreign Minister Zebari, for the excellent hospitality and organisation of these talks.

The E3+3 remain firm, clear and united in seeking a swift diplomatic resolution of the international community's concerns on the exclusively peaceful nature of Iran's nuclear programme, based on the NPT, and the full implementation of UN Security Council and IAEA Board of Governors Resolutions. We expect Iran to take concrete and practical steps to urgently meet the concerns of the international community, to build confidence and to meet its international obligations.

We have met with our Iranian counterparts over the last two days in very intense and detailed discussions.

In line with our agreement in Istanbul, the E3+3 laid out clear proposals to address the Iranian nuclear issue and, in particular, all aspects of 20% enrichment.

We also put ideas on the table on reciprocal steps we would be prepared to take.

Iran declared its readiness to address the issue of 20% enrichment and came with its own

five-point plan, including their assertion that we recognise their right to enrichment.

Having held in-depth discussions with our Iranian counterparts over two days — both in full plenary sessions and bilaterals — it is clear that we both want to make progress, and that there is some common ground. However, significant differences remain. Nonetheless, we do agree on the need for further discussion to expand that common ground.

We will go back to our respective capitals and consult. We will maintain intensive contacts with our Iranian counterparts to prepare a further meeting in Moscow with arrival on 17th June, with talks on 18th and 19th June.

As we have already agreed, the talks will be based on a step-by-step approach and reciprocity.

We remain determined to resolve this problem in the near term through negotiations, and will continue to make every effort to that end.

Source: Camp David Declaration// Official site of the European Commission. — Brussels. — <http://ec.europa.eu/avservices/ebs/schedule.cfm>.

2.8. Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions in the Islamic Republic of Iran, May 25, 2012; Vienna

A report of the International Atomic Energy Agency Director General

A. Introduction

1. This report of the Director General to the Board of Governors and, in parallel, to the Security Council, is on the implementation of the NPT Safeguards Agreement²⁷ and relevant provisions of Security Council resolutions in the Islamic Republic of Iran (Iran).
2. The Security Council has affirmed that the steps required by the Board of Governors in its resolutions²⁸ are binding on Iran.²⁹

²⁷ The Agreement between Iran and the Agency for the Application of Safeguards in Connection with the Treaty on the

Non-Proliferation of Nuclear Weapons (INFCIRC/214), which entered into force on 15 May 1974.

²⁸ The Board of Governors has adopted eleven resolutions in connection with the implementation of safeguards in Iran: GOV/2003/69 (12 September 2003); GOV/2003/81 (26 November 2003); GOV/2004/21 (13 March 2004); GOV/2004/49 (18 June 2004); GOV/2004/79 (18 September 2004); GOV/2004/90 (29 November 2004); GOV/2005/64 (11 August 2005); GOV/2005/77 (24 September 2005); GOV/2006/14 (4 February 2006); GOV/2009/82 (27 November 2009); and GOV/2011/69 (18 November 2011).

²⁹ In resolution 1929 (2010), the Security Council: affirmed, inter alia, that Iran shall, without further

The relevant provisions of the aforementioned Security Council resolutions were adopted under Chapter VII of the United Nations Charter, and are mandatory, in accordance with the terms of those resolutions.³⁰

3. By virtue of its Relationship Agreement with the United Nations,³¹ the Agency is required to cooperate with the Security

delay, take the steps required by the Board in GOV/2006/14 and GOV/2009/82; reaffirmed Iran's obligation to cooperate fully with the IAEA on all outstanding issues, particularly those that give rise to concerns about the possible military dimensions of the Iranian nuclear programme; decided that Iran shall, without delay, comply fully and without qualification with its Safeguards Agreement, including through the application of modified Code 3.1 of the Subsidiary Arrangements; and called upon Iran to act strictly in accordance with the provisions of its Additional Protocol and to ratify it promptly (operative paras 1–6).

³⁰ The United Nations Security Council has adopted the following resolutions on Iran: 1696 (2006); 1737 (2006); 1747 (2007); 1803 (2008); 1835 (2008); and 1929 (2010).

³¹ The Agreement Governing the Relationship between the United Nations and the IAEA entered into force on 14 November 1957, following approval by the General Conference, upon recommendation of the Board of Governors, and approval by the General Assembly of the United Nations. It is reproduced in INFCIRC/11 (30 October 1959), Part I.A.

Council in the exercise of the Council's responsibility for the maintenance or restoration of international peace and security. All Member States of the United Nations agree to accept and carry out the decisions of the Security Council,³² and in this respect, to take actions which are consistent with their obligations under the United Nations Charter.

4. This report addresses developments since the last report (GOV/2012/9, 24 February 2012), as well as issues of longer standing. It focuses on those areas where Iran has not fully implemented its binding obligations, as the full implementation of these obligations is needed to establish international confidence in the exclusively peaceful nature of Iran's nuclear programme.

B. Clarification of Unresolved Issues

5. As previously reported, on 18 November 2011 the Board of Governors adopted resolution GOV/2011/69 in which, *inter alia*, it stressed that it was essential for Iran and the Agency to intensify their dialogue aimed at the urgent resolution of all outstanding substantive issues for the purpose of providing clarifications regarding those issues, including access to all relevant information, documentation, sites, material, and personnel in Iran. The Board also called on Iran to engage seriously and without preconditions in talks aimed at restoring international confidence in the exclusively peaceful nature of Iran's nuclear programme. In light of this, an Agency team visited Iran for two rounds of talks, in January and February 2012. During the talks: Iran and the Agency were unable to reach agreement on a structured approach³³ to the clarification

³² The Charter of the United Nations, Article 25.

³³ This included issues to be addressed, initial actions, and modalities. These modalities related, *inter alia*, to

cation of all outstanding issues related to Iran's nuclear programme; Iran provided an initial declaration³⁴ in which it dismissed the Agency's concerns; the Agency presented Iran with initial questions on Parchin and the foreign expert,³⁵ to which the Agency has yet to receive answers; and Iran stated that it was not able to grant access to the Parchin site.

6. The Director General informed the Board of Governors at its March 2012 meeting that the Agency would continue to address the Iran nuclear issue through dialogue and in a constructive spirit. Immediately following that meeting, further exchanges between the Agency and Iran took place to explore how to continue the talks.
7. Iran and the Agency held a third round of talks in Vienna on 14 and 15 May 2012, during which discussions continued on a structured approach to the clarification of all outstanding issues. Progress was made on a draft document focused on the issues outlined in the Annex to the Director General's November 2011 report. Issues related to the correctness and completeness of Iran's declarations, other than those included in the Annex to the November 2011 report, would be addressed separately. In response to the Agency's request for access to the Parchin site (see paragraph 42 below), Iran stated that such access would not be possible before agreement had been reached on a structured approach.
8. The Director General, in a letter dated 17 May 2012 to H.E. Mr. Saeed Jalili, Sec-

Iran's security concerns, ensuring confidentiality and ensuring that Iran's cooperation included provision of access for the Agency to all relevant information, documentation, sites, material, and personnel in Iran.

³⁴ The initial declaration was in connection with the issues identified in Section C of the Annex to GOV/2011/65.

³⁵ As referred to in Section C of the Annex to GOV/2011/65.

retary of the Supreme National Security Council of Iran, stated that, in light of the progress made on agreeing a structured approach, the circumstances were now right for him to accept Iran's invitation to visit Iran. The Director General stated that the purpose of his visit would be to discuss issues of common interest and, in particular, to conclude the agreement under consideration on a structured approach. In a reply dated 18 May 2012, H.E. Mr. Ali Asghar Soltanieh, Ambassador and Resident Representative to the IAEA, informed the Director General of Iran's affirmative response regarding the visit.

9. On 21 May 2012, the Director General held meetings in Tehran with Mr. Jalili, H.E. Mr. Fereydoon Abbasi, Vice President of Iran and Head of the Atomic Energy Organization of Iran and H.E. Mr. Ali Akbar Salehi, Minister of Foreign Affairs of Iran. During the talks, a number of issues of mutual interest were discussed, in particular the clarification of issues relating to possible military dimensions to Iran's nuclear programme. During the meeting with Mr Jalili, it was decided to agree on a structured approach. Although some differences between Iran and the Agency remained, on the document resulting from the talks on 14 and 15 May 2012, Mr Jalili made clear that these were not obstacles to reaching agreement.

C. Facilities Declared under Iran's Safeguards Agreement

10. Under its Safeguards Agreement, Iran has declared to the Agency 16 nuclear facilities³⁶ and nine locations outside facilities where nuclear material is customarily

³⁶ Since the previous report to the Board (GOV/2012/9), Iran has declared one additional facility, the Fuel Plate Fabrication Plant (FPFP), as indicated in paragraph 38 below. This was the result of an administrative restructuring of ongoing activities that involved no physical changes to Iran's facilities.

used (LOFs).³⁷ Notwithstanding that certain of the activities being undertaken by Iran at some of the facilities are contrary to the relevant resolutions of the Board of Governors and the Security Council, as indicated below, the Agency continues to implement safeguards at these facilities and LOFs.

D. Enrichment Related Activities

11. Contrary to the relevant resolutions of the Board of Governors and the Security Council, Iran has not suspended its enrichment related activities in the declared facilities referred to below, all of which are under Agency safeguards. According to the latest figures available to the Agency, Iran has produced 6197 kg of UF₆ enriched up to 5% U-235 and 145.6 kg of UF₆ enriched up to 20% U-235 since it began production of such material.³⁸

D.1. Natanz: Fuel Enrichment Plant and Pilot Fuel Enrichment Plant

12. Fuel Enrichment Plant (FEP): FEP is a centrifuge enrichment plant for the production of low enriched uranium (LEU) enriched up to 5% U-235, which was first brought into operation in 2007. It consists of two cascade halls: Production Hall A and Production Hall B. According to design information submitted by Iran, eight units are planned for Production Hall A, with 18 cascades in each unit. No detailed design information has yet been provided for Production Hall B.

13. As of 19 May 2012, 54 cascades had been installed in three of the eight units in Production Hall A, 52 of which were declared by Iran as being fed with UF₆. Whereas initially each installed cascade comprised 164 centrifuges, Iran subsequently

³⁷ All of the LOFs are situated within hospitals.

³⁸ Some of this material has been further processed, as indicated later in the report.

- modified 30 of the cascades to contain 174 centrifuges each. As of 19 May 2012, one additional cascade, also comprising 174 centrifuges, had been installed in a fourth unit in Production Hall A, although it had not been fed with UF_6 .³⁹ Of the remaining 17 cascades in the fourth unit, 16 cascades each had 174 empty IR-1 centrifuge casings placed in position, and the other cascade was empty. All the centrifuges installed in Production Hall A are IR-1 machines. As of 19 May 2012, no centrifuges had been installed in the remaining four units, although preparatory installation work had been completed in one of the units, including the placement in position of empty IR-1 centrifuge casings in all 18 cascades, and was ongoing in the other three units. As of 19 May 2012, there had been no installation work in Production Hall B.
14. As previously reported,⁴⁰ the Agency has verified that, as of 16 October 2011, 55 683 kg of natural UF_6 had been fed into the cascades since the start of operations in February 2007, and a total of 4871 kg of UF_6 enriched up to 5% U-235 had been produced. Iran has estimated that, between 17 October 2011 and 11 May 2012, it produced 1326 kg of UF_6 enriched up to 5% U-235, which would result in a total production of 6197 kg of UF_6 enriched up to 5% U-235 since production began in February 2007. The nuclear material at FEP (including the feed, product and tails), as well as all installed cascades and the feed and withdrawal stations, are subject to Agency containment and surveillance.⁴¹
15. Based on the results of the analysis⁴² of environmental samples taken at FEP since February 2007⁴³ and other verification activities, the Agency has concluded that the facility has operated as declared by Iran in the relevant Design Information Questionnaire (DIQ).
16. Pilot Fuel Enrichment Plant (PFEP): PFEP is a research and development (R&D) facility, and a pilot LEU production facility, which was first brought into operation in October 2003. It has a cascade hall that can accommodate six cascades, and is divided between an area designated for the production of LEU enriched up to 20% U-235 (Cascades 1 and 6) and an area designated for R&D (Cascades 2, 3, 4 and 5).
17. Production area: Iran first began feeding low enriched UF_6 into Cascade 1 on 9 February 2010, for the stated purpose of producing UF_6 enriched up to 20% U-235 for use in the manufacture of fuel for the Tehran Research Reactor (TRR).⁴⁴ ⁴⁵ Iran has subsequently stated that the purpose is also to produce fuel for the other research reactors it reportedly intends to build.⁴⁶ Since 13 July 2010, Iran and samples) are not subject to containment and surveillance.
- 42 Since the plant was first brought into operation, the Agency has taken a large number of environmental samples at FEP, the results of which have indicated a level of enrichment of uranium of less than 5% U-235. A small number of particles from samples taken in the cascade area continue to be found with enrichment levels of between 5% and 7.4% U-235, which are higher than the level stated in the Design Information Questionnaire (DIQ) for FEP. As noted in GOV/2010/46, paragraph 7, the Agency assesses that these results refer to a known technical phenomenon associated with the start-up of centrifuge cascades.
- 43 Results are available to the Agency for samples taken up to 18 December 2011.
- 44 GOV/2010/28, para. 9.
- 45 TRR is a 5 MW reactor that operates with 20% U-235 enriched fuel and is used for the irradiation of different types of targets and for research and training purposes.
- 46 Mr Abbasi reportedly made a statement to the effect that Iran plans to build four to five new reactors in the next few years in order to produce radioisotopes and carry out research ("Iran will not stop producing 20% enriched uranium," *Tehran Times*, 12 April 2011). He was also quoted by the Iranian Student's News Agency as saying "To provide fuel for these (new) reactors, we need to continue with the 20 per cent enrichment of uranium" ("Iran to build new nuclear research reactors — report," *Reuters*, 11 April 2011).
- 47 GOV/2010/28, para. 9.
- 48 GOV/2011/65, para. 15.
- has been feeding low enriched UF_6 into two interconnected cascades (Cascades 1 and 6), each of which consists of 164 IR-1 centrifuges.⁴⁷
18. As previously reported,⁴⁸ the Agency has verified that, as of 13 September 2011, 720.8 kg of low enriched UF_6 produced at FEP had been fed into the cascades in the production area since the process began, and that a total of 73.7 kg of UF_6 enriched up to 20% U-235 had been produced. Iran has estimated that, between 14 September 2011 and 18 May 2012, a total of 269.5 kg of UF_6 enriched at FEP was fed into the two interconnected cascades at PFEP and that approximately 36.4 kg of UF_6 enriched up to 20% U-235 were produced. This would result in a total production of 110.1 kg of UF_6 enriched up to 20% U-235 at PFEP since production began in February 2010.
19. During the period 9–14 April 2012, the operator at PFEP blended approximately 1.6 kg of UF_6 enriched up to 20% U-235 with approximately 7.5 kg of natural UF_6 . The product of this down-blending was put into four cylinders, each of which contained approximately 2.1 kg of UF_6 with an enrichment level of 1.5%, 2.4%, 4.6% and 4.7% U-235, respectively. During the same period, the Agency took samples of the UF_6 contained in each of the four cylinders and applied seals.
20. R&D area: In the area designated for Cascades 2 and 3, Iran has been intermittently feeding natural UF_6 into single machines, 10-machine cascades and 20-machine cascades of IR-1, IR-2m and IR-4 centrifuges. As previously reported,⁴⁹ Iran has informed the Agency of its intention to install three new types of centrifuge — IR-5, IR-6 and IR-6s — as single machines in Cascade 2. As of 18 May 2012, no such centrifuges had been installed. As of 6 May 2012, Iran had installed 129 IR-4 centrifuges in Cascade 4.⁵⁰ Since 1 March 2012, Iran has been intermittently feeding up to 104 of the centrifuges in Cascade 4 with natural UF_6 . Since November 2011, Iran has been intermittently feeding the 164 IR-2m centrifuges in Cascade 5 with natural UF_6 , although for a short period it intermittently fed this cascade with depleted UF_6 instead of natural UF_6 .
21. Between 12 February 2012 and 18 May 2012, a total of approximately 178.8 kg of natural UF_6 and 11.4 kg of depleted UF_6 was fed into centrifuges in the R&D area, but no LEU was withdrawn as the product and the tails are recombined at the end of the process.
22. Based on the results of the analysis of the environmental samples taken at PFEP⁵¹ and other verification activities, the Agency has concluded that the facility has operated as declared by Iran in the relevant DIQ.
- ## D.2. Fordow Fuel Enrichment Plant
23. The Fordow Fuel Enrichment Plant (FFEP) is, according to the DIQ of 18 January 2012,⁵² a centrifuge enrichment plant for the production of UF_6 enriched up to 20% U-235 and the production of
- 49 GOV/2012/9, para. 20.
- 50 Iran had previously indicated its intention to install two 164-centrifuge cascades (Cascades 4 and 5) in the R&D area (GOV/2011/7, para. 17).
- 51 Results are available to the Agency for samples taken up to 21 November 2011.
- 52 To date, Iran has provided the Agency with an initial DIQ and three revised DIQs (GOV/2012/9, para. 24).

UF₆ enriched up to 5% U-235. The facility is being built to contain 16 cascades, equally divided between two units (Unit 1 and Unit 2), with a total of approximately 3000 centrifuges.⁵³ The plant was first brought into operation in 2011.

24. As previously reported,⁵⁴ on 25 January 2012 Iran started feeding UF₆ enriched to 3.5% U-235 into a second set of two interconnected cascades in Unit 2. As of 9 May 2012, Iran had installed all 174 IR-1 centrifuges in each of the fifth and sixth cascades in Unit 2 and had installed 20 IR-1 centrifuges in a seventh cascade in Unit 2. As of 9 May 2012, in the rest of Unit 2 and all of Unit 1, empty IR-1 centrifuge casings had been placed in position and all of the piping had been installed.

25. In a letter dated 7 March 2012, the Agency requested that Iran provide the number and location of cascades at FFEP that would be dedicated to the production of LEU enriched up to 20% U-235. Iran replied, in a letter dated 2 April 2012, that, once the installation of cascades additional to the four currently installed had been completed, the Agency would be notified of "further development" in advance. In a letter dated 21 May 2012, the Agency requested that Iran provide information regarding the purpose for which the fifth and sixth cascades now installed at FFEP are to be used. Iran replied, in a letter dated 23 May 2012, that the installation of centrifuges in the other cascades in Unit 2 (Cascades 5–8) was yet to be completed and that "related utilities may need some months to get ready for commissioning". Iran also stated that the Agency would be notified about the production level of these cascades prior to their operation.

⁵³ GOV/2009/74, para. 9.

⁵⁴ GOV/2012/9, para. 26.

26. The Agency has verified that FFEP is being constructed according to the latest DIQ provided by Iran. As previously reported, Iran provided some information in 2011 regarding the initial timing of, and circumstances relating to, its decision to build FFEP at an existing defence establishment.⁵⁵ Nevertheless, additional information from Iran is still needed in connection with this facility, particularly in light of the difference between the original stated purpose of the facility and the purpose for which it is now being used.⁵⁶

27. Iran has estimated that, between 14 December 2011, when feeding of the first set of two interconnected cascades began, and 13 May 2012, a total of 259 kg of UF₆ enriched up to 5% U-235 was fed into the two sets of interconnected cascades at FFEP and that approximately 35.5 kg of UF₆ enriched up to 20% U-235 were produced, of which 25.1 kg has been withdrawn from the process and verified by the Agency.

28. The results of analysis of environmental samples taken at FFEP on 15 February 2012 showed the presence of particles with enrichment levels of up to 27% U-235, which are higher than the level stated in the DIQ. In a letter dated 4 May 2012, the Agency requested that Iran provide an explanation for the presence of these particles. In its reply, dated 9 May 2012, Iran indicated that the production of such particles "above the target value" may happen for technical reasons beyond the operator's control. The Agency is assessing Iran's explanation and has requested further details. On 5 May 2012, the Agency took further environmental samples from the same location where the particles in question had been

⁵⁵ GOV/2011/54, para. 26.

⁵⁶ GOV/2009/74, para. 14.

found. These samples are currently being analysed.

D.3. Other Enrichment Related Activities

29. The Agency is still awaiting a substantive response from Iran to Agency requests for further information in relation to announcements made by Iran concerning the construction of ten new uranium enrichment facilities, the sites for five of which, according to Iran, have been decided.⁵⁷ Iran has not provided information, as requested by the Agency in its letter of 18 August 2010, in connection with its announcement on 7 February 2010 that it possessed laser enrichment technology.⁵⁸ As a result of Iran's lack of cooperation on those issues, the Agency is unable to verify and report fully on these matters.

E. Reprocessing Activities

30. Pursuant to the relevant resolutions of the Board of Governors and the Security Council, Iran is obliged to suspend its reprocessing activities, including R&D.³³ In a letter to the Agency dated 15 February 2008, Iran stated that it "does not have reprocessing activities". In that context, the Agency has continued to monitor the use of hot cells at TRR and the Molybdenum, Iodine and Xenon Radioisotope Production (MIX) Facility.⁵⁹ The Agency carried out an inspection and design information verification (DIV) at TRR on 28 April 2012, and a DIV at the MIX Facility on 7 May 2012. It is only with respect to

⁵⁷ "Iran Specifies Location for 10 New Enrichment Sites," *Fars News Agency*, 16 August 2010.

⁵⁸ Cited on the website of the Presidency of the Islamic Republic of Iran, 7 February 2010, at <http://www.president.ir/en/?ArtID=20255>.

⁵⁹ The MIX Facility is a hot cell complex for the separation of radiopharmaceutical isotopes from targets, including uranium, irradiated at TRR. The MIX Facility is not currently processing any uranium targets.

TRR, the MIX Facility and the other facilities to which the Agency has access that the Agency can confirm that there are no ongoing reprocessing related activities in Iran.

F. Heavy Water Related Projects

31. Contrary to the relevant resolutions of the Board of Governors and the Security Council, Iran has not suspended work on all heavy water related projects, including the construction of the heavy water moderated research reactor at Arak, the Iran Nuclear Research Reactor (IR-40 Reactor), which is under Agency safeguards.⁶⁰

32. On 16 May 2012, the Agency carried out a DIV at the IR-40 Reactor at Arak and observed that, although construction of the facility was still ongoing, no major components had been installed since the previous DIV. Also on 16 May 2012, the operator informed the Agency that the operation of the IR-40 Reactor was planned to commence in the third quarter of 2013.

33. Since its visit to the Heavy Water Production Plant (HWPP) on 17 August 2011, the Agency has sent three letters to Iran requesting further access to HWPP. The Agency has yet to receive a reply to those letters. Iran also declined the Agency's request made during the aforementioned DIV for access to HWPP. As a result, the Agency is again relying on satellite imagery to monitor the status of HWPP. Based on recent images, the HWPP appears to be in operation. To date, Iran has not permitted the Agency to take samples from the heavy water stored at the Uranium Conversion Facility (UCF).⁶¹

⁶⁰ S/RES/1737 (2006), para. 2; S/RES/1747 (2007), para. 1; S/RES/1803 (2008), para. 1; S/RES/1835 (2008), para. 4; S/RES/1929 (2010), para. 2.

⁶¹ GOV/2010/10, paras 20 and 21.

G. Uranium Conversion and Fuel Fabrication

34. Although it is obliged to suspend all enrichment related activities and heavy water related projects, Iran is conducting a number of activities at UCF, the Fuel Manufacturing Plant (FMP) and the Fuel Plate Fabrication Plant (FPFP) at Esfahan which, as indicated below, are in contravention of those obligations, although the facilities are under Agency safeguards.
35. Uranium Conversion Facility: Between 5 and 9 March 2012, the Agency carried out a physical inventory verification (PIV) at UCF, the results of which are now being evaluated by the Agency. Iran has now ceased its R&D activities at UCF involving the conversion of UF₆ enriched up to 3.34% U-235 into UO₂.⁶² The Agency has verified that Iran produced 24 kg of uranium in the form of UO₂ during these activities and that 13.6 kg of uranium in the form of UO₂ was subsequently transferred to FMP, where it was used to produce two fuel assemblies, each made of 12 fuel rods, for TRR. As of 13 May 2012, Iran had produced about 1500 kg of natural uranium in the form of UO₂. The Agency has verified that Iran has transferred 758.7 kg of uranium in the form of UO₂ to FMP.
36. On 22 April 2012, Iran introduced into the UCF process area 25 drums containing approximately 6560 kg of domestically produced uranium ore concentrate (UOC), and 25 drums containing approximately 9180 kg of UOC taken from Iran's stockpile of imported UOC.⁶³ Iran indicated that the UOC from these 50 drums would be mixed together and used for the production of natural UO₂.
37. Fuel Manufacturing Plant: On 12 May 2012, the Agency carried out a DIV and an

inspection at FMP and confirmed that the manufacture of assemblies made of 12 fuel rods containing UO₂ enriched to 3.34% U-235 had ceased and that the manufacture of pellets for the IR-40 Reactor using natural UO₂ was ongoing. The Agency confirmed that the manufacture of dummy assemblies⁶⁴ for IR-40 was continuing.

38. Fuel Plate Fabrication Plant: In a letter dated 2 May 2012, Iran informed the Agency that it had decided to combine into one facility the activities involving the conversion of UF₆ enriched up to 20% U-235 into U₃O₈ and the manufacture of fuel assemblies made of fuel plates containing U₃O₈, which at that time were being performed at UCF and FMP, respectively. In the same letter, Iran also provided the initial DIQ for this facility, which it refers to as the Fuel Plate Fabrication Plant (FPFP). A safeguards approach for FPFP was subsequently agreed between the Agency and Iran and is now being implemented. Between the start of conversion activities on 17 December 2011 and 15 May 2012, Iran has fed into the process 43 kg of UF₆ enriched up to 20% U-235 and produced 14 kg of uranium enriched up to 20% U-235 in the form of U₃O₈. On 15 May 2012, the Agency carried out a DIV and an inspection at FPFP and verified two fuel plates and one standard fuel assembly containing 19 plates, all of which were subsequently transferred to TRR. On 20 May 2012, the Agency verified a second standard fuel assembly containing 19 plates prior to its transfer to TRR.

H. Possible Military Dimensions

39. Previous reports by the Director General have identified outstanding issues related to possible military dimensions to Iran's nuclear programme and actions

required of Iran to resolve these.⁶⁵ Since 2002, the Agency has become increasingly concerned about the possible existence in Iran of undisclosed nuclear related activities involving military related organizations, including activities related to the development of a nuclear payload for a missile, about which the Agency has regularly received new information.

40. The Annex to the Director General's November 2011 report (GOV/2011/65) provided a detailed analysis of the information available to the Agency indicating that Iran has carried out activities that are relevant to the development of a nuclear explosive device. This information, which comes from a wide variety of independent sources, including from a number of Member States, from the Agency's own efforts and from information provided by Iran itself, is assessed by the Agency to be, overall, credible. The information indicates that, prior to the end of 2003 the activities took place under a structured programme; that some continued after 2003; and that some may still be ongoing.
41. In resolution 1929 (2010), the Security Council reaffirmed Iran's obligations to take the steps required by the Board of Governors in its resolutions GOV/2006/14 and GOV/2009/82, and to cooperate fully with the Agency on all outstanding issues, particularly those which give rise to concerns about the possible military dimensions to Iran's nuclear programme, including by providing access without delay to all sites, equipment, persons and documents requested by the Agency.⁶⁶ In its resolution GOV/2011/69

of 18 November 2011, the Board of Governors, inter alia, expressed its deep and increasing concern about the unresolved issues regarding the Iranian nuclear programme, including those which need to be clarified to exclude the existence of possible military dimensions.

42. In a letter dated 2 May 2012, the Agency reiterated its request that Iran provide the Agency with early access to a specified location within the Parchin site.⁶⁷ In the same letter, the Agency informed Iran that, based on satellite imagery, at this location, where virtually no activity had been observed for a number of years, the buildings of interest to the Agency are now subject to extensive activities that could hamper the Agency's ability to undertake effective verification. Since November 2011, the Agency has obtained more information related to the issues associated with the Parchin site, which further corroborates the analysis contained in the Annex to the Director General's November 2011 report.
43. As previously reported,⁶⁸ during the second round of talks in Tehran and in response to the Agency's request, Iran provided the Agency with an initial declaration in connection with the issues identified in Section C of the Annex to the Director General's November 2011 report (GOV/2011/65). Iran's declaration dismissed the Agency's concerns in relation to the aforementioned issues, largely on the grounds that Iran considered them to be based on unfounded allegations.

I. Design Information

44. Contrary to its Safeguards Agreement and relevant resolutions of the Board of

⁶² GOV/2011/65, para. 34.

⁶³ GOV/2003/75, Annex I, para. 8.

⁶⁴ A dummy assembly is similar to a fuel assembly except that it contains non-nuclear material.

⁶⁵ GOV/2011/29, para. 35; GOV/2011/7, Attachment; GOV/2010/10, paras 40–45; GOV/2009/55, paras 18–25; GOV/2008/38, paras 14–21; GOV/2008/15, paras 14–25 and Annex; GOV/2008/4, paras 35–42; GOV/2011/65, paras 38–45 and Annex.

⁶⁶ S/RES/1929, paras 2 and 3.

⁶⁷ With reference to the issues raised in GOV/2011/65, Annex, para. 49.

⁶⁸ GOV/2012/9, para. 8.

Governors and the Security Council, Iran is not implementing the provisions of the modified Code 3.1 of the Subsidiary Arrangements General Part to Iran's Safeguards Agreement.⁶⁹

45. Iran last provided the Agency with a DIQ for the IR-40 Reactor in 2006, and in 2007 provided some updated information on the facility. Since that time, Iran has conducted significant additional design and construction work on the reactor, but has not provided further information, as required pursuant to modified Code 3.1 of Iran's Subsidiary Arrangements General Part. The lack of up-to-date information on the reactor is now having an adverse impact on the Agency's ability to effectively verify the design of the facility. In light of this, in a letter dated 2 May 2012, the Agency requested that Iran provide an updated DIQ for the IR-40 Reactor as soon as possible.

46. As previously reported,⁷⁰ Iran's response to Agency requests that Iran confirm or provide further information regarding its stated intention to construct new nuclear facilities is that it would provide the Agency with the required information in "due time" rather than as required by the modified Code 3.1 of the Subsidiary Arrangements General Part to its Safeguards Agreement.⁷¹

⁶⁹ In accordance with Article 39 of Iran's Safeguards Agreement, agreed Subsidiary Arrangements cannot be changed unilaterally; nor is there a mechanism in the Safeguards Agreement for the suspension of provisions agreed to in the Subsidiary Arrangements. Therefore, as previously explained in the Director General's reports (see, for example, GOV/2007/22, 23 May 2007), the modified Code 3.1, as agreed to by Iran in 2003, remains in force. Iran is further bound by operative paragraph 5 of Security Council resolution 1929 (2010) to "comply fully and without qualification with its IAEA Safeguards Agreement, including through the application of modified Code 3.1."

⁷⁰ GOV/2011/29, para. 37.

⁷¹ GOV/2011/29, para. 37; GOV/2012/23, para. 29.

J. Additional Protocol

47. Contrary to the relevant resolutions of the Board of Governors and the Security Council, Iran is not implementing its Additional Protocol. The Agency will not be in a position to provide credible assurance about the absence of undeclared nuclear material and activities in Iran unless and until Iran provides the necessary cooperation with the Agency, including by implementing its Additional Protocol.⁷²

K. Other Matters

48. As previously reported,⁷³ the Agency found a discrepancy of 19.8 kg between the amount of nuclear material declared by the operator and that measured by the Agency in relation to conversion experiments carried out by Iran at the Jibr Ibn Hayan Multipurpose Research Laboratory (JHL) between 1995 and 2002.⁷⁴ As a possible means of addressing the discrepancy, Iran offered to process all of the waste material and to extract the uranium contained therein. In a letter dated 3 April 2012, the Agency explained why it considered that Iran's proposal would not allow resolution of the issue and proposed an alternative method by which to address the discrepancy. Both proposals were discussed by the Agency and Iran in Tehran on 22 April 2012 and consultations are continuing.

49. Iran has continued irradiating the fuel assembly consisting of 14 fuel plates

⁷² Iran's Additional Protocol was approved by the Board on 21 November 2003 and signed by Iran on 18 December 2003, although it has not been brought into force. Iran provisionally implemented its Additional Protocol between December 2003 and February 2006.

⁷³ GOV/2011/65, para. 49.

⁷⁴ This material had been under Agency seal since 2003; GOV/2003/75, paras 20–25 and Annex 1; GOV/2004/34, para. 32, and Annex, paras 10–12; GOV/2004/60, para. 33, Annex, paras 1–7; GOV/2011/65, para. 49.

containing U3O8 enriched up to 20% U-235. Iran has also continued to use a fuel assembly containing 12 rods of UO2 enriched to 3.34% U-235 as one of the control assemblies in the core of TRR. In response to a request from the Agency, Iran, in a letter dated 13 March 2012, provided the Agency with information related to the irradiation of nuclear material received from FMP. In a letter dated 19 March 2012, the Agency requested further information, as well as the TRR operator's plans for irradiating such material. The Agency has yet to receive a reply.

50. As previously reported,⁷⁵ Iran has provided the Agency with the commissioning schedule for the Bushehr Nuclear Power Plant (BNPP), which indicated that commissioning activity had commenced on 31 January 2012. On 22 and 23 April 2012, the Agency conducted a PIV at BNPP while the reactor was operating at 75% of its nominal power.

L. Summary

51. While the Agency continues to verify the non-diversion of declared nuclear material at the nuclear facilities and LOFs declared by Iran under its Safeguards Agreement, as Iran is not providing the necessary cooperation, including by not implementing its Additional Protocol, the Agency is unable to provide credible assurance about the absence of undeclared nuclear material and activities in Iran, and therefore to conclude that all nuclear material in Iran is in peaceful activities.⁷⁶

⁷⁵ GOV/2012/9, para. 49.

⁷⁶ The Board has confirmed on numerous occasions, since as early as 1992, that paragraph 2 of INFCIRC/153 (Corr.), which corresponds to Article 2 of Iran's Safeguards Agreement, authorizes and requires the Agency to seek to verify both the non-diversion of nuclear material from declared activities (i.e. correctness) and the absence of undeclared nuclear activities in the State (i.e. completeness) (see, for example, GOV/OR.864, para. 49).

52. Progress was made on a structured approach to clarifying the issues outlined in the Annex to the Director General's November 2011 report. The Director General invites Iran to expedite final agreement on the structured approach, as agreed with Mr Jalili, in Tehran on 21 May 2012, and urges Iran to engage the Agency on the substance of the issues as soon as possible, including by providing early access to the Parchin site.

53. The Director General urges Iran, as required in the binding resolutions of the Board of Governors and mandatory Security Council resolutions, to take steps towards the full implementation of its Safeguards Agreement and its other obligations, including: implementation of the provisions of its Additional Protocol; implementation of the modified Code 3.1 of the Subsidiary Arrangements General Part to its Safeguards Agreement; suspension of enrichment related activities; and suspension of heavy water related activities.

54. The Director General will continue to report as appropriate.

Source: Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions in the Islamic Republic of Iran// Site of the Institute for Science and International Security // http://www.isis-online.org/uploads/isis-reports/documents/IAEA_Iran_Report_25May2012.pdf.

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 (U.S.)
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 (U.S.)
DoE	Department of Energy (U.S.)
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	highly-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 destruction
MIT	Massachusetts Institute of Technology (U.S.)
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 Participants in the Conference

1. **Viatcheslav KANTOR** President of the International Luxembourg Forum on Preventing Nuclear Catastrophe; Ph.D. (Russia).
2. **James ACTON** Senior Associate in the Nuclear Policy Program at the Carnegie Endowment for International Peace; Ph.D. (United States).
3. **Uzi ARAD** Professor of the Institute for Policy and Strategy at the Lauder School of Government, Diplomacy and Strategy, Interdisciplinary Center Herzliya (former Chairman of the Israeli National Security Council, Israel).
4. **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); Academician (RAS, Russia).
5. **Vladimir BARANOVSKIY** Deputy Director of the IMEMO (RAS); Academician (RAS, Russia).

6. **Susanne BAUMANN** Head of Division, Nuclear Arms Control, Disarmament and Non-proliferation, Federal Ministry of Foreign Affairs (Germany).
7. **Robert BERLS** Director of the Moscow Representative Office and Senior Advisor for Russia/NIS Programs, Nuclear Threat Initiative; Ph.D. (United States).
8. **Francesco CALOGERO** Professor of Theoretical Physics of the Department of Physics, University of Rome "La Sapienza" (former Secretary General of Pugwash Conferences on Science and World Affairs, Italy).
9. **Shahran CHUBIN** Non Resident Senior Associate at the Carnegie Endowment for International Peace; Ph.D. (Switzerland).
10. **Armand CLESSE** Director of the Luxembourg Institute for European and International Studies; Ph.D. (Luxembourg).
11. **Thomas COCHRAN** Consulting Senior Scientist (former Director of the Nuclear Program), Natural Resources Defense Council; Ph.D. (United States).
12. **Jayantha DHANAPALA** President of Pugwash Conferences on Science and World Affairs (former United Nations Under-Secretary-General for Disarmament Affairs); Ambassador (Sri Lanka).
13. **Anatoliy DIAKOV** Director of the Center for Arms Control, Energy and Environmental Studies of the Moscow Institute of Physics and Technology; Ph.D. (Russia).

14. **Vladimir DVORKIN** Chairman of the Organizing Committee, International Luxembourg Forum; Principal Researcher of the IMEMO (RAS, former Director of the 4th Major Institute of the Ministry of Defense); Professor, Full Member of the Academies of Military Sciences, Russian Academy of Astronautics; Major-General, ret. (Russia).
15. **Rolf EKEUS** Ambassador; Member of the Supervisory Council of the International Luxembourg Forum (former High Commissioner on National Minorities at the OSCE; Chairman of the Governing Board, SIPRI; Sweden).
16. **Michael ELLEMAN** Senior Fellow for Regional Security Cooperation, Middle East office, International Institute for Strategic Studies in London; Ph.D. (United States).
17. **Vladimir EVSEEV** Head of the Research Planning Division of the Russian Academy of Sciences; Senior Associate of the IMEMO (RAS); Ph.D. (Russia).
18. **Mark FITZPATRICK** Director of the Non-proliferation and Disarmament Programme, International Institute for Strategic Studies in London (United States).
19. **Vagif GUSEYNOV** Director of the Institute for Strategic Assessments and Analysis (Russia).
20. **Igor IVANOV** President of the Russian International Affairs Council and Professor of the Moscow State Institute for International Relations (MGIMO); Member of the Supervisory Council of the International Luxembourg Forum (former Russian Minister of Foreign Affairs, Secretary of the Security Council of the Russian Federation); Corresponding member (RAS, Russia).

21. **Carlo JEAN** President of the Society for the Management of Nuclear Plants "SOGIN" (former Military Adviser to the President of Italy); General, ret. (Italy).
22. **Alexander KALIADIN** Principal Researcher of the IMEMO (RAS); Ph.D. (Russia).
23. **Mariya KALINOVSKAYA** Third Secretary, Embassy of the Russian Federation in the Federal Republic of Germany (Russia).
24. **Sergey KARAGANOV** Chairman of Presidium of the Council on Foreign and Defense Policy; Dean of the School of International Economics and Foreign Affairs of the National Research University Higher School of Economics; Professor (Russia).
25. **Catherine KELLEHER** Senior Fellow of the Watson Institute for International Studies, Brown University; Professor (United States).
26. **Isaak KHALATNIKOV** Director Emeritus of the Landau Institute for Theoretical Physics (RAS); Academician (RAS, Russia).
27. **Anton KHLOPKOV** Director of the Center for Energy and Security Studies (Russia).
28. **Byungki KIM** Professor of Politics and International Relations, Directing Head of the International Security Policy Forum, Graduate School of International Studies, Vice Director of the Institute for Sustainable Development, Korea University; Ph.D. (Republic of Korea).
29. **Alexander KONOVALOV** President of the Institute for Strategic Assessments; Professor of the MGIMO; Ph.D. (Russia).

30. **Nikolay LAVEROV** Vice President of the Russian Academy of Sciences; Member of the Supervisory Council of the International Luxembourg Forum (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).
31. **Robert LEGVOLD** Marshall D. Shulman Professor Emeritus, Department of Political Science, Columbia University; Ph.D. (United States).
32. **Göran LENNMARKER** Chairman of the Governing Board, SIPRI (former President of the OSCE Parliamentary Assembly, Sweden).
33. **Vladimir LEONTIEV** Deputy Director of the Department for Security Affairs and Disarmament, Ministry of Foreign Affairs of the Russian Federation (Russia).
34. **Ariel LEVITE** Non Resident Senior Associate at the Carnegie Endowment for International Peace (former Deputy National Security Advisor [Defense Policy] and Head of the Bureau of International Security at the Israeli Ministry of Defense); Ph.D. (Israel).
35. **Boris LUKSHIN** Junior Research Fellow of the Institute for U.S. and Canadian Studies (RAS, Russia).
36. **Eduard MALAYAN** Ambassador-at-large, Department of North America, Ministry of Foreign Affairs of the Russian Federation (Russia).
37. **Rolf NIKEL** Commissioner of the Federal Government for Disarmament and Arms Control; Ambassador (Germany).
38. **Alexander NIKITIN** Director of the Center for Euro-Atlantic Security, MGIMO; Professor (Russia).

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|--------------------------------|---|--------------------------------|---|
| 39. Vladimir ORLOV | President of the PIR Center; Director of the Russian Center for Policy Studies in Geneva; Member of the Russian delegation at the 2010 NPT Review Conference; Ph.D. (Russia). | 45. Roald SAGDEEV | Distinguished University Professor, Department of Physics at the University of Maryland; Director Emeritus of the Russian Space Research Institute; Member of the Supervisory Council of the International Luxembourg Forum; Academician (RAS, Russia/United States). |
| 40. Sergey OZNOBISHCHEV | Deputy Chairman of the Organizing Committee, International Luxembourg Forum; Director of the Institute for Strategic Assessments; Professor of the MGIMO (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. Evgeney SATANOVSKIY | President of the Institute of the Middle East; Ph.D. (Russia). |
| 41. William PERRY | Professor, Stanford University; Member of the Supervisory Council of the International Luxembourg Forum (former Secretary of the U.S. Department of Defense, United States). | 47. Alexander SAVELYEV | Head of the Department of Strategic Studies, IMEMO (RAS); Ph.D. (Russia). |
| 42. Theodore POSTOL | Professor of Science, Technology and National Security Policy at the Massachusetts Institute of Technology; Ph.D. (United States). | 48. Vladimir SAZHIN | Senior Associate of the Institute for Oriental Studies (RAS); Professor (Russia). |
| 43. William POTTER | Director of the James Martin Center for Non-proliferation Studies and Sam Nunn and Richard Lugar Professor of Non-proliferation Studies, Monterey Institute of International Studies; Ph.D. (United States). | 49. Carlo SCHAERF | Professor of Physics of the University of Rome "Tor Vergata" (former President of the National Commission for Nuclear Physics, Italy). |
| 44. Tariq RAUF | Staff member at the International Atomic Energy Agency, former Coordinator of the IAEA Low Enriched Uranium Bank and Head, Verification and Security Policy Coordination, Office of External Relations and Policy Coordination of the International Atomic Energy Agency; Ph.D. (IAEA). | 50. Yury SHIYAN | Principal Expert on Arms Control and Non-proliferation, Presidium of the Russian Academy of Sciences (Russia). |
| | | 51. Fred TANNER | Director of the Geneva Centre for Security Policy; Ambassador (Switzerland). |
| | | 52. Roland TIMERBAEV | Ambassador (former Permanent USSR/Russian Representative to International Organizations in Vienna, Russia). |
| | | 53. Andrei ZAGORSKI | Head of the Department for Disarmament and Conflict Resolution Studies, IMEMO (RAS); Ph.D. (Russia). |
| | | 54. Pan ZHENQIANG | Senior Adviser of the China Reform Forum (former Director of the Institute for Strategic Studies, National Defense University of China); Major-General, ret. (China). |

APPENDIX 5

Pictures



Pic. 1



Pic. 2



Pic. 3. Viatcheslav Kantor, President of the International Luxemburg Forum on Preventing Nuclear Catastrophe (Russia)



Pic. 4. Conference session (from left to right): **Sergey Oznobishchev**, Deputy Chairman of the Organizing Committee, International Luxembourg Forum (Russia) and **Alexei Arbatov**, Head of the Center for International Security of the IMEMO (RAS, Russia)



Pic. 6. Conference session (from left to right): **Vladimir Evseev**, Head of the Research Planning Division of the Russian Academy of Sciences (Russia) and **William Potter**, Director of the James Martin Center for Non-proliferation Studies and Professor, Monterey Institute of International Studies (United States)



Pic. 5. Press conference (from left to right): **Rolf Ekeus**, Ambassador; Member of the Supervisory Council of the International Luxembourg Forum (Sweden), **Vladimir Dvorkin**, Chairman of the Organizing Committee, International Luxembourg Forum; Major-General, ret. (Russia) and **Nikolay Laverov**, Vice President of the Russian Academy of Sciences; Academician (RAS, Russia)



Pic. 7. Conference session (from left to right): **Nikolay Laverov**, Vice President of the Russian Academy of Sciences; Academician (RAS, Russia), **Igor Ivanov**, President of the Russian International Affairs Council; Corresponding member (RAS, Russia) and **Vladimir Dvorkin**, Chairman of the Organizing Committee, International Luxembourg Forum; Major-General, ret. (Russia)



*Pic. 8. Conference session: **Mark Fitzpatrick**, Director of the Non-proliferation and Disarmament Programme, International Institute for Strategic Studies in London (United States)*



*Pic. 10. **William Perry**, Professor, Stanford University (former Secretary of the U.S. Department of Defense, United States)*



*Pic. 9. Conference session (from left to right): **Anatoliy Diakov**, Director of the Center for Arms Control, Energy and Environmental Studies, Moscow Institute of Physics and Technology (Russia) and **Thomas Cochran**, Consulting Senior Scientist, Natural Resources Defense Council (United States)*



*Pic. 11. Coffee break (from left to right): **Boris Lukshin**, Junior Research Fellow, Institute for U.S. and Canadian Studies (RAS, Russia) and **Vladimir Sazhin**, Senior Associate, Institute for Oriental Studies (RAS, Russia)*



Pic. 12. Conference session: **Roald Sagdeev**, Distinguished University Professor, Department of Physics, University of Maryland; Academician (RAS, Russia/United States)



Pic. 14. Conference session (from left to right): **Jayantha Dhanapala**, President of Pugwash Conferences on Science and World Affairs; Ambassador (Sri Lanka) and **Rolf Nickel**, Commissioner of the Federal Government for Disarmament and Arms Control; Ambassador (Germany)



Pic. 13. Conference session (from left to right): **Carlo Schaerf**, Professor of Physics, University of Rome "Tor Vergata" (Italy), **Vladimir Baranovskiy**, Deputy Director, IMEMO (RAS); Academician (RAS, Russia) and **Carlo Jean**, President of the Society for the Management of Nuclear Plants "SOGIN"; General, ret. (Italy)



Pic. 15. Conference session (from left to right): **Vladimir Leontiev**, Deputy Director, Department for Security Affairs and Disarmament, Ministry of Foreign Affairs of the Russian Federation and **Ariel Levite**, Non Resident Senior Associate at the Carnegie Endowment for International Peace (Israel)



Pic. 16. Conference session: **Alexander Savelyev**, Head of the Department of Strategic Studies, IMEMO (RAS, Russia)



Pic. 18. Conference session (from left to right): **Francesco Calogero**, Professor of Theoretical Physics, University of Rome "La Sapienza" (Italy) and **Catherine Kelleher**, Senior Fellow, Watson Institute for International Studies, Brown University (United States)



Pic. 17. Conference session (from left to right): **Roald Sagdeev**, Distinguished University Professor, Department of Physics, University of Maryland; Academician (RAS, Russia/United States), **Isaak Khalatnikov**, Director Emeritus of the Landau Institute for Theoretical Physics (RAS); Academician (RAS, Russia) and **Valentina Glebovskaya**, guest of the conference (Russia)



Pic. 19. Conference session (from left to right): **James Acton**, Senior Associate in the Nuclear Policy Program, Carnegie Endowment for International Peace (United States) and **Anton Khlopkov**, Director of the Center for Energy and Security Studies (Russia)



Pic. 20. Conference session (from left to right): **Andrei Zagorski**, Head of the Department for Disarmament and Conflict Resolution Studies, IMEMO (RAS, Russia) and **Göran Lennmarker**, Chairman of the Governing Board, SIPRI (Sweden)



Pic. 22. During the break (from left to right): **Tariq Rauf**, Staff member, International Atomic Energy Agency and **Anton Khlopkov**, Director of the Center for Energy and Security Studies (Russia)



Pic. 21. Conference session: **Francesco Calogero**, Professor of Theoretical Physics, University of Rome "La Sapienza" (Italy)



Pic. 23. Conference session: **Shahran Chubin**, Non Resident Senior Associate at the Carnegie Endowment for International Peace (Switzerland)



Pic.24



Pic. 25. Conference session: **Uzi Arad**, Professor of the Institute for Policy and Strategy, Lauder School of Government, Diplomacy and Strategy, Interdisciplinary Center Herzliya (Israel)



Pic. 26. During the break (from left to right): **Jayantha Dhanapala**, President of Pugwash Conferences on Science and World Affairs; Ambassador (Sri Lanka), **Alexander Nikitin**, Director of the Center for Euro-Atlantic Security, MGIMO (Russia) and **Francesco Calogero**, Professor of Theoretical Physics, University of Rome "La Sapienza" (Italy)



Pic. 27. Conference session (from left to right): **Thomas Cochran**, Consulting Senior Scientist, Natural Resources Defense Council (United States) and **Tariq Rauf**, Staff member, International Atomic Energy Agency



Pic.28



Pic.30



Pic. 29. During the break (from left to right): **Carlo Schaerf**, Professor of Physics, University of Rome "Tor Vergata" (Italy) and **Catherine Kelleher**, Senior Fellow, Watson Institute for International Studies, Brown University (United States)



Pic. 31. Conference session: **Sergey Karaganov**, Dean of the School of International Economics and Foreign Affairs, National Research University Higher School of Economics (Russia)



Pic. 32. Press conference (from left to right): **Rolf Ekeus**, Ambassador; Member of the Supervisory Council of the International Luxembourg Forum (Sweden) and **Vladimir Dvorkin**, Chairman of the Organizing Committee, International Luxembourg Forum; Major-General, ret. (Russia)



Pic.33



Pic. 34. Conference session (from left to right): **William Potter**, Director of the James Martin Center for Non-proliferation Studies and Professor, Monterey Institute of International Studies and **Armand Clesse**, Director of the Luxembourg Institute for European and International Studies (Luxembourg)



Pic. 35. Conference session: **Theodore Postol**, Professor of Science, Technology and National Security Policy, Massachusetts Institute of Technology (United States)



Pic. 36. Conference session (from left to right): **Roland Timerbaev**, Ambassador (former Permanent USSR/Russian Representative to International Organizations in Vienna, Russia) and **Yury Shiyan**, Principal Expert on Arms Control and Non-proliferation, Presidium (RAS, Russia)



Pic. 37. Conference session: **Alexander Konovalov**, President of the Institute for Strategic Assessments (Russia)



Pic. 38. **Evgeney Satanovskiy**, President of the Institute of the Middle East (Russia)



Pic. 39



Pic. 40. Conference session: **Pan Zhenqiang**, Senior Adviser, China Reform Forum; Major-General, ret. (China)



Pic. 41. During the break (from left to right): **Robert Legvold**, Marshall D. Shulman Professor Emeritus, Columbia University (United States) and **Rolf Nikel**, Commissioner of the Federal Government for Disarmament and Arms Control; Ambassador (Germany)



Pic. 42. During the break (from left to right): **Tariq Rauf**, Staff member, International Atomic Energy Agency, **Fred Tanner**, Director of the Geneva Centre for Security Policy; Ambassador (Switzerland) and **Jayantha Dhanapala**, President of Pugwash Conferences on Science and World Affairs; Ambassador (Sri Lanka)



Pic. 43. Conference session (from left to right): **William Potter**, Director of the James Martin Center for Non-proliferation Studies and Professor, Monterey Institute of International Studies (United States) and **Armand Clesse**, Director of the Luxembourg Institute for European and International Studies (Luxembourg)



Pic.44



Pic. 45



Pic. 47. Conference session: **Rolf Ekeus**, Ambassador; Member of the Supervisory Council of the International Luxembourg Forum (Sweden)



Pic. 46. Interviews: **Viatcheslav Kantor**, President of the International Luxembourg Forum on Preventing Nuclear Catastrophe (Russia)



Pic. 48



Pic. 49. Conference session (from left to right): **Robert Legvold**, Marshall D. Shulman Professor Emeritus, Columbia University (United States), **Byungki Kim**, Professor and Directing Head of the International Security Policy Forum, Graduate School of International Studies, Korea University and **Robert Berls**, Director of the Moscow Representative Office, Nuclear Threat Initiative (United States)



Pic. 51. Conference session: **Michael Elleman**, Senior Fellow for Regional Security Cooperation, Middle East office, International Institute for Strategic Studies in London (United States)



Pic. 50. Conference session: **Vladimir Orlov**, President of the PIR Center; Director of the Russian Center for Policy Studies in Geneva (Russia)



Pic. 52

