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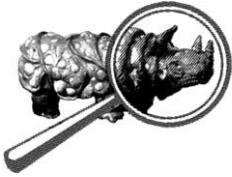
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Alexander Radchuk

THE GREAT NUCLEAR GAME OF THE 21ST CENTURY: DISARMAMENT OR WAR?

*It's a great huge game of chess that's being played—all over the world—if this IS the world at all, you know. Oh, what fun it is! How I WISH I was one of them! I wouldn't mind being a Pawn, if only I might join—though of course I should LIKE to be a Queen, best.*

Lewis Carroll, *Through the Looking-Glass*

Almost two generations of mankind have lived in a world that knows the most destructive weapons ever invented. These weapons can destroy not just cities or armies, but the entire planet. For the past six decades, this world has also known two parallel and interlinked processes: a strategic offensive arms race and nuclear disarmament.

Every nation inevitably regards the issue of possessing nuclear weapons (NW) through the prism of its national interests. As the world economy is showing signs of weakness, military strength often becomes the key factor that determines the nation's international standing. But the subjective nature of modern politics, in which personal traits of some leaders begin to prevail over political expediency and even common sense, makes one think hard about the feasibility of achieving the *nuclear zero*.

Many politicians and scientists have spent years trying to open up the window of opportunity for nuclear disarmament. Some high-caliber figures have recently joined that effort.

In their article "A World Free of Nuclear Weapons" published in early 2007, George Shultz, William Perry, Henry Kissinger and Sam Nunn argued that nuclear weapons pose an enormous danger, and that the world should move towards their universal and concerted reductions, so that one day that threat could be eliminated altogether. Now that the Cold War is over, the Soviet–American doctrine of mutual deterrence has become a thing of the past, they said. Quite unexpectedly, that statement became the focus of world attention, as the idea of nuclear disarmament was put at the top of the agenda. One would imagine that at the height of the world economic crisis, public debate and government efforts in Russia and other countries should focus on other things, such as the economy, the financial situation, trade, the need for new reserve currencies, and many other issues. But even Iranian President Mahmoud Ahmadinejad, speaking at the UN General Assembly in September 2008, proposed the idea of creating an independent committee to oversee the disarmament of the nuclear powers.<sup>1</sup>

In the run-up to U.S. President Barak Obama's visit to Moscow, a group of prominent politicians and scientists from all over the world put their shoulder to the wheel of the Global Zero initiative and proposed a plan of a complete elimination of nuclear weapons, to be achieved in several stages by 2030.<sup>2</sup> The plan includes four stages:

- ❑ Russia and the United States agree to reduce their arsenals to 1,000 nuclear warheads each.
- ❑ By 2021, Moscow and Washington reduce the ceiling to 500 warheads each. All the other nuclear powers (China, Britain, France, India, Pakistan, and Israel), commit themselves to freezing and later reducing their strategic arsenals.



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- ❑ In 2019–2023, a Global Zero treaty is signed, with a schedule of step-by-step reductions of all nuclear arsenals to a minimum.
- ❑ In 2024–2030, the process reaches completion, and the verification system remains in operation.

Speaking in Prague on April 5, 2009, President Obama had this to say about nuclear arms reductions:

Today, the Cold War has disappeared but thousands of those weapons have not. In a strange turn of history, the threat of global nuclear war has gone down, but the risk of a nuclear attack has gone up . . . And as nuclear power—as a nuclear power, as the only nuclear power to have used a nuclear weapon, the United States has a moral responsibility to act. We cannot succeed in this endeavor alone, but we can lead it, we can start it. So today, I state clearly and with conviction America’s commitment to seek the peace and security of a world without nuclear weapons.<sup>3</sup>

On June 12, 2009 UN Secretary-General Ban Ki-moon made a statement on the occasion of the launch of preparations for the International Day of Peace. He announced the beginning of a campaign called “WMD—We Must Disarm.” He urged governments and peoples of the world to focus their attention on nuclear disarmament and nonproliferation. He said that without energetic efforts, the humankind will continue to face the threat posed by the existing nuclear weapons stockpiles.

Finally, last May, representatives of 189 countries which took part in the 2010 NPT Review Conference voted unanimously for the Final Declaration which reaffirms the commitment of the five official nuclear powers—Russia, the US, Britain, France, and China—to reducing their nuclear arsenals. The Declaration also calls for a 2012 conference on “establishing a zone free of nuclear weapons and any other weapons of mass destruction in the Middle East.”<sup>4</sup>

President Barak Obama’s visit to Moscow in July 2009 gave a new impetus to the process of further reduction and limitation of Russian and American strategic offensive armaments. The two sides signed a document entitled Joint Understanding for the START Follow-on Treaty.<sup>5</sup> The document contained the outlines of a “legally binding agreement” to replace the START-I Treaty, which was due to expire in December 2009. It was stated that the new treaty would remain in force for the next 10 years. The new strategic offensive arms ceilings were to be set in the range of 500–1,100 strategic delivery vehicles and 1,500–1,675 deployed warheads.

Let us assume that the new START Treaty has been ratified, and the agreed reductions have been implemented. What next? Another 10 years of talks, resulting in another round of miniscule reductions? New countries becoming involved in the talks? Widening the scope of limitations to include non-strategic nuclear weapons? Or a sudden new twist, with either a radical new agreement or no agreement of any kind whatsoever?

To some extent, America’s vision of the prospects for bilateral nuclear disarmament is set out in U.S. Vice President Joe Biden’s interview in *The Wall Street Journal* on July 25, 2009.<sup>6</sup> Biden predicted that growing economic difficulties would force Moscow to reconcile itself to the loss of its former geopolitical role, leading to a decline of Russia’s influence in the post-Soviet space and a substantial dwindling of Russia’s nuclear arsenal. In Biden’s opinion, it was Russia’s inability to maintain its nuclear arsenal at its current level that had forced Moscow to resume arms reduction talks with President Obama. Biden made no secret of his view that the U.S. should play the role of a senior partner in its relations with a “weakening Russia.”

At about the same time, Edward Lfft, a Georgetown University professor and the latest U.S. representative at the missile defense talks, proposed the following steps for the Russian–American arms reduction process<sup>7</sup>:

- ❑ Cut nuclear weapons to about 1,000 deployed strategic warheads for each side. “There is nothing special about the number 1,000. It’s just a good round number.” (Well, that’s a persuasive argument!) Meanwhile, the deterrence system continues to function in its current form; the triad of nuclear forces and the existing system of verification are all left as they are.
- ❑ With deeper cuts, “a change of quantity will become a change of quality,” and “the deterrence concept may have to be revised, including extended deterrence.” At the same time, “deterrence is a fundamental aspect of international security, and the need for it will

remain even if all nuclear weapons are eliminated.” However, “as the role of nuclear weapons diminishes, the deterrence system will increasingly rely on conventional weapons. . . . Conventional armed forces will play a comprehensive role in the deterrence system.”

That latter idea is fully in line with the American ideology of a *new strategic triad*. And everything would be well with that—except that Russia does not seem to have a place in that proposed new system, because Moscow is being told “to be more understanding of the proposal to replace a small number of nuclear warheads with non-nuclear ones,” and “to begin addressing the problem of its large arsenal of tactical and sub-strategic nuclear warheads.” If it fails, however, to propose any ideas as to how conventional armaments, in which the United States has an overwhelming superiority, are to be cut or limited.

Why then all this keen interest in nuclear disarmament? Is it explained by the traditional worries about the Russian and American nuclear arsenals, which—just like in the Cold War years—can lead to a nuclear conflict, with catastrophic consequences for the whole world? Is it the habit of viewing strategic offensive arms reductions as a locomotive in Russian–American relations, which can help resolve other problems in bilateral relations? Could it be the hope that new decisions will somehow influence the other nuclear powers, both official and unofficial? Or could it be the simple inability to take a fresh look at the situation and to be more realistic about the role and place of nuclear weapons in the modern world, and in Russian–American relations in particular?

There is no definitive answer to all these questions.

All the proposed programs of achieving the nuclear zero, all the proposed steps in that direction, all the specific measures being discussed, look fairly scholastic. That is because they fail to address the essence of the problem. And the essence of the problem is that, sad as it may be, only nuclear weapons, the ultimate manifestation of military might, can serve as a reliable guarantee of security for any nation in the modern world.

As the world is going through global civilizational changes, there is still no answer to the key question of what nuclear weapons truly represent. Are these weapons merely a symbol of military might of a bygone era—or are they a prototype and the foundation of new weapons of the future? Is force still a viable method of resolving international conflicts? And if so, will nuclear weapons—and therefore nuclear deterrence as well—remain an effective method of resolving differences and protecting national interests? Will the use of force against adversaries and competitors, or the threat of that use, remain part of the arsenal of foreign policy tools? Without answers to all these questions, there is simply no point discussing the prospects for nuclear disarmament.

There has been no proper discussion of the real rather than imaginary role and place of nuclear weapons in the 21st century. There has been no proper debate about the role of military strength, or about effective international mechanisms of providing security. Is there any other status symbol in the world as powerful as possession of nuclear weapons? Why are so many countries trying to acquire them? Why is it that the list of permanent Security Council members is also the list of the “official” (as stipulated by the NPT) nuclear powers? What is the role and place of nuclear weapons and nuclear deterrence in this day and age?

## VIEWS OF THE NUCLEAR CLUB MEMBERS

There is a broad spectrum of views on the role and place of nuclear weapons at present and in the future. That spectrum lies between two diametrically opposed positions. On the one extreme, we have those who argue that nuclear weapons should be completely excluded from the arsenal of instruments of armed combat. On the other, some are proposing that nuclear weapons should become weapons of the battlefield rather than mere political instruments.

The proponents of the first point of view (such as Dr. E.A. Fedosov)<sup>8</sup> believe that in the modern world, a nuclear war cannot help to achieve the political goals which necessitated the armed conflict in the first place. They say that a gradual shift is taking place away from the nuclear paradigm of the 20th century, and all the old policies of armed conflict are being replaced. The new alternative to nuclear weapons is modern high-tech and high-precision systems, which can completely replace nuclear missiles as a deterrent in the not too distant future.



Meanwhile, some are saying that nuclear weapons can now be put to real combat uses. They argue that although (or possibly because) the threat of a large-scale nuclear war has all but gone, the political and psychological barriers which prevented the use of nuclear weapons in the past have also weakened. That means that a limited use of nuclear weapons is no longer seen as something unimaginable—in may in fact be quite feasible in certain situations, they say. Therefore, continued reliance on nuclear weapons and plans for their modernization are not a caprice of some politicians. It is a possible answer to some of the threats which really exist, or which are clearly felt.

In the United States, not everyone subscribes to the opinion about the need for further nuclear disarmament measures. Not everyone believes that nuclear deterrence should be excluded from the list of national security instruments. For example, John Bolton, the former U.S. representative at the UN, disagrees with Barak Obama's opinion that reducing the American nuclear arsenal will make the world more secure and remove the motivation for other countries to try to acquire their own nuclear weapons. "Obama's policy is dangerous for the United States and its allies who rely on the American nuclear umbrella. Obama believes that decisive reductions of the American nuclear arsenal will reduce nuclear proliferation risks. The actual outcome of such policy will be just the opposite." And former U.S. defense secretary James Schlesinger argues that eliminating nuclear weapons would not be in the interests of the United States itself or the rest of the world.<sup>9</sup>

Due to the enormous destructive power of strategic offensive nuclear weapons, their inter-continental range and long-term global consequences of their use, the main purpose of these weapons is strategic deterrence (primarily at the global level). The specific nature of these purposes is determined by the military and political leadership of the country both for wartime and peacetime, in the interests of implementing the policy of deterring potential aggression. The "strategic" in the description of these nuclear weapons applies not just to the actual military side of things, but to the larger overall strategy (A.E. Vandam,<sup>10</sup> E. Kingston-McClory,<sup>11</sup> Basil Henry Liddel Hart,<sup>12</sup> V.Y. Novitsky<sup>13</sup>).

In that sense, military strategy is only a part of the overall national strategy.

Back in 1913, Russian military expert V.Y. Novitsky wrote that "the goal of higher strategy is to ensure an independent existence and further development of the state, in accordance with its political, economic, historical and cultural interests." The acquisition of nuclear weapons is a guaranteed way of achieving that goal. But whereas military strategy is limited to military issues, higher strategy deals not just with war, but with the subsequent peace as well. Higher strategy must not only combine the various instruments of waging war—it must also make sure that the use of those instruments does not jeopardize the future peace or threaten the nation's welfare and security. The goal of higher strategy during peace time is to avoid war and protect national interests without resorting to military action. In war time, the higher strategy must define the objectives of the war, the military plans and the methods of waging that war. In that sense, the term *strategic*, as applied to nuclear weapons, refers to higher strategy.

It must be admitted that for over six decades now, there has not been a world war—no matter how hard the opponents of nuclear deterrence try to play this down. World wars are started by superpowers—but they are also prevented by superpowers. Nuclear deterrence continues to work to this day, albeit in a slightly different form. The best illustration is North Korea and Iran. For these two countries, the nuclear programs that merely provide the possibility of acquiring nuclear weapons now serve as perfectly workable instruments of ensuring their national security. North Korea's nuclear tests and Iran's missile tests have made many other countries adopt a very different tone when talking to them. Many respected experts believe that had Saddam Hussain acquired WMD, the United States would not have dared to start a war against Iraq. Neither did the former Yugoslavia have any nuclear weapons.

That could well be the reason why there are mounting problems with the NPT regime, especially with regard to the so-called negative security guarantees given by the nuclear-weapons states to non-nuclear states—i.e., guarantees that nuclear-weapon states will not put pressure or use blackmail against non-nuclear states.

Under the NPT treaty, only those nations that had tested their nuclear weapons before January 1, 1967 are recognized as nuclear-weapon states. There are five such states: the U.S., Russia, Britain, France, and China.

At the same time, according to SIPRI,<sup>14</sup> there were at least another four countries possessing nuclear weapons as of January 2007. These are India with about 50 warheads, Pakistan with about 60, Israel with about 100, and North Korea with 6 nuclear devices.

As we can see, all those countries which are technically capable of creating nuclear weapons and which are not part of some guaranteed system of providing their own security (North Korea, Iran) are not abandoning plans of acquiring nuclear weapons. According to various estimates, there are now 20 to 45 countries in the world that are capable of building a nuclear device.

## THE UNITED STATES

The United States was the first country in the world to acquire nuclear weapons. It was the first to conduct nuclear tests in July 1945, and the first (and only) country to have used it for military purposes, destroying the Japanese cities of Hiroshima and Nagasaki in August 1945.

The project to create nuclear weapons was completed at an astounding speed, despite the ongoing World War II. Leo Szilard and Enrico Fermi informed the U.S. government about the possible military implications of nuclear studies in March 1939. The first nuclear detonation was conducted near Alamogordo in New Mexico a little over six years later, on July 16, 1945.<sup>15</sup>

Over the past six decades, there have been many changes to the U.S. nuclear doctrine. In January 2002, a report was submitted to the U.S. Congress outlining the state of the American nuclear arsenal. The report contained the key provisions of the U.S. nuclear strategy and set out plans for the next 5–10 years.<sup>16</sup> In the U.S. strategic planning, the threat-based approaches dating back to the Cold War were replaced with approaches based on opportunities. That will enable Washington to maintain an effective deterrent in the coming decades while the size of the nuclear arsenals of the United States and its allies will be reduced to the lowest possible level.

The report also mentions that the U.S. nuclear potential has some unique characteristics. It plays an extremely important role in the system of defense of the United States, as well as America's friends and allies. It enables the United States to achieve important strategic and military goals. It provides the military instruments for deterring a wide range of threats, including the threat posed by WMD and large conventional forces. Nuclear forces are the main instrument of conducting an effective strategy of deterrence against a large number of potential adversaries in a whole range of unexpected situations. The American capability to deliver nuclear strikes of various scale, scope and direction will be augmented by other military instruments. Therefore, the United States needs a new combination of nuclear, non-nuclear and defensive forces to deal with a whole host of possible adversaries and unexpected threats the country might have to face in the coming decades. That is why the Pentagon has established the new strategic triad, which includes:

- Offensive systems (nuclear and non-nuclear).
- Defensive (active and passive).
- Modernized defense infrastructure to provide new capabilities in counter new threats.

The first component of this triad, the offensive weapons, should surpass the triad of the Cold War era—the intercontinental ballistic missiles, submarine-launched ballistic missiles, and long-range nuclear bombers. The defensive systems are expected to shield against limited strikes and reduce their effectiveness. Combined with America's ability to deliver a retaliatory strike, these systems will be able to prevent an attack and give America new capabilities in crisis settlement, improve its position in regional confrontations, and provide a guarantee against the traditional instruments of deterrence being attacked. The modernized nuclear infrastructure should enable the United States to get rid of unnecessary weapons and reduce the risk of technical problems.

By 2012, America's operationally deployed nuclear forces should include 1,700–2,100 strategic missile warheads, 14 nuclear submarines carrying *Trident* submarine-launched ballistic missiles (SLBMs), with two out of the 14 missiles in combat-ready state at any given time), 500 *Minuteman* intercontinental ballistic missiles (ICBMs), 76 *B-52H* bombers and 21 *B-2* bombers. These weapons will be the instrument of the American deterrence policy. They will be keeping the adversary's targets in their crosshairs, including the enemy's political command infrastructure and its armed forces. They will also prevent the adversary from achieving its own military objectives. The targets will include command and military infrastructure, especially weapons of



mass destruction, military command facilities and other command and infrastructure nodes. The numerical cuts of the U.S. nuclear arsenal under the Moscow Treaty of 2002 will be compensated for by the improved capability of that arsenal and by the new elements of the strategic triad.

That trend will not be affected by the new U.S.–Russian START treaty. Seven years after its coming into force (i.e., not before the second half of 2017), the American strategic arsenal (as well as Russia's) will still have up to 700 deployed ICBMs, SLBMs and heavy bombers carrying up to 1,550 nuclear warheads that count towards the overall ceiling.

Meanwhile, the new U.S. nuclear strategy unveiled on April 6, 2010 (two days before the signing of the Moscow treaty) says that “the growth of unrivalled U.S. conventional military capabilities, major improvements in missile defenses, and easing of Cold War rivalries... enable us to fulfill those objectives as significantly lower nuclear force levels and with reduced reliance on nuclear weapons.” For the first time, official emphasis has been shifted towards countering nuclear proliferation and nuclear terrorism. However, the United States maintains all the components of its nuclear “triad.” The “fundamental”—though not the sole—purpose of that triad is still to deter the potential aggressor.<sup>17</sup>

Thanks to its vast superiority over all the other countries in conventional forces and high-precision weapons, the United States can achieve most of its military objectives without using nuclear weapons. The American armed forces can do it efficiently, without sustaining major losses and without causing a global environmental catastrophe. In the wars in Iraq and Afghanistan, the United States has been testing the new structure of its armed forces, new ways of using them, as well as new systems of intelligence, communications and command-and-control. In the past two decades, the American armed forces have remained in a state of permanent readiness for war, constantly improving their fighting ability.

Meanwhile, the strategic offensive forces have become something of a burden for the United States, because they are quite expensive to maintain and impossible to use in any normal war. These forces are not going to be a very useful asset in the wars of the fifth, sixth and the subsequent generations. Such assets should be shed—and rather than just throwing them away, Washington is trying to *sell* them to its competitors, and to get the best possible price for them.

In September 2003, there was a media report claiming that the U.S. armed forces were developing a new type of nuclear device based on hafnium. That device was said to possess enormous destructive power. Its detonation produces radiation similar to that of a neutron bomb, killing every living thing in the radius. These devices can be miniaturized to fit into a small bomb, a tank or artillery shell, or even ammunition for hand-held grenade launchers.<sup>18</sup> The Spratt-Furse Amendment of 1994 bans the army from developing nuclear devices with a yield of less than five kilotons. But the Pentagon claims that since there is no nuclear fission involved in the hafnium device, the bill does not apply, and neither do the international treaties that restrict the development and proliferation of nuclear weapons. It is claimed that the hafnium device has more in common with conventional weapons than with nuclear ones. But that runs counter to the definition of nuclear weapons used by the U.S. government itself. That definition covers any weapons that can produce radiation or radioactivity, leading to the death or serious injury of large numbers of people.

Once implemented, this program will essentially turn nuclear weapons from a political instrument of deterrence into an instrument of actual warfare that can be used along with conventional weapons. One proof of that assertion is the U.S. programs of developing new low-yield nuclear devices. Another is the reports in the U.S. media in 2003, shortly before the Iraq war, claiming that Washington was prepared to use tactical nuclear weapons against the Iraqi WMD sites.<sup>19</sup>

In 2005 the United States reviewed its doctrine of using nuclear weapons. The U.S. President can now authorize a preemptive nuclear strike against an adversary preparing to use WMD. The revised doctrine also allows for preemptive strikes against countries or terrorist groups, for purposes such as destroying their stocks of chemical or biological weapons.<sup>20</sup>

The new U.S. nuclear posture review report published in May 2010 says that “as long as nuclear weapons exist, the United States will sustain safe, secure and effective nuclear forces. These nuclear forces will continue to play an essential role in maintaining strategic balance, deterring potential adversaries and assuring allies and partners that they can count on America's security commitments.” The report goes on to say that the U.S. “will not use or threaten to use nuclear weapons against non-nuclear weapons states that are party to the NPT and in compliance with

their nuclear nonproliferation obligations.” However, the reviewed nuclear doctrine does not rule out a nuclear strike against such pariah states as Iran or North Korea, because in the opinion of the U.S. Administration, Tehran and Pyongyang are in breach of the NPT.<sup>21</sup>

The Brookings Institution estimates that in the second half of the 20th century the United States invested some 5.5 trillion dollars into the nuclear program. The actual manufacturing of nuclear weapons accounted for only about 7 per cent of that figure (400 billion dollars). The rest was spent on delivery systems and infrastructure, including the nuclear weapons bases not just on U.S. territory but in various corners of the globe as well.<sup>22</sup>

That means that if only the nuclear warheads are destroyed, the remaining 93 per cent of the potential for nuclear war will still remain, and the nuclear warheads will simply be replaced by other weapons. Whether or not these nuclear warheads are to be replaced by conventional warheads will be decided based on economic considerations, technological capability and political expediency. Could that be the explanation for the American idea of equipping their ICBMs with conventional warheads? Is that why the U.S. political and military leadership does not want to hear about any agreed limitations on the infrastructure component of its nuclear capability?

In April 2009 (shortly before President Obama’s visit to Russia) the Federation of American Scientists, which includes 68 Nobel Prize winners, published a report entitled “From Counterforce to Minimal Deterrence.”<sup>23</sup>

The report concludes that the best strategy in the current circumstances is minimal deterrence, which can be provided by just a few hundred warheads. It also urges Russia to adopt a similar strategy. It argues that conventional weapons are quite sufficient for military action. In order to provide effective deterrence in the 21st century, the United States could choose new targets for its nuclear missiles. Since it would be inhumane to target densely populated cities, missiles should be aimed instead only at key infrastructure on the territory of the potential adversary. The list of these adversaries in the report includes not only Russia but also China, North Korea, Iran and Syria. But it is Russia that the authors chose as an example. They identify a list of 12 targets on Russian territory, which they say is sufficient for effective deterrence. The list includes three oil refineries (in Omsk, Angarsk and Kirish); six key metallurgical plants (Mignitogorsky, Nizhnetagilsky and Cherepovetsky metallurgy combines, Norilsky Nickel, Bratsky and Novokuznetsky aluminium plants), and three power plants (Berezovskaya, Sredneuralskaya and Surgutskaya). If these targets are hit, Russia will be unable to wage war because its economy will be paralyzed—but millions of Russians will inevitably die as well.

That thinking is fully in line with the ideas of one of the chief architects of American policy in the past few decades, Zbigniew Brzezinski, who wrote that “in the coming years, maintaining stability of mutual nuclear deterrence between the United States and Russia will remain one of the key tasks for the U.S. political leadership.”<sup>24</sup>

## **RUSSIA (SOVIET UNION)**

In the Soviet Union the project to master nuclear energy began somewhat later than in the United States, on February 11, 1943. That is when Laboratory 2 of the Soviet Academy of Sciences was established “to study the ways of harnessing the energy of the fission of uranium atoms and the possibility of putting the energy of uranium to military uses.” Just like their American counterparts, the Soviet scientists spent six years on the project before the first successful nuclear test, which was conducted on August 29, 1949 at the Semipalatinsk range. America’s nuclear monopoly was busted after just four years, and plans of waging nuclear war against the Soviet Union developed by the American Joint Chiefs of Staff (the Pincher plan) were no longer feasible.

In the 1960–1970, the Soviet belief was that given the bitter struggle between the two political systems and the ongoing confrontation between NATO and the Warsaw Pact, any armed conflict between the nuclear powers would inevitably lead to another world war in which most of the countries of the planet would become involved. The end result would be an exchange of massive nuclear strikes—such strikes being the main instrument of the war.<sup>25</sup> Because of that thinking, the main goal of the Soviet nuclear weapons program was to give the Soviet Union a guaranteed ability to deliver a massive nuclear strike against the adversary’s military and economic targets. That strike would be expected to cause catastrophic damage, sufficient to end the existence of the adversary’s state as an organized system and to cripple that state’s ability to provide minimally



acceptable living conditions for the population. That approach was also based on the notion that deterring the global threat would also deter the lesser regional threats, because the Soviet Union's guaranteed ability to destroy its most potent adversary (the United States) meant that the smaller and weaker adversaries would be destroyed as well. However, the Soviet Union had strong conventional forces, which were sufficient to deter and counter any regional military threats without resorting to nuclear weapons. The issue of using the strategic nuclear forces in a regional conflict was therefore largely academic. Essentially, the only function of the strategic nuclear forces was deterring the adversaries from starting a global nuclear war.

As for Russia, the Russian National Security Strategy Until 2020 reads that:

... in this day and age, the Russian Federation proceeds from the notion that it needs to have a nuclear capability that is guaranteed to inflict the required level of damage to any aggressor (a state or a coalition of states) and in any circumstances. Russia views its nuclear weapons as a deterrent against potential aggression, and an instrument of providing military security to itself and its allies, as well as maintaining international stability and peace.<sup>26</sup>

The document also reads that "the world is following the path of globalization in all spheres of international life, which is characterized by high dynamism and interdependence of events."

Russia's national interests will be adversely affected by possible recurrences of unilateral attempts to use force in international relations; by confrontation between the key actors on the world stage; by the threat of proliferation of WMD and its falling into the hands of terrorists; as well as increasingly sophisticated illicit activities in the cyber space, biological sciences and high tech areas... There is a growing risk of more countries acquiring nuclear weapons. If the United States proceeds with its plans to station elements of its global missile defense system in Europe, such a move will significantly reduce the scope for maintaining global and regional stability.

Meanwhile, the new Russian military doctrine adopted on February 5, 2010 emphasizes that:

... the Russian Federation reserves the right to utilize nuclear weapons in response to the utilization of nuclear and other types of weapons of mass destruction against it and (or) its allies, and also in the event of aggression against the Russian Federation involving the use of conventional weapons when the very existence of the state is under threat. The decision to utilize nuclear weapons is made by the Russian Federation president.

Among the key objectives the doctrine lists "maintaining strategic stability and the capability for nuclear deterrence at a sufficient level" and "compliance with international agreements on arms limitation and strategic offensive arms reduction."<sup>27</sup>

In the area of international security, Russia "shall maintain its commitment to using political, legal, economic, military and other instruments of protecting its state sovereignty and national interests." "Strategic deterrence in the interests of national military security" will remain a key policy. One of the ways of maintaining strategic stability in the world is "achieving steady progress towards a world free of nuclear weapons and ensuring equal security for all." Russia "will work to reach new comprehensive bilateral agreements on further reductions and limitations of strategic offensive weapons."

In the current conditions, only the nuclear umbrella can give Russia the opportunity calmly and successfully to complete the process of internal reforms of its state system as a whole and the armed forces in particular. In addition to that, nuclear weapons ensure that our country occupies a high place in the international ranking, confirm its right to sit on the UN Security Council and give it a major say in determining the rules of the game in the nuclear sphere. All this means that the nuclear-weapon status largely determines Russia's role and place as one of the leading nations in the international community. The nuclear arsenal maintains Russia's military strength at a level sufficient to deter any potential aggressor from launching a large-scale attack or a nuclear strike. That means that the country can be reliably protected with much less defense spending. This consideration is very important, given the current economic situation in the country. That is why nuclear deterrence remains a key element of national security.

## BRITAIN

Britain was the third country to conduct nuclear tests. The first British nuclear device was detonated on October 3, 1952. Work on the British nuclear project began in 1940. It involved scientists not only from Britain but also from the U.S., Canada and France. Some of the work was

done as part of the Manhattan project. The creation of the nuclear bomb took Britain 12 years and cost 150 million pounds.<sup>28</sup>

The United Kingdom prefers political, diplomatic, and economic instruments to achieve its national goals. But in its military doctrine, it has a clearly defined strategy of resolving international differences from the position of strength, and of maintaining the principles of nuclear deterrence. It is safe to say that Britain's view of the role of nuclear weapons and the circumstances in which they can be used are essentially no different from America's.

Britain's military-political leadership strictly abides by the key provisions of the coalition strategy, the NATO Strategic Concept adopted in April 1999. The document says that despite the strategic nuclear reductions, despite the fact that missiles are no longer targeted against any specific country, and that Russia is no longer viewed as a threat, NATO continues to rely on nuclear weapons for protection against an uncertain future. These weapons are a guarantee of the security of the members of the alliance and an instrument of deterrence against the nations seeking to acquire nuclear weapons.

The key provisions of the old strategic concept of nuclear deterrence, which form the foundation of the old coalition strategy of *flexible reaction*, remain almost unchanged in the new document.

According to the executive director of the British-American Security Information Council (BASIC), on February 23, 2006 Britain took part in the so-called subcritical tests of nuclear weapons in the Nevada desert. The tests were conducted as part of the U.S. program of nuclear arsenal management which ensures the safety and reliability of the American nuclear arsenal. The statement also mentioned the investment of about 1.7bn dollars into Britain's Aldermaston nuclear weapons establishment as part of a program to ensure the safety of the existing arsenal of Trident nuclear missiles. According to the BASIC executive director, that additional spending could point to the existence of an active program of developing new types of nuclear warheads.<sup>29</sup>

In late 2006, British Prime Minister Tony Blair said that before leaving Downing Street he would launch the process of replacing and modernizing the British nuclear arsenal. The Trident missile systems carried by Britain's four Vanguard-class nuclear submarines were to be completely renovated by 2025. The program was expected to cost 25bn pounds (46bn dollars).<sup>30</sup> The British government intends to reduce the size of its nuclear arsenal by 20 per cent. The precise number of the British warheads remaining on combat duty would fall substantially to less than 160.

However, in February 2009 British Foreign Minister David Miliband urged the leading world nations to begin nuclear disarmament talks. He expressed his hope that the United States, China, France, Britain and Russia would find a way towards the possibility of a total elimination of nuclear arsenals. Miliband also spoke for tougher policies on nuclear nonproliferation with regard to countries such as Iran, and urged the leaders of the leading nuclear powers to hold a summit on nuclear disarmament.

The new ruling Conservative-Liberal Democrat coalition led by David Cameron, which came to power in May 2010, has disclosed information about the country's nuclear arsenal. The number of active warheads (i.e., those on permanent duty) is 160. Adjustments have been made to previous plans regarding the size of the British nuclear arsenals: the ceiling has been increased, but Britain does not intend to increase the number of its nuclear warheads beyond 225.<sup>31</sup>

## FRANCE

France was the fourth country in the world to acquire nuclear weapons. It conducted its first nuclear test on February 13, 1960 in the Sahara desert using American equipment. The French commissariat for nuclear energy was set up 15 years previously, on October 1945.

The French White Paper on defense that came out in 1994 says that the French military doctrine is based on the strategy of nuclear deterrence. The country's armed forces must therefore have a strategic nuclear force component and tactical nuclear weapons. The tactical devices can be used as "the last warning" to the potential adversary that France is prepared to deliver a strategic nuclear strike. The essence of the strategy is to "prevent any potential aggressor from threatening France's vital interests by presenting it with a counter-threat." The document went on to say that France must be able "to inflict the kind of damage on the adversary that will at the



very least completely negate any potential gain it hopes to achieve by attacking.” The list of possible adversaries against which France could use nuclear weapons includes the countries which seek to acquire nuclear weapons and which “are capable of resorting to its use against France.”<sup>32</sup> France’s intention was to focus on miniaturized nuclear weapons that can be used to deliver preemptive surgical strikes against targets such as a presidential bunker or an underground nuclear facility, with a minimum of casualties among the civilians.

France began to rethink its nuclear strategy following the election of Jacques Chirac as president in 2002. Under the French doctrine of strategic nuclear deterrence, which is part of the NATO coalition nuclear strategy, the French nuclear warheads are no longer targeted only at those countries that have nuclear weapons. These days, a nuclear strike can be delivered against any country that threatens France’s national security or strategic interests, regardless of whether that country has nuclear weapons.<sup>33</sup>

Under the previous strategic nuclear deterrence plans, nuclear weapons could be used only as a measure of last resort, to deliver a retaliatory strike. The targets of French nuclear bombs could include peaceful civilians of the hostile country. Now the French seem to have reserved the right not only to deliver a retaliatory strike against the countries where the terrorist threat originates—they are also prepared to conduct pre-emptive surgical bombing raids against WMD sites and terrorist bases. In addition, the new French nuclear deterrence doctrine is also directed against China.

French President Nicolas Sarkozy has said that the world without nuclear weapons, which President Obama talked about in Prague, is a “virtual” world. Speaking at the nuclear security summit in Washington in April 2010, he said that France was not yet ready completely to disarm and to bury its nuclear hatchet:

I have announced the number of our nuclear warheads—we have cut them to a third of their original number. I believe that to go any further at this moment would be to jeopardize the security of my country. . . . We support all the measures to reduce nuclear arsenals, but we are going to keep the bare minimum of the weapons necessary to ensure the security of our country. Everyone dreams about a world free of nuclear weapons. But I will be able to renounce nuclear weapons one fine day only if I am confident that the world has become stable and secure.<sup>34</sup>

France now views its nuclear forces as an instrument of deterring a potential adversary whose nuclear capability is much greater than France’s own; it is also an instrument of deterring the potential owners of WMD who are capable of resorting to its use against France.<sup>35</sup> In its projections for the development of the military–strategic international situation for the next 10- to 15-years, the French leadership invariably believes that in the foreseeable future, national independence will be linked to nuclear capability. But France also recognizes that the situation may change radically, and in addition to nuclear deterrence, improving and developing conventional weapons is becoming increasingly important.

In October 2003 President Jacques Chirac said that “under the new doctrine, French nuclear weapons will become an active threat to France’s enemies.” That essentially means that France reserves the right to deliver a nuclear strike in retaliation for the use of WMD, and that France can now resort to delivering nuclear strikes against military–political command facilities, economic facilities and WMD production sites of the countries which pose (or could potentially pose) the threat of using WMD. In this regard France is following the American strategy which allows for preemptive use of nuclear weapons against countries that possess or are suspected of possessing WMD. This represents an unprecedented lowering of the nuclear threshold—something no other nuclear power has done so far.

Gen. Pierre Gallois, a prominent French specialist on military strategy and geopolitics,<sup>36</sup> believes that the more countries acquire nuclear weapons, the better for peace on the planet. This is why under no circumstances should Russia destroy its nuclear and strategic weapons—on the contrary, it should preserve and increase its potential in this area. That is the foundation of its national security. Meanwhile, American hegemony in Asia and the Far East can only be stopped by a powerful system of national security of the large Asian countries based on nuclear weapons.

## CHINA

The People’s Republic of China was the last country to join the official nuclear club.

China's military-political leadership has always proceeded from the notion that the country must have strong armed forces equipped with modern weapons, including nuclear weapons.<sup>37</sup> China's first nuclear program, which was launched in 1951, had a strictly peaceful nature. But in the mid-1950s it acquired a secret military component aimed at developing nuclear weapons and delivery systems for them. The decision to build the nuclear bomb was made by Mao Zedong on January 15, 1955 after the U.S. threatened to use nuclear weapons against China. The first Chinese nuclear device was detonated 13 years later, on October 16, 1964.

In line with an old national tradition, China's public statements downplayed the importance of nuclear weapons. But there was no doubt at all among the country's political and military leadership that China needed the bomb. That certainty was only increasing as time went by.

Immediately after the first nuclear test on October 16, 1964, China said it would never be the first to use nuclear weapons. The country proceeded to building mainly thermonuclear devices, land-based ballistic missiles and aviation bombs. At present, China has both strategic and non-strategic nuclear weapons.<sup>38</sup> Its strategic arsenal includes strategic missile troops, strategic aviation and nuclear missile carrying fleet. As of January 1, 2007, the country had 244 strategic delivery vehicles.

China's nuclear policy is aimed at making sure that the country is free to pursue its own development strategy. The key objectives of the Chinese nuclear strategy are as follows:

- Maintain great power status.
- Prevent any forms of political or economic pressure on China by the other nuclear powers by means of nuclear deterrence.
- Maintain superiority over China's rivals in the Asia-Pacific Region.<sup>39</sup>

The role of nuclear weapons in China's national security is mainly expressed in the concept of a *limited retaliatory nuclear strike*. In practice that translates into building a nuclear arsenal which is limited in terms of its composition but still capable of inflicting serious damage and thereby deterring a potential adversary from using nuclear weapons against China. That concept does not require nuclear parity with the United States and Russia. It is therefore safe to say that China's nuclear doctrine is based on *minimal deterrence* on the strategic level, and on *limited deterrence* on the regional level.

## INDIA

India was the sixth country in the world to acquire nuclear weapons. The first device was detonated in 1974, 26 years after the program was started.

India's strategic concepts are based on reliable *minimal nuclear deterrence* and the ability to deliver a powerful retaliatory strike should deterrence fail. In January 2003, the Indian government announced the creation of the strategic nuclear command. The decision aimed to bring some formal structure into the process of making decisions on the use of India's nuclear weapons. The country also adopted a new nuclear doctrine, which is based on the following principles:

- India intends to create and develop a capability for minimal reasonable deterrence.
- India will never be the first to use nuclear weapons—these weapons can be used only in response to a nuclear strike against Indian territory or Indian troops anywhere in the world.
- The retaliatory nuclear strike, which can be authorized only by the country's civilian government, will be massive, aiming to inflict irreparable damage.
- Indian nuclear weapons cannot be used against a non-nuclear weapon state.
- India reserves the right to retaliate using nuclear weapons if the country or its troops anywhere in the world are attacked using chemical or biological weapons.<sup>40</sup>

Speaking in Moscow to students of the Moscow State University on May 23, 2005, Indian President Abdul Kalam had this to say: "Some countries have large stockpiles of nuclear weapons—I am talking mainly about Russia and the United States. They must make progress



towards completely eliminating their nuclear weapons. Only then will the countries with small arsenals eliminate theirs.” He stressed that the Indian nuclear doctrine includes the aspiration for total disarmament and the principle of no first use.<sup>41</sup> Speaking at the 45th Munich Security Conference in February 2009, an advisor to the Indian prime minister, Mayankote Kelath Narayanan, said that India had always been opposed to nuclear weapons and that it was an advocate of nuclear disarmament, “being the only country prepared for talks on a complete elimination of nuclear arsenals.”<sup>42</sup>

But on July 26, 2009, India launched its first nuclear submarine, the Arihant (Slayer of Enemies). This is a harbinger of substantial shifts in the world balance of strategic power.<sup>43</sup> According to preliminary reports, the Arihant will be armed with 12 SLBMs with a range of 700km. At some point in the future, the range can be increased to 3,500km.

Nuclear cooperation between the United States and India is forging ahead despite the fact that India has still not signed the NPT. In addition, India and the United States have begun consultations on implementing a bilateral agreement on partnership in civilian nuclear energy, which was signed in March 2006. Under the document, India’s civilian and military nuclear programs will be separated. The civilian component, along with the 35 civilian nuclear facilities, will be put under IAEA controls. In return, the United States will give India reactor technology and nuclear fuel for its civilian programs.

On September 7, 2008 the 45 members of the Nuclear Suppliers Group lifted the ban on supplying nuclear materials and technology to India. On October 1, 2008, the U.S. Senate also approved the agreement.

## PAKISTAN

Pakistan launched its nuclear program in 1965, and conducted its first nuclear test a third of a century later, on May 28, 1998.

Pakistan does not have an official document outlining the country’s nuclear doctrine. In practice, the Pakistani government has adopted the following key principles:

- Minimally sufficient nuclear deterrence focused on India.
- The principle of massive retaliatory strike.
- First use policy.
- Equivalent targeting of nuclear weapons.
- Decentralized structure of nuclear command and control.<sup>44</sup>

Conclusions about Pakistan’s nuclear policy can be drawn from statements and interviews by Pakistani officials, including the country’s president, and the top brass. Unlike India, Pakistan has adopted a policy that allows first use. Islamabad has formulated four main conditions that can trigger the use of Pakistani nuclear weapons against India:

- A conventional or nuclear attack by India against Pakistan, and the occupation by India of most of the Pakistani territory (the territorial threshold).
- The destruction by India of most of the Pakistani army or air force (the military threshold).
- The infliction by India of a significant economic damage on Pakistan or an economic blockade imposed by India on Pakistan (economic strangling).
- Political destabilization or a serious act of sabotage in Pakistan perpetrated by India (internal destabilization).<sup>45</sup>

According to the official line of the Pakistani government, the main function of the nuclear arsenal is to prevent India from dominating Pakistan in any way. The second objective of the Pakistani nuclear policy is to contain India’s superiority in the event of a conventional Indian attack.

Former Pakistani President Pervez Musharraf said in December 2002 that a war with India had been averted thanks to his constant warnings that if the Indian armed forces crossed the

internationally recognized border in Kashmir or Pakistani Punjab, Pakistan would not limit itself to conventional weapons. It was only with great difficulty that a new Indian–Pakistani war had been averted in 2002. But immediately after bilateral tensions subsided in 2003, the Pakistani military planners seemed to have interpreted the events as another proof of their ability to manage the risks of strategic deterrence. The end result was the formation of a bilateral model of regional deterrence between India and Pakistan, which has essentially shielded these two countries from direct military conflict. This is why Pakistan is likely to continue its policy of using a flexible and vague nuclear doctrine.

In the bottom line, all the official nuclear powers support the idea of a certain numerical reduction of their nuclear arsenals—but they have no intention of completely renouncing nuclear weapons in the foreseeable future.

## A WORLD FREE OF NUCLEAR WEAPONS: REALITY OR UTOPIA?

The first attempts to exclude nuclear weapons from the list of instruments of armed warfare were made almost immediately after those weapons were invented. In January 1946, the UN set up the Atomic Energy Commission, whose remit included developing proposals on excluding atomic weapons and all other weapons of mass destruction from national arsenals.<sup>46</sup> On March 19, 1946, during the second sitting of the new commission, the Soviet government introduced a draft convention of banning nuclear weapons. The proposal included a “ban on manufacturing and using nuclear weapons” and a commitment to “destroy all stocks of finished and unfinished nuclear weapons within three months.”

However, these efforts did not bring any results. The UN Atomic Energy Commission was dissolved after the Soviet Union conducted its first nuclear detonation on August 29, 1949. The commission was replaced in 1952 with the UN Disarmament Commission, a consultative body. During one of the meetings the Soviet Union proposed a draft international convention on banning nuclear, hydrogen and other weapons of mass destruction. Britain and France produced a joint memorandum that included a complete ban on nuclear weapons and their decommissioning from the arsenals. In 1955 the Soviet Union offered a revised disarmament program which included the signing of an international convention on arms reductions and a ban on nuclear weapons. The Soviet disarmament initiative culminated on September 18, 1959 at the 16th session of the UN General Assembly, when the Soviet delegation submitted proposals on universal and total disarmament of all the countries on the planet. The plan was to be implemented over a period of four years in three phases:

- ❑ Substantial reductions of conventional armed forces and arsenals under international controls.
- ❑ Liquidation of the remaining armed forces and military bases on foreign territory.
- ❑ Elimination of all types of nuclear and missile weapons, as the last phase of universal and total disarmament.<sup>47</sup>

The formal basis for the ongoing debate about a world free of nuclear weapons is Article VI of the NPT (which was opened for signing in 1968 and came into force on March 5, 1970). The article reads:

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.

But because it never came to universal and total disarmament and the Soviet Union rapidly caught up with the United States in terms of its nuclear capability, almost four decades on, only two countries, the United States and Russia (Soviet Union) have actually done anything for the cause of nuclear disarmament and strategic offensive arms reductions. A series of bilateral agreements has given the world the idea that only these two countries are *responsible* for nuclear disarmament. The process began on May 26, 1972, with the signing of the first Soviet–American Interim Agreement on the Limitation of Strategic Offensive Arms (the SALT-I Treaty). The treaty was signed by Leonid Brezhnev and Richard Nixon in Moscow simultaneously with the Anti-Ballistic Missile Treaty. Then came the Soviet–American SALT-II Treaty of 1978, the START-I Treaty of 1991 and the Moscow Treaty on Strategic Offensive Reductions (SORT) signed in 2002.



Over that period, the Russian and American strategic nuclear arsenals had shrunk to just over a fifth of their original size.

Russia and the United States have ended the nuclear arms race. They are in constant negotiations on nuclear disarmament. They have developed mutual control procedures. There has long been a public perception that breakthroughs on this issue determine not only the prospects for U.S.–Russian relations in general, but also the prospects for the entire process of nuclear disarmament.

Meanwhile, the other official nuclear-weapon states which have signed the NPT have not shown any inclination for binding agreements that would limit their own nuclear arsenals. China, for example, said in 1995 that “those countries whose nuclear and conventional arsenals surpass everyone else’s. . . . bear special responsibility for arms controls and disarmament.” However, the idea of a world free of nuclear weapons, which was first voiced by the greatest intellectuals and political leaders in the middle of the 20th century, is gradually gaining support in the new century.

Back in 1983, Andrey Sakharov wrote in an open letter to Sidney Drell:

A nuclear war could result from a conventional war, while a conventional war is, as is well known, a result of politics. . . . It is impossible to win a nuclear war. What is necessary is to strive, systematically though carefully, for complete nuclear disarmament based on strategic parity of conventional weapons. As long as there are nuclear weapons in the world, there must be a strategic parity of nuclear forces to that neither side will venture to embark on a limited or regional nuclear war. Genuine security is possible only when based on a stabilization of international relations, a repudiation of expansionist policies, the strengthening of international trust, openness and pluralization in the socialist societies, the observance of human rights throughout the world, the rapprochement—convergence—of the socialist and capitalist systems, and worldwide coordinated efforts to solve global problems.<sup>48</sup>

Sakharov’s analysis still holds true in this day and age, except for the bit about the socialist societies, which no longer exist. The conclusion that can be drawn from this analysis is that complete nuclear disarmament is only possible if expansionist policies are repudiated and a strategic balance of conventional forces is achieved. Needless to say, these two conditions have not been fulfilled. Meanwhile, the idea of universal and total disarmament is no longer on the agenda of the disarmament and non-proliferation debate.

Almost all the modern Western proposals on complete nuclear disarmament are based on the ideas voiced by Ronald Reagan in the 1980s:

- An understanding that national security must not depend on nuclear weapons.
- The realization of the need to move from arms limitation to nuclear disarmament.
- Missile defense as the key to eliminating nuclear weapons.
- Repudiation of the 1970s doctrine of a protracted nuclear war.<sup>49</sup>

The ideas themselves are not bad. Let us assume for a minute that they have actually been implemented. But the actual ways of implementing them, and therefore the repercussions of such implementation, can be very different. They depend on the objectives pursued by the participants in the disarmament process. Also, implementing these ideas would not be possible without answering some questions first. What are the international mechanisms that national security should rely on? At present, these mechanisms are either not working at all, or working very selectively. And in the meanwhile, military strength still remains the most reliable instrument.

What are the realistic capabilities of missile defense? It can work not just against nuclear delivery systems, but against conventional systems as well. It is also a fairly effective instrument against space launchers, conferring clear commercial advantages to the owner of such a system. And in this day and age, whoever controls space will control the world.

What will be the consequence of repudiating the concept of a protracted nuclear war? Will it mean no wars at all? A limited nuclear war? Or lightning-fast disarming nuclear strikes, supported by high-precision conventional weapons and conducted under the umbrella of a missile defense system, with a unified command and control system augmented by space satellites?

The suggestion that such consequences of nuclear disarmament would be quite realistic is borne out by the present international situation, with hardly a day without a war or an armed conflict. The main threat to world peace is now being posed by conventional weapons. It is using those

weapons that wars are being waged in this day and age. It is the conventional arms race, the rapid conventional weapons buildup that is changing the regional and global balance of power.

So what is the actual objective of the proposals on complete nuclear disarmament? Is it a genuine process of renouncing nuclear weapons as a matter of principle? Or is it just some kind of attempt to trigger a *nuclear disarmament race* instead of the former *nuclear arms race*? And if so, what could be the objective and the results of such a race? Who would benefit?

The countries that are supposed to disarm have developed not only nuclear weapons but also the complete nuclear fuel cycle. And apart from the moral considerations, there are no real incentives to disarm. Meanwhile, the countries that have neither nuclear weapons nor any nuclear materials manufacturing capability are supposed to renounce any plans to develop them. Attempts are being made—some of them more successful than others—to incentivize that renunciation financially. But for all that, there have been only two examples of countries clearly renouncing nuclear weapons, and doing so without any obvious financial rewards from abroad. The first is Sweden (in 1968), the other South Africa (1991). Both countries made the decision strictly for their own domestic reasons.

The idea of *nuclear zero* was born more than half a century ago, almost at the same time as nuclear weapons were invented. But that idea only started to be taken seriously with the arrival of effective high-precision conventional weapons, which are capable of achieving the objectives pursued during regional conflicts. Of course, pictures of a CNN report showing a smart conventional cruise missile flying through the window of a dictator's bunker look far more humane than photos of Hiroshima or Nagasaki after the nuclear bombing. But the end result of using a *conventional scalpel* rather than the *nuclear hammer* is essentially the same. The goals and the objectives remain the same—only the ways of achieving them are different.

The country that is now the main proponent of moving more speedily towards *nuclear zero* has already acquired these new instruments of achieving military superiority—but it has largely retained its old goals and objectives. That makes one wonder about the true motives and the possible repercussions of the proposed nuclear disarmament. From that point of view, the reason for all the latest pronouncements regarding complete nuclear disarmament is quite clear. As U.S. Defense Secretary Robert Gates said in his article in the *Foreign Affairs* magazine in early 2009, the essence of the American strategy is “maintaining the United States’ existing conventional and strategic technological edge against other military forces.”<sup>50</sup>

The world is about to enter a new era in which the only military superpower will enjoy guaranteed impunity, i.e., the ability to deliver a disarming strike (with acceptable environmental consequences) against any potential adversary, including Russia. So far, the “guaranteed” part is not quite there yet—but the chances for a success of any hypothetical retaliatory strike are being methodically and deliberately minimized, using a variety of instruments, including international legal mechanisms. That is why Barack Obama’s initiative on nuclear disarmament essentially enables the United States to take its global military hegemony to a new level.<sup>51</sup>

In order to understand whether a transition to universal and total nuclear disarmament is actually possible, we need to understand where exactly the world is heading, what paths it will take, and what instruments will be used to achieve security.

## SCENARIOS FOR THE 21ST CENTURY

The dynamics of the world processes are determined by the current situation; they are intricately linked to how the political decisionmakers perceive military strength, and how they see the role and place of nuclear weapons in achieving the goals of national development. This perception depends on a multitude of factors, including the geopolitical situation, the balance of military power between the states, economic, scientific and technical capability, and last but not least, the personal qualities of the leaders themselves.

In this day and age, following the demise of the bi-polar world, and then of the unipolar world, every pawn on the geopolitical chessboard wants to become a queen. That is particularly true of those who have already known the pleasures of being part of the great game—especially if it is the great nuclear game we are talking about. Even mere participation in it immediately makes the player one of the chosen few. An overnight transition from being a pariah to becoming an equal partner in nuclear dialogue flatters every political leader and raises the prestige of every nation in



its own eyes and in the eyes of the international community. That transition can also bring tangible economic dividends.

For a long time, futuristic forecasts were the domain of science fiction writers and astrologists. Some of these forecasts would later turn out to be very accurate—but one cannot make them the basis for strategic planning. Directly extrapolating the existing trends to predict long-term outcomes inevitably leads to serious errors. History holds a lot of examples of the negative consequences of such scholastic forecasts.

Every modern country, and the international community as a whole, is a complex system that is described by an infinite number of parameters and with an infinite number of degrees of freedom. But the popular and rapidly developing science called synergetics has proved beyond any doubt that there is only a finite number of *order parameters* that define the behavior of such objects in the long time frame. A distinction must also be made between the *quick* and *slow* variables. And it is almost always possible to make a *weak prognosis*—i.e., give the answer to the question of what is not likely to happen in any given system.<sup>52</sup>

Any prediction of the future has deal with a variety of problems. Without solving those problems, a scientifically sound forecast is impossible. One of these problems is the so-called *planner's paradox*. The essence of this paradox is that a decision that offers the best outcome in the five to seven years time frame may not be the best in the 10–20 years time frame. Indeed, it may even prove catastrophic in the 40–60 years time frame. The depth and contents of any forecast is determined by its time horizon: the short term (up to one year); the medium-term (up to five years); the long-term (up to 10 years); and the very long-term (decades). Military–political forecasts are usually made for the 10–15 years time frame, over which period the specific national strategies of the state and its organizational structures need to be implemented. The reason for that is that 10–15 years is the longest period for which it is still possible to make a fairly accurate estimate of the resources needed to achieve the strategic goal, and for which it is possible to extrapolate the existing and nascent trends. The traditional electoral cycles of the developed countries also fit within that time frame. That makes it possible to make a fairly accurate assessment of the political and ideological views and preferences of the strategic decisionmakers. However, since decisions in the nuclear sphere are by their nature both historic and historical, the time horizon of planning here is extremely important; it should be at least half a century.

It must also be taken into account that decisions made over very short periods—days, weeks or months—can sometimes have major repercussions for the lives of individual people and entire nations. Such decisions are sometimes made when time is short, when there is not enough information, and by people who are stressed out, and sometimes plain incompetent. History, meanwhile, is a continuous irreversible process, and many decisions cannot be postponed. Another key problem is that it is impossible to conduct real life experiments to test the decisions being made before they are actually made. There are no suitable mathematical models, and there is not enough information to program computers for such an experiment.

So however paradoxical it may sound, one cannot rely too much on formal methods of forecasting in the nuclear sphere. The subjective component, the personal interests and preferences tend to play too great a role in such forecasts. However, forecasts are necessary to formulate national strategies, as well as political and military doctrines. The only choice left to us, therefore, is to rely on verbal forecasts made by political analysts—even though these analysts are often influenced by considerations of political expediency, and sometimes indulge in wishful thinking.

So what are the forecasts being made today about the rest of the 21st century? What are the existing models of the future? What is the role and place of Russia in that future? It may sound strange, but for all the talk about the need to achieve total nuclear disarmament, and about the search for new effective instruments of international security, almost all the forecasts predict new wars and conflicts, including nuclear conflicts.

The Project for the New American Century, a neoconservative movement created in 1997, argues that U.S. leadership on the international arena will be for the good of America itself as well as the rest of the world. It goes on to say that such leadership requires military might, diplomatic insightfulness and moral obligations. And when diplomacy and sanctions can no longer cope with the situation, the United States must be prepared for military action. Now that the Cold War is over, the United States has a direct obligation to increase military spending and develop military technology. The project calls for the creation of a global U.S. army which would have the capability to fight and win decisively on several fronts simultaneously, as well as to carry out the policing

functions necessary to provide security in the key regions.<sup>53</sup> It is well known how these ideas were put into practice by the neoconservatives who held senior posts in the George W. Bush administration, including the American envoy to the UN, John Bolton, Vice President Dick Cheney, the U.S. ambassador to Iraq, Zalmay Khalilzad, Defense Minister Donald Rumsfeld, World Bank president and the author of the Bush doctrine, Paul Wolfowitz, and others.

In December 2003 the web site of the U.S. National Intelligence Council published the findings of the Global Trends 2020 study.<sup>54</sup> The main finding was that American global dominance will continue in the near time frame, although China's influence may increase, while the strategic importance of Europe in global security issues will diminish. As before, the United States and their allies will take key decisions on using military force unilaterally, with the international community having little say in the process. And although by 2020 the return to a military and ideological confrontation between Russia and the West will have become impossible, Russia's relations with the outside world will be uncertain and contradictory. Russia will still be the principal great power of Eurasia. Some kind of a federation or possibly and outright union with Belarus remains a possibility. The main problem that the Russian leadership will continue to struggle with is reconciling the country's regional-size economy with its global-size superpower ambitions. Politically and economically, Russia will not see any radical changes by 2020, and its economy will remain middle-ranking by the global standards. Its strategic nuclear forces will remain the core element of Russia's military planning. It is possible that the Russian nuclear arsenal storage sites will be guarded by joint Russian and U.S. efforts by that time, which will not be compatible with Russia's superpower ambitions. Meanwhile, the country's foreign policy will be increasingly aligned with America's and Europe's.

Another study entitled *Strategic Paradigms for 2025: U.S. Security Planning for a New Era*,<sup>55</sup> which was conducted by the Washington-based Institute for Foreign Policy Analysis, concludes that Russia's future will have a direct impact on the future of the EU and the NATO alliance. But the future of Russia itself is much less predictable than the future of any other country or region. The Institute for Foreign Policy Analysis (IFPA) forecast contains three possible scenarios for Russia:

- ❑ An authoritarian Russia will become increasingly active and confrontational near its own borders, in Europe and in Central Asia. Russia's economy will remain inefficient, and foreign investment very limited. Real power in the country will belong to the security agencies. Nuclear weapons will be the basis of the Russian security strategy.
- ❑ Russia will become a proper democracy, a market economy, and an active and valuable partner for the Western countries. The country will play an important role in the process of globalization; it will cooperate with NATO and take part in joint peacekeeping operations. Its national security policy will move away from the concept of external threats.
- ❑ The intermediate scenario: Russia will remain a very difficult and inconsistent partner in international relations. Russia will reconcile itself to the first wave of NATO enlargement, but will vehemently oppose any further waves. Russia's national security concept will rely on the nuclear arsenal only to a small degree. Russia will play an active role in opposing Western policies, but its abilities in such a stand-off will be fairly limited.

In the spring of 2009, NATO presented the Multiple Futures Project—Navigating Towards 2030, a comprehensive analysis of future global political scenarios.<sup>56</sup> In this report, NATO positions itself as the world's only military alliance that can shoulder the responsibility for containing conflicts on the planet. It is said that NATO's priority is containing a nuclear arms race. But it is also claimed that there is a likelihood of a nuclear attack against large European cities and large European transit nodes. The report says that a single nuclear device will not be enough to inflict significant damage on Europe. Any European country that comes under a nuclear attack will deliver a retaliatory strike and invoke Article V of the Washington Treaty, because it will not have sufficient military strength to retaliate on its own. The strategy says that the alliance must therefore have a sufficient conventional and nuclear capability to respond to unexpected attacks.

Spanish political scientist and economist Josep Colomer<sup>57</sup> believes that because the Westphalian model of a nation-state is not universal, international politics of the future will be based on two types of potentially viable territorial and political communities: large empires (America, China, Europe, Russia and Japan) and the small nations (hundreds of them) orbiting these empires. At the same time, V.T. Tretyakov<sup>58</sup> believes that "the survival and continued prosperity of the Euro-Atlantic (Christian) civilization is only possible if members of that civilization end constant



competition and confrontation (even military conflicts) between each other and become sincere and genuine allies.” That alliance should lead to the creation of the Pan-European union (or the union of the EU and the Russian union); the United States should end their presence in Europe as a political and military force, or sign a tripartite military and political defense treaty with the Pan-European union, “based on absolute internal political sovereignty of each of the participants.” History has given us 15–20 years at the most to create such a union.

The preservation of the existing system of international relations, dominated by state actors, is not the only possible scenario for the new century.

According to the researcher Alex Battler,<sup>59</sup> the existing multipolar structure of international relations, with a multitude of centers of power, is the most unstable system of them all. It is a world of chaos, with everyone fighting everyone else. It leads to more frequent regional conflicts, including military conflicts. This is the worst possible structure of the international system for international stability, Battler says. He notes that a multipolar world will quickly transform into a bipolar world, with two centers of power (presumably the United States and China), and then into a unipolar world, with a single global community. States will not entirely exit the world stage as international actors, but they will lose their former significance by the end of the 21st century. A world government will be formed.

This is not just one of the many possible future scenarios—witness the results of the first U.S.–Chinese summit in the framework of economic and strategic dialogue between the two countries. At the opening of the forum, U.S. President Barak Obama declared that American–Chinese relations will have a “defining role for the 21st century,” and offered Beijing cooperation in the global context and coordination of policies in areas including the economy, security, foreign policy and energy. “Relations between the United States and China will shape the 21st century. This is a responsibility that we will have to shoulder together,” Obama said. He also spoke about America’s willingness to step up cooperation between the armed forces of the two countries, to begin information exchange and to coordinate foreign policy in various parts of the globe, including Africa. In the process of that cooperation, the United States will not try to impose its own values on China.<sup>60</sup>

Interestingly, neither the U.S. nor China, both of which have strategic nuclear arsenals, said anything about renouncing the policy of mutual deterrence in bilateral relations, or signed any agreements to that effect. It has turned out that nuclear deterrence is no obstacle to strategic partnership or economic cooperation, provided that both parties are interested in such partnership and cooperation. China has more than two trillion dollars worth of international reserves—and 801.5bn of them is held in U.S. government bonds, plus another 700bn dollars in other U.S. bonds. As they say, “if you owe the bank 100 dollars, it is your own problem. If you owe the bank 100 million dollars, it is the bank’s problem.”

Meanwhile, the worst possible scenario for the military–political situation in the coming decades is the continuation and possible strengthening of the current negative trends towards using force as an instrument of resolving differences and conflicts. One such scenario was outlined in the summer of 2009 in a popular book by George Friedman,<sup>61</sup> a prominent U.S. political commentator and the founder of Stratfor, a global open source intelligence company. The author offers his forecast for the next 100 years. He does not portray it as a certainty, but neither should it be dismissed as a flight of fancy. The future painted by Friedman is that of American hegemony in the coming century based on military superiority, with the United States remaining the only world superpower and directly controlling the Atlantic and the Pacific.

According to Friedman, by 2020 Russia will have turned into a large regional player. Its main objective will be to restore its power and influence in Eastern Europe and the post-Soviet space. That can lead to a confrontation with Germany, so Russia will expend substantial resources on strengthening its military capability. It will also try to restore the system of internal buffers (similar to the one that existed in the former Soviet Union in the shape of the Soviet republics). It will then try to increase the number of the buffer states and advance beyond the borders of the former Soviet Union. Moscow will also work hard to prevent the formation of coalitions near its borders. It will set itself up against the United States in a global confrontation in various parts of the world. That confrontation will reach its peak by 2020. But Russia will soon overstretch itself, and at the beginning of the third decade of the 21st century it will fall apart, just like the Russian Empire and the Soviet Union did.

After Russia's collapse, Turkey, the new leader of the Muslim world and the center of a coalition of Muslim countries, will turn into an extremely influential regional power. It will be in a position to conduct expansionist policies not only in the Caucasus, but also on the Arabian peninsula, and then in the Balkans. It will face competition from Egypt and Iran. The Islamic world, unable to unify on its own, will acquiesce in Turkey's dominance. But an even more loyal ally of America will be a coalition of Eastern European states led by Poland. The main objective of such an alliance will be eastward expansion. It is quite possible that St Petersburg will be occupied by the Estonians, Kiev by the Hungarians and Minsk by the Poles. By the early 2040s, tensions will start to grow between the United States and the union of Turkey and Japan. China and Japan will be working to undermine American dominance of the Asia Pacific Region. The Eastern European countries will continue their struggle for spheres of influence. The EU will be facing difficulties after giving membership to a large number of countries with different levels of economic development and due to the growing numbers of various ethnic and religious communities. Thanks to Mexico's efforts, the borders between the North American countries will become increasingly irrelevant. All these problem areas will undoubtedly lead to conflicts.

A world war will break out in the middle of the 21st century after a conflict between the Poles and the Turks over the Balkans. The American strategy will be to prevent the development of regional leaders in Eurasia and their unification into a single dominant state. Japan will be striving to bolster its dominance of the Northwestern Pacific; Turkey will be working hard to stabilize its own region. The war will be unprecedented in terms of its instruments. The factor that will determine victory in 21st century warfare is precision. Emphasis will be made on unmanned supersonic combat aircraft, supported by space-based missile weapons. The war will be protracted, but the United States will be able to ramp up weapons production and win the war by the middle of 2052. The positions of the United States as the greatest power on the planet will be reinforced even further. The losses sustained during the war will be relatively modest, in the tens of thousands. Another beneficiary will be China, which will strengthen its positions in Central Asia.

After the war, the United States will enter a golden decade and continue militarizing space. Poland will begin to strengthen its positions in Europe and incorporate Belarus. Its other allies will form a confederation ruled from Warsaw. But in the 2080s, Mexico's development will gradually weaken the United States. As a result, parts of the United States will be completely populated by Mexicans. The growth of the Mexican economy will spur Mexican nationalism, leading to even greater tensions with the United States. The two countries will become rivals for leadership in North America. The outcome of that rivalry will be decided in the 22nd century.

All these scenarios leave little hope that humankind will enjoy peace and quiet in the coming decades. Some forecasters predict not only regional conflicts (some of them involving the use of nuclear weapons) but even a new world war. That means that for many decades to come, military-political leadership of the great powers, as well as the leaders of the most ambitious states, will still require military strength—and therefore they will require nuclear weapons as the ultimate symbol of that strength.

## ROADMAP FOR NUCLEAR DISARMAMENT

This vision of the future only reinforces the confidence that in the new century, nuclear weapons are unlikely to disappear from the arsenal of political and military instruments. For a very long time to come, they will be a factor in the relations between the nuclear powers and the rest of the world. And although the international community is waging an increasingly energetic campaign for nuclear nonproliferation, for many countries acquiring nuclear weapons will be a vitally important condition of their own survival.

Nuclear weapons have a crucial role to play not only during war, but in peace time as well. They are a perfect example of the attempts to monopolize military strength. The very process of their creation was top secret in every country. That was an attempt to monopolize nuclear knowledge. But as we all know, the attempt failed. After the United States tested their first nuclear weapons and then used them against Japan, they got the illusion that they can have a monopoly on this powerful instrument. (By the way, the project to build a global missile defense system is essentially a continuation of that illusion.) Then after that attempt failed, efforts were made to monopolize power over nuclear weapons, with the end result being the NPT—a collective monopoly of five countries on nuclear weapons. But that attempt has failed as well. Nuclear weapons are spreading around the planet, first as nuclear know-how, then in the form of nuclear



materials, and then the existing situation simply becomes legitimized. Monopolizing knowledge or power is impossible in a globalized world. And if it is not possible in the economy and geopolitics, who will ever accept it in the nuclear sphere? In the language of the economists, the invention of nuclear weapons suddenly and radically changed the competitive environment, giving the owners of those weapons a monopoly on absolute military might. And that is exactly the situation that has forced America's geopolitical competitors to do everything they can to bust that monopoly.

According to a number of estimates, there are now 30–40 countries on the planet that have the technological and manufacturing capability to build nuclear weapons. These countries either already have nuclear weapons or are working on peaceful and military nuclear programs. According to official IAEA reports, 70 nations are engaged in “significant nuclear activities,” i.e., have nuclear energy and/or research reactors and are therefore capable in theory of starting a military nuclear program. Among these countries are the five official nuclear-weapon states (the U.S., Russia, Britain, France, and China); the two unrecognized nuclear powers that have conducted successful nuclear tests (India and Pakistan); the nations that are thought to have acquired nuclear weapons (Israel and North Korea); and a number of countries which had either had nuclear weapons in the past and can build a nuclear device within a short time frame, or which have made attempts in the past to acquire those weapons this way or another (South Africa, Brazil, Argentina, Sweden, Switzerland, Italy, Australia, and others).

In the 20th century a nuclear arsenal was the privilege of strong, militarily and technologically advanced countries. In the 21st century, the opposite trend is developing. These weapons hold the attraction for relatively weak countries which hope to compensate for their military and technological backwardness by acquiring nuclear capability. And because the numbers and the quality of the nuclear devices held by such nations is not sufficient for guaranteed mutual destruction in a military conflict between each other, they face the following dilemma: they can either use their nuclear weapons first, or they are in danger of lose them.<sup>62</sup>

It is therefore entirely natural that while the role of nuclear weapons and nuclear deterrence in the relations between the great powers is declining, not a single one of the official nuclear-weapon states is going to renounce their nuclear arsenals in such circumstances. That is explained not just by their desire to maintain their high place in the world ranking, but also by their basic instinct of national self-preservation. While military strength exists, its main purpose is to deter potential adversaries. The 2001 report *Nuclear Weapons in the Modern World and Russia's Security*, published by a working group of the Council for Foreign and Defense Policy, says that nuclear-weapon states will inevitably have to rely on mutual deterrence in their strategic relations. Deterrence may become especially important at times of crisis; it may recede when tensions subside and relations improve—but it will always be a necessity, and its effects will always be felt. The basic concept of deterrence allows for a variety of models in relations between equal and unequal parties. Deterrence is also seen as a guarantee that the other side is not going to renounce the arms agreements and resume the arms race, building up its offensive and defensive nuclear weapons capability. That aspect of deterrence is becoming especially important following the end of the Cold War, and it will retain that importance for the foreseeable future.

For the nuclear-weapon states to be able to abandon mutual strategic deterrence, a number of conditions have to be met first:

- These states must become military and political allies.
- They must be out of reach of each other's nuclear delivery vehicles.
- Their nuclear weapons must clearly be targeted elsewhere.
- One of these states must have massive nuclear superiority over another, and the ability to deliver a disarming strike.

Finally, nuclear deterrence in its traditional sense can be abandoned if and when effective missile-defense systems or other means of defending against nuclear delivery vehicles are in place. Since none of the above conditions has been met in the strategic relations between Russia and the United States, they will have to continue to rely on mutual nuclear deterrence, the report concludes.<sup>63</sup>

At the same time, analysis of the strategy documents of the leading nuclear powers, the statements made by their officials and specialists, and a number of specific steps on strategic

armaments lead to the conclusion that attitudes to nuclear weapons and nuclear deterrence as an instrument of strategic stability and national security have undergone a certain transformation. The key problem in developing workable approaches to determining the possible directions of evolution of the nuclear factor in the relations between the nuclear powers is defining the role of nuclear deterrence in a multipolar world. Events of the past few years have demonstrated that in the new geopolitical situation, nuclear weapons can no longer be relied upon to prevent conflicts, let alone serve as an instrument against the new security challenges and threats in a multipolar world. Most of these threats are below the threshold of justification for nuclear war. At the same time, the system of crisis stability based on nuclear weapons creates a situation which is comfortable for all the players in the global nuclear balance. In this situation, none of the sides is interested in the balance being suddenly disturbed or any other actions being taken that could lead to an escalation of armed confrontation using conventional forces.<sup>64</sup>

The obvious conclusion is that a whole set of conditions need to be met in order to make a world free of nuclear weapons even a theoretical possibility. The existing rules of the game were created for a very different world, a world dominated by two superpowers. These rules were created by people whose goal was to secure their own nuclear monopoly rather than achieve a global nuclear zero.

A complete elimination of nuclear weapons is not on the realistic agenda of the current or even future political leaders. It is therefore necessary to develop new rules of the game and new conditions to achieve security and stability in the nuclear age. That requires several specific steps to be made.

*First*, we need to determine which international institutions can be entrusted with the mission of nuclear disarmament. In order to enlarge the existing bilateral format of negotiations, an international body will be required to coordinate the interaction between the participating states. For all the shortfalls of the United Nations, only this body is capable of undertaking such a complex mission.

Russia and the United States have already done their bit for nuclear disarmament and even drawn a road map for that process. Continued success of nuclear disarmament depends on the question of when the other nuclear powers are going to join that process, and which roadmap they are going to use. That roadmap must become the first page of a detailed atlas for the new outlines of a world free of nuclear weapons. One of the stumbling blocks on the way towards creating an international institution for nuclear disarmament is the complexity of achieving a consensus. That consensus is needed because without it, we will remain exactly where we are today.

*Second*, there needs to be an official list of the countries that are the de facto members of the current nuclear club, with an amnesty for all the newly arrived nuclear-weapon states. In other words, all the existing nuclear weapons need to be legalized.

That step will allow all the existing nuclear weapons to be brought out into the open. It will also satisfy the ambitions of its owners to some extent by granting them nuclear status. In the process, these countries will be put into a strict legal framework and under stringent controls, because nuclear status also means very specific responsibilities.

*Third*, once that legalization is achieved, admittance to the nuclear club must be closed once and for all, perhaps after a certain cut-off date. A new and effective system of tough sanctions will then need to be implemented for those trying to acquire nuclear weapons capability after that cut-off.

Such a step would probably require certain changes to be made to the NPT, which may even have to be replaced with a new treaty, the better to reflect the current situation. It would be a chance to end once and for all the recurrent bouts of bloc mentality, which was so obvious in the disarmament agreements of the 1960s and 1970s. The need for this step is made all the more obvious by the clear lack of progress during the last few NPT review conferences.

*Fourth*, the new levels of nuclear arsenals need to be agreed on a multilateral basis, and thereby legalized. New transparency measures and verification mechanisms will have to be found. The nations will need to coordinate their nuclear strategies and programs.

Such a step will allow all the nuclear-weapon states to be involved in the dialogue, meaning that the nuclear threat will at the very least not become worse. Coordinating strategies will also increase the predictability of the policies of the nuclear-weapon states, reducing the risk of a spontaneous nuclear conflict to a minimum.



*Fifth*, a new international system of security needs to be built, and the nonproliferation regime should be reformatted.

That will require a new understanding of not only the current system of carrots and sticks, but of the future one as well. That future system will need to remain effective for many decades to come. What needs to be taken into account, however, is that the appetites of the nuclear players keep growing, and the carrots are becoming increasingly more expensive.

*Sixth*, there needs to be a new system of guarantees and conditions for the development of peaceful nuclear programs by any country on the planet, without dividing the states into the good ones and the bad ones, without axes or evil or pariah states.

The Russian proposal on setting up an international nuclear fuel reserve is part of the solution to that problem.

*Seventh*, legitimate nuclear-weapon states must be allowed to conduct nuclear tests every 10–15 years or so to ascertain the reliability of their nuclear arsenals and preserve the expertise of the nuclear specialists.<sup>65</sup> Such tests must comply with all the radiation and environmental safety requirements. They may be conducted under the supervision of the IAEA or some other international organization.

That latter proposal may seem the most radical and the least acceptable of the seven. But without implementing it, it will be impossible to understand the true state of affairs in the nuclear sphere and properly control the nuclear nonproliferation regime. Only nuclear tests will enable the nuclear-weapon states to manufacture, store, maintain and dismantle nuclear warheads safely and securely.

It will take at least 15–20 years to implement all of these steps. It is important that all of them are implemented to the fullest extent. Omitting even one of them will lead to failure, because the reasons for the current situation will not have been completely eliminated.

The success of these steps will be instrumental for achieving a *sufficient* precondition for nuclear disarmament, a voluntary renunciation of nuclear weapons and of the use of force in international relations by all countries. But, as the great Russian poet N.A. Nekrasov once said, “neither you nor I will live to see those halcyon days”. 

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