International Security
Nonproliferation
Arms Control

DIGEST OF THE RUSSIAN JOURNAL

YADERNY KONTROL

(NUCLEAR CONTROL)

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Editorial

MILITARY REFORM: MANY PLANS, NO GOALS

During the year 2000, military reform was the center of attention for the Russian political and military leadership. The Defense Ministry developed several plans for further reform of the Armed Forces. The Defense Minister and Chief of the General Staff came into open confrontation regarding the future of the Strategic Missile Forces.

The dominating view in the 1990s was that it would be cheaper to maintain the Russian Army in its present state rather than to conduct real reform. In the recent years, political attempts to carry out radical military reform have failed due to a lack of funds. The military have been awaiting the money for military reforms and have been merely reducing the numerical strength of the Armed Forces.

In fact, military reform has become an economic problem for the state. Different generations of politicians and senior economic managers in the government have failed to agree upon the essence of military reform: whether to invest additional financial means in the Russian Army or to economize.

After Vladimir Putin came into power and demonstrated his patriotic and strong-state approach, experts began to believe that the Armed Forces would become a priority for financing. However, the presidential economic strategy suggested that military expenditure be frozen for the next five-seven years. It became obvious that the Russian Army would not obtain additional funding. The liberal economic team preferred to economize the Army. To be frank, military, security, and defense experts were to blame for that as well, since they failed to set forth any useful and economically justifiable model for military reform when Gref's team was preparing the new Russian economic program. At the same time, the President demanded military reforms by telling generals, 'We do not need such an Army'. This theme resulted in a fierce struggle between the MOD and other paramilitary structures for influence over the redistribution of the defense budget.

Under current circumstances, key arguments in favor of reform plans are based on the analysis of military security threats to Russia. We will not assess how impartial and well-grounded such analysis is, but would like to concentrate on more methodological issues. Is it reasonable, in general, to reconstruct one's military on the basis of threat analysis? Firstly, in this dynamic world such challenges can change. Secondly, such an approach implies that Russia should explicitly identify its allies and adversaries. For a number of political and diplomatic reasons, Moscow cannot afford to state them in public documents containing guidelines for reform, especially as far as potential enemies are concerned. The RF Military Doctrine does not define potential enemies. A way out would be to determine the types of conflicts which Russia must be ready to face and overcome.

The shortcomings of the aforementioned *threat*-based approach became clear when President Putin declared (after several months of debate within the MOD concerning the number and priority of threats) that Russia must be ready to repel any threats from any direction. As selected methodology demonstrated its flaws, plans of military reform began to evolve: to reduce the number of military command positions and to ensure social benefits for the military (both active and those to be retired). Security issues lost their urgency.

Putin's team has failed to work out a comprehensive approach to military reform which would take into account economic, social, and political (including domestic) aspects and would provide for ways to maintain the military security of the state. Objectives of military reform are not yet clear. The military speaks about a modern army (this thesis needs to be specified); while governmental economic experts champion the optimization of defense expenditure, implying further cuts. Such a situation is inevitable, since the military is being forced to conceive its plans for military reform without clear political guidelines.

Hot Topic

MILITARY REFORM: A FRESH START

by Dmitry Evstafiev,
PIR Senior Research Associate

The announcement, made after the RF Security Council meeting, of a new stage of military reform does not demonstrate a new consensus on the objectives and tasks of the Armed Forces or an adequate structure. It mostly illustrates the irritation of the Russian political leadership concerning the sluggish pace of military reform, which is not developing, despite the president's exhaustive instructions and the formal resolution of major problems. If there had been further stalling in the acceptance of military reform, it would not only have been a *loss of face* for President Putin himself, but also would have indicated that civilian authorities do not control the situation in the Armed Forces - quite a sensitive issue for the Kremlin. In particular, this would have proved that the Kremlin had no influence on the military bureaucracy, which had become partially politically autonomous during the last period of Yeltsin's rule, despite occasional reshuffles among the top military. Besides, the constant instability of power ministries called into question the Kremlin's general political and personnel strategy aimed at enhancing the presence of the military in governmental bodies.

However, it is necessary to point out that there is some ambiguity in the approved decisions. On the one hand, the political leadership is interested in transforming the power ministries from a potential source of instability into an element of political support. Nonetheless, the Kremlin is not ready to conduct military reform by forming a new Armed Forces or demobilizing the decaying *Soviet* Army. This approach, besides requiring a principally new ideological basis for the mission of the Armed Forces, and implies a *threat*-based starting point for devising qualitative guidelines for military construction. Reductions in the Armed Forces (declared as the first step in implementing a new stage of military reform) demonstrate that the previous pattern of reform (cuts in numerical strength from time to time) will remain. Thus, there has been no serious shift in the structure of the Armed Forces, the number of power ministries in Russia, or, most importantly, the generation of a new ideology for military construction.

On the other hand, all developments concerning military reform prove that Vladimir Putin, unlike President Yeltsin, is interested in the practical implementation of military reform and the enhancement of the combat capabilities of the Russian Army, rather than the poor *imitation* of military reform to quite domestic dissatisfaction. This means that after some reduction (i.e. cuts in conventional forces and the optimization of expenditures on the Navy, since only these measures can ensure that the government can freely maneuver in the financial sphere) military reform may eventually reach the stage of some significant changes. One of the possible directions of such dramatic reform could be the differentiation between combat-ready units (ready for rapid deployment and immediate engagement) and reserve units (a basis for mobilization in case of *large-scale war*; the reserve may preserve its Soviet-like features).

At the same time, there are three important new elements characterizing the current stage of military reform.

Firstly, it is noteworthy that the military reform now covers all power ministries and not only Defense Ministry units. This is a crucial bureaucratic decision, which will have tremendous political consequences. This indicates, above all, the decreasing political influence of paramilitary agencies (above all, the troops of the Ministry of Interior, which have recently been confronting the MOD units, and the Ministry for Emergency Situations (EMERSCOM), the inclusion of which indicates the extent of recent political shifts). The diminishing political influence and status of paramilitary ministries will be accompanied, according to President Putin, by a significant reduction in the number of generals (in particular, in the

MOI and EMERSCOM). In the long run and if the political will exists, this step may result in the consolidation of the military elite in conformity with the MOD's criteria and, hence, may raise the attractiveness of military service (due to the psychological and social benefits). At the same time, one should bear in mind that such dramatic changes will inevitably cause resentment of the aforementioned power agencies and can be risky for the political leadership.

Secondly, a principally new ideological basis for military reform is the demand to enhance the combat readiness of the general-purpose forces. This not only puts an end to discussion between Igor Sergeyev and Anatoly Kvashnin, but also transforms the ideological paradigm which implied that nuclear deterrence should serve to prevent conflicts, whereas conventional forces should be used for local wars inside Russia and occasional peacekeeping operations. The proposal to increase the combat readiness of large Army and Air Force units demonstrates that Russia's leadership is providing for the possibility of a relatively large non-nuclear armed conflict (larger than a classical local war) on the borders of Russia or within the nations members of the renewed Treaty on Collective Security. This concept has already reflected itself in the growing number of deployed units with constant combat readiness and wartime capabilities. It is also noteworthy that Moscow no longer speaks about the absence of serious military threats to Russia in the foreseeable future (as was stated in many recently adopted doctrines and concepts of military construction). This indicates that the Russian political leadership has deliberately incorporated significant public concerns about external threats into its strategy.

Thirdly, Russia has actually postponed the solution of the problem of top command and control structures and their organization. This matter requires the appointment of a new Defense Minister, since after changes and fierce debate Igor Sergeyev's positions seem no longer politically legitimate; as well the resolution of the problem of operational command of the Armed Forces. These problems may prove that Vladimir Putin is not capable of serious reshuffling personnel and has to face some difficulties in this area. The Kremlin presumably fears using traditional *interest groups* within the General Staff and the MOD to pursue its policy. Under the current political and bureaucratic circumstances, the concept of appointing a civilian as Defense Minister can also be called into question. Military reform, if it follows the aforementioned pattern, will inevitably result in the increasing status of the MOD, its officer corps, and senior leadership, which will require an additional element of civil control. The appointment of a civilian Defense Minister cannot be a remedy for the organizational problems and growing political autonomy of the power ministries (as a result of the high demand for law-enforcement officials and military professionals to ensure the success of law-enforcement and combat operations).

In general, one has to admit that there can be further attempts to use administrative and power instruments to solve the problem of military reform, since the Security Council's decisions do not specify the structure of future Armed Forces, the amount and ratio of reductions and pave the way for further bureaucratic bargaining. Thus, the unanimous decision of the Security Council to begin a new stage of reduction in personnel can be considered as a starting point for discussion accompanied by waves of *bureaucratic instability*. Much will depend on Putin's and the Security Council's ability to pass through this period of *bureaucratic instability* (which may last until spring 2001). Their success will prove that the power ministries can be transformed to have positive impact on the Russian system of governance and that there is an opportunity to change Yeltsin's system of power, which was based on a non-functional attitude towards the Armed Forces. Yeltsin's team used to negate the role of the Army as one of the pillars of the state and used to increase the influence of paramilitary agencies loyal to the *Family*.

Military reform is especially urgent, especially taking into account that, starting from spring 2001, President Putin will have to enhance his political might, since his economic legitimacy may diminish due to possible failures (so far, Putin has managed to ensure a relatively smooth transition through potentially disastrous fall of 2000). Bearing in mind the touchy attitude of the Russian public towards military reform and external/internal military threats, one may presume that the issue of military reform may become a litmus test for the Kremlin's progress.

Interview

OLEG CHERNOV: *'GLOBALIZATION MAKES RUSSIA EVEN MORE SENSITIVE TO NEW MISSILE CHALLENGES'*

[This article was originally published in Russian in *Yaderny Kontrol*, No. 1, Vol. 7, January-February, 2001]

Will Russian nuclear policy change? What is the fate of the Strategic Missile Forces? What is the solution to US-Russian deadlock in the area of strategic offensive arms reduction? What will be the Russian response to US NMD deployment? Is the threat of WMD terrorism realistic? How does Russia assess the missile proliferation process in different regions of the world?

Deputy Secretary of the RF Security Council Oleg Chernov answers these and other questions concerning national security, arms control, and WMD nonproliferation in his exclusive interview with Editor-in-Chief of Yaderny Kontrol Journal Vladimir Orlov.

***YADERNY KONTROL**: **The National Security Concept of the Russian Federation* indicates that the task of strengthening the nonproliferation regimes of WMD and delivery systems as a major way to ensure Russian national security. We would like to know how this task has been accomplished in the recent months. What has Russia done to strengthen the international nonproliferation regime?**

OLEG CHERNOV: The process of strengthening nonproliferation regimes (there are six international regimes regulating proliferation of WMD and delivery systems) requires the concerted efforts of all parties concerned. At present, this issue is vital even for the states that have not yet reached advanced levels of scientific and technological capabilities. The world is becoming more and more interdependent and there are no more *distant corners*. None can hide from the threat of proliferation if states do not have the political will to make collective efforts to prevent WMD proliferation. As far as the second part of your question is concerned, there are both perceptible and imperceptible parts of such activities.

The more visible part includes meetings, negotiations, and the specific nonproliferation agreements President Putin reached with the heads of states and governments during summits in Moscow, Okinawa, or Brunei. Russia's real contribution to strengthening WMD nonproliferation has been the presidential initiative at the UN *Millenium Summit* in New York and the work of various Russian delegations within the framework of existing international export control regimes (i.e., the Nuclear Suppliers Group, the MTCR, the *Wassenaar Arrangements*, etc.). Obviously, the hard work of all Russian government agencies has preceded these contacts; the Ministry of Foreign Affairs coordinates the international aspects of these activities.

Taking into account the seriousness of threats in the area of nonproliferation and the need to coordinate countermeasures, including special forces operations, the Secretary of the Security Council has recently joined these activities.

The less visible part is the routine work done to prepare for governmental decisions and presidential instructions relating to specific ways of enhancing nonproliferation policy mechanisms in order to ensure Russian national security and Russia's compliance with its international commitments. In the last six months, the government has adopted about two dozen such documents and more than half of them have already been implemented. These activities include development of appropriate legal documents in accordance with recently approved Federal Law "*On Export Controls*", the introduction of an internal compliance programs, etc.

Q.: ***The National Security Concept*** **also states that the proliferation of WMD and delivery systems is one of the key challenges to national security. What form do these threats assume, where do they come from,**

and what should be done to prevent or to mitigate them?

A.: I believe there is no doubt that the proliferation of WMD makes world less safe and stable place to live. Any changes to the list of those who possess WMD will undermine the existing balance and stability.

On the one hand, the most notable event is the trend of enlarging the memberships of nuclear and missile *clubs*, i.e. there are a number of states that cannot restrain their ambitions concerning WMD and delivery systems. The areas of most grave concern are the Middle East, Central Asia, and the Far East. We do our best to prevent this list from growing.

We are also concerned by US intentions to deploy a NMD system under the pretense of protecting itself from the threat of so-called "*states of concern*" and, hence, dealing a serious blow to the cornerstone of strategic stability - the 1972 ABM Treaty. In parallel to this, NATO is continuing its expansion and potentially could deploy its WMD on the territory of new members.

On the other hand, there is the problem of the *leakage* of WMD-related goods, technologies, and services. This issue is urgent for many nations, including the United States, Western Europe, and Russia. National export control systems exist to prevent such *leakage*.

Q.: **A more precise question concerns the threat of missile proliferation. Russia has admitted to the existence of such challenges. Now it is important to assess the threats themselves, whether they have been exaggerated or downplayed. We would like to hear your evaluation of the situation in such regions as the Middle East and East Asia.**

A.: All assessments are based on the availability of information depicting at what stage the missile program of any nation of concern is located. If we are speaking about the actual scale of a missile threat, I believe, no one has ever underestimated it. Professionals have always known that there are a number of countries that are interested in developing indigenous missile programs and are making efforts to realize such plans. Information on such issues is available via the MTCR program of information exchange and from our own secret sources.

The most critical thing today is to understand the realistic prospects for such foreign missile programs and build one's strategy upon this understanding.

In my opinion, globalization has made us take these threats even more seriously. It would be not reasonable to down play them while the situation in the Middle East is deteriorating. However, we cannot apply double standards. Our efforts are aimed at eliminating the threat of missile proliferation in general, regardless of the geographical location of the particular state in question.

Along these lines, I must turn your attention to the Russian initiative in the area of missile nonproliferation - the global system of control of missile proliferation. This initiative calls for the establishment of an international control regime to ensure global security and stability. This regime must be of a universal and non-discriminative character.

Q.: **In September 2000, at the UN *Millenium Summit* in New York the Russian President put forward two initiatives aimed at preventing proliferation and a new arms race. One of these initiatives proposes the step-by-step exclusion of weapon-grade fissile material from use in the nuclear energy sector; the other relates to the demilitarization of outer space. There is always the risk of a gap between an initiative and its practical implementation, for instance, if this implementation takes the form of negotiation process. What should be done to ensure the accurate realization of presidential initiatives? How would you assess the chances of the Russian initiatives for finding international support?**

A.: Much has been done to implement Vladimir Putin's initiative on the ways to ensure an energy supply adequate for the sustainable development of mankind, to resolve in radical way the problems of the proliferation of nuclear weapons, and to

ensure the environmental recovery of the planet.

At the 44th meeting of the IAEA General Conference (Vienna, September 2000) – a leading international organization promoting cooperation on researching peaceful nuclear energy uses and incorporating 133 member states – adopted a resolution backing our initiative.

The Agency has set up a Task Force for Innovative Nuclear Reactors and Fuel Cycles, which will analyze, choose, and develop perspective nuclear technologies. The activities of the group will become an important step in the implementations of President Putin's initiative.

On November 10, 2000, Vladimir Putin met IAEA Director General Mohamed Elbaradei. The latter commended Russia's initiative as timely and useful and promised to assist in its coordination and implementation.

President Putin's comprehensive approach towards ensuring energy supply adequate for the sustainable development of mankind, resolving in radical way the problems of proliferation of nuclear weapons, and ensuring the environmental recovery of the planet makes our forward-looking initiative quite useful. Thus it has been gaining greater and greater support from the international community.

On our part, we are continuing work to carry out this initiative within the framework of the IAEA, the UN and other international forums, as well as in bilateral and multilateral forms.

Now let us speak about the Russian initiative on the demilitarization of outer space.

I would like to point out that, by setting forth this initiative, Russia does not plan to prohibit all military activity in outer space. The use of space systems for the verification of compliance with international disarmament agreements, for early warning of missile attack, for navigation, and meteorology eventually enhances international security. Russia intends for weapons not to be deployed in outer space, space should not become an arena for military confrontation and arms races. Since there have been no weapons deployed yet in outer space, Russia's initiative has a greater more chance of being implemented and has proved its pragmatic character.

These issues can be discussed at an international conference to be held in Moscow in spring 2001 under the auspices of the UN, as President Putin proposed. The conference could enable its participants to exchange opinions on this vital issue, seek solutions, and prepare policy recommendations. It could give new impetus to the reestablishment of the special committee on preventing arms race in outer space, which was proposed at the UN Conference on Disarmament in Geneva. This action would conform to the international efforts within the UN, which supported, in 1999 and 2000, the resolution on preventing an arms race in outer space. At the current session of the First Committee of the UN General Assembly, there were no votes against, 154 votes for, with 2 nations abstaining. This world attitude creates a favorable atmosphere for promoting the Russian initiative.

The conference would coincide with 40th anniversary of the first space flight by a human being. This coincidence makes discussion, at the Moscow forum, of prospects for the peaceful use of outer space even more suitable. Thus the slogan of the conference could be "*Space without Weapons – An Arena for Peaceful Cooperation in the 21st Century*".

Q.: **The RF Security Council has lately paid growing attention to WMD nonproliferation issues, e.g. export controls. What role may the Security Council play in shaping Russian nonproliferation policy in the future?**

A.: Actually, in the last two years we have been closely dealing with nonproliferation issues. Our major task is to ensure the effective functioning of the national export control system. According to the Federal Law "*On Export Controls*", the burden of solving emerging problems and implementing state policy in this area should be born by a specialized federal executive authority responsible for export controls. This federal body is the Ministry of Economic

Development and Commerce of the Russian Federation. Nowadays, it is important to develop a smooth mechanism, which will function effectively and individually, that will apply all the positive experiences of the past. However, I believe that the Security Council will continue to play a coordinating role in pursuing state policy in this area.

Q.: **At present, state officials recognize the risk of terrorism, sabotage, and blackmail with the use of WMD and these risks are increasing. What measures does Russia usually take to diminish such a threat? What measures should be taken?**

A.: I agree entirely that the danger of nuclear terrorism is increasing every year. We pay special attention to the implementation of the Convention on the Physical Protection of Nuclear Material to ensure the security of fissile material during transportation and participate in international efforts to curb illicit trafficking in nuclear material. Russia also is enhancing the security of its nuclear facilities.

We hope for further effective cooperation in this area with all parties concerned. We are collaborating with the United States within the Nunn-Lugar framework to provide for the physical protection of nuclear material and to improve export control mechanisms.

Q.: **Now let us get back to the issue of missile defense and US plans in this sphere. Can we regard Clinton's recent statement on the deferment of this issue to his successor's term as a victory of Russian diplomacy? Do you see any ways to solve the NMD problem after the US elections?**

A.: If this issue had only a diplomatic character, it would be OK. You know that Washington explained its decision to delay NMD deployment as a result of purely technical reasons. I believe, however, that there were more reasons for President Clinton's statement. The US arguments concerning missile threats were not that convincing; too much depended on the position of NATO allies, let alone the positions of China, Russia, and an overwhelming majority of nations (a draft resolution of the UN General Assembly pertaining to the need to preserve the ABM Treaty got 79 votes for and only three votes against in the First Committee). So the USA did not dare to contradict the will of the entire world community.

Russia has various cheaper means of deterrence and may give adequate and not costly response to the US NMD deployment. But that is not the point. A decision in favor of NMD deployment will ruin the global system of strategic stability and its consequences will be felt by the entire world, including the United States. Perhaps Washington does not want to follow a policy of common sense. On the contrary, it is striving for a technological breakthrough (to leave Europe behind) and prefers complying with its commitments to the military-industrial complex. We hope that, eventually, common sense will win.

Q.: **If we look at the big picture, the START process is in stalemate; START II has not entered into force due to its incomplete ratification by the US Senate; and START III talks have not yet commenced. What do you think about US-Russian consultations on START III and ABM issues in Geneva? Have the experts of two countries managed to proceed with principal agreements on strategic stability reached during the Moscow and Okinawa summits? Do you see any chance for a breakthrough or is it a matter for extensive dialogue with the new US administration?**

A.: US-Russian consultations on strategic stability issues are quite important. It is noteworthy that such issues cannot be reduced to only START and ABM problems. The consultations cover a wide range of matters and they should be continued and should include other states. In fact, such consultations are already under way at different levels and within a different framework. Our consultations with the United States strive to develop agreements achieved in Moscow and Okinawa. However, as you may understand, such development should occur at the same level where it has started, i.e. at the level of heads of states. And this is the matter of the future. Much will depend on a new US administration, its political will, the level of continuity of US foreign policy and on how fast the new

administration will get engaged in tackling international problems. We will see.

Q.: **Many top-ranking Russian officials and military professionals used to say that the adoption of a new *National Security Concept* and *Military Doctrine* demonstrated Russia's reaction to developments in Kosovo, i.e., as it was said, to the first explicit NATO aggression. May we presume that as a result of US NMD plans, whose implications may be even more dangerous for Russia than war in Kosovo, Moscow should review again its *National Security Concept* and *Military Doctrine*?**

A.: You've touched upon many important issues in one question. Let us consider them in order.

It takes more than a month to write a concept. NATO aggression in Kosovo only confirmed the advisability of developing an adequate response to the new challenges for Russian security. At the same time, the major reason behind amending the *National Security Concept* was Russia's domestic development and this was stated in the body of the document. In fact, Russia has never before made such a sharp and honest assessment of its internal situation.

The problem of Russian national security in conjunction with US NMD plans is more complicated than normally presumed. This should not be interpreted as a US threat to Russia. You may know that we have many times maintained that Russia, despite its difficult economic situation, is capable of responding adequately to any threat emerging from a violation of the 1972 ABM Treaty. However, I myself do not believe that such a threat will emerge. It is more important to focus on the fact that such plans may pave the way to a new and unprecedented arms race, including the militarization of outer space and the development of new WMD. The disarmament process, which has become the backbone for the current strategic stability, may be ruined. This balance of power, which prevents the world from military disaster, may be broken. This is a realistic threat. Is it dangerous for Russia only?!

As far as the *National Security Concept* is concerned, in the process of elaborating this document we tried to provide for such developments as well. In my mind, this is a long-term strategic document. Obviously, some tactical changes are quite possible. They are stated in annual presidential addresses to the Federal Assembly of the Russian Federation.

Q.: **Would it be true to say that due to Russia's limited financial resources, which limit Russia's ability to symmetrically respond to US developments in the military-technical sphere, it would be reasonable to concentrate on devising an asymmetrical response and to revise some provisions of Russia's nuclear policy?**

A.: I do not think that it is necessary to symmetrically respond to any challenges, including in the military-technical sphere. I assume that it is often more profitable to do the opposite, i.e. to resort to asymmetrical measures. Otherwise we may find ourselves in a trap. Here is an example. Once the USA decided to achieve indisputable nuclear superiority and produced about 10,000 nuclear warheads. The USSR symmetrically responded and did the same. Nowadays, the United States and Russia have realized the senselessness of such a situation and have undertaken significant reductions of nuclear weapons.

As far as the military-political response to military-technical challenges is concerned, such a response should be complex, if required. I presume we will not have to change our nuclear policy in the near future. It is based on the real economic capabilities of the state and on existing and predicted demands for maintaining military security. There is no reasonable alternative to the process of arms reduction and the total elimination of nuclear weapons in the future.

Q.: **In conclusion, let us touch upon the plans for military reform. The Security Council meetings made principal decisions pertaining to military reform. Nonetheless, they came out with different interpretations. Along these lines, could you tell us about the key decisions made by the Security Council, especially those**

concerning the reform of the SMF? What is the schedule for the implementation of specific measures to promote the military reforms approved by the Security Council?

A.: The reduction of the SMF is being carried out within the framework of the implementation of international nuclear arms reduction and limitation treaties. Since Russia has ratified START II, which provides for the complete elimination of land-based MIRVed missile systems by late 2007, the SMF will undergo dramatic reduction if the treaty becomes effective. Meanwhile, aging missile systems to be decommissioned will be replaced by the modern Topol-M missile system, some of whose characteristics are unique. Thus, the SMF's arsenal will be preserved at the level which (together with sea-based and air-based nuclear forces) will enable Russia to maintain a balance of nuclear deterrence with the United States.

In early November 2000, the Security Council held its regular meeting and discussed the need to adjust Russian policy in the area of military construction and to determine key directions for the development of the military organization of the state in the coming decade. Proceeding from the conclusions of an expert group, headed by Secretary of the Security Council Sergei Ivanov, members of the Council shaped a new plan for Russian military organization in general and each power ministry in particular. The meeting attempted to find mechanisms for reducing the numerical strength of these units while simultaneously enhancing their qualitative characteristics.

The decision of the Security Council took into account political, military-strategic, economic, organizational, legal, and other factors to determine the direction, scale, and pace of reform.

The implementation of the aforementioned decision will give a new impetus to military reform and will enable Russia to have, by 2010, a compact, mobile, well-equipped, and well-trained military capable of effectively defending the country and maintaining its security.

Interview

VALERY LEBEDEV: '*WE HAVE TO FIND SOME OPTIMAL WAY TO DISMANTLE NUCLEAR-POWERED SUBMARINES*'

[This article was originally published in Russian in *Yaderny Kontrol*, No. 6, Vol. 6, November-December, 2000]

On October 18, on the territory of Zvezdochka machine-building plant in Severodvinsk, there was an inauguration of a complex for reprocessing liquid and solid radioactive waste, which is the side product of nuclear-powered submarine dismantlement. The facility is the third plant of this kind built in Russia with foreign assistance under the CTR program.

According to Minatom officials who are charged with submarine dismantlement under Governmental Resolution No. 518 of May 1998, the facility will enable Russia to overcome a stalemate in nuclear-powered submarine dismantlement. Deputy Minister of Atomic Energy Valery Lebedev speaks about prospects of this process in his interview with Dmitry Litovkin, Staff Writer of Yaderny Kontrol Journal.

YADERNY KONTROL: **Valery Alexandrovich, what are the problems Minatom has to face in the course of assuming responsibility for decommissioned nuclear-powered submarines of the Russian Navy?**

VALERY LEBEDEV: Your question contains a mistake. To make the provisions of Resolution No. 518 clear, I would like to emphasize that the Minatom is a state contractor and has to coordinate dismantlement activities for nuclear-powered surface ships and submarines. Hence, we only organize this work.

When you say that the Minatom received nuclear-powered submarines from the Ministry of Defense (MOD) and assumed responsibility for them, you are absolutely

wrong. The Minatom does not receive ships. The Navy transfers them directly to enterprises of the State Agency of Shipbuilding and to shipbuilding yards of the Navy, which are in charge of dismantlement. There are three such plants of *Rossudostroyeniye*: *Zvezda* in the Far East, *Zvezdochka* in Severodvinsk and *Nerpa* in Murmanskaya oblast; and a number of shipbuilding yards of the Navy. Mediator in this transfer from the Navy to the plants is the Ministry of State Property.

A military unit, to which a ship is assigned, and a dismantlement plant sign an act of property transfer that states characteristics of the vessel and its condition when it arrives at the dismantlement facility. Only afterwards there starts dismantlement, unloading of spent nuclear fuel and its transportation to *Mayak* plant in Chelyabinskaya oblast for reprocessing.

Our ministry has to coordinate these activities: to prevent excessive expenditure of budgetary funds, to solve all related problems, above all the issue of liquid radioactive waste. We have five types of radioactive water to be reprocessed. Along with liquid waste, solid waste appears. And it cannot be discarded. These are not bricks, which can be collected later by other construction workers. There should be a technology for their reprocessing, disposal and environmentally-friendly neutralization to ensure their long and safe storage.

These tasks are not easy to accomplish. The major threat is nuclear reactors and our ministry, whose enterprises have manufactured these power plants, resumes its control over reactors. As you know, it is not difficult to scrap a submarine; this process emerged as soon as shipbuilding appeared. Scrapped metal was melted and used again in the industry. The problem of nuclear-powered submarine dismantlement is connected with their radioactivity and radioactive safety. This is why, in accordance with Resolution No. 518, our ministry, as having expertise in these matters, was charged with nuclear-powered submarine dismantlement activities.

Q.: **But the MOD received special funds from the government to conduct dismantlement of military equipment, including nuclear-powered submarines. What is current situation of the Minatom? The Ministry seems to be a rich organization gaining real revenues from external trade in goods and services…**

A.: Anyway, the MOD, the Navy, the Minatom receive money from the state budget. The amount of this funding has always been small, hence, hampering dismantlement activities. When we became a state contractor for nuclear-powered submarine dismantlement we began to appropriate our own funds from profits we gained under HEU-LEU contracts. The government has allocated about 172 million rubles for dismantlement, whereas actual costs are 1,027 million rubles. This gap was covered thanks to HEU-LEU deal. However, this is only the first part of our work.

Nowadays, we try to minimize expenditure on nuclear-powered submarine dismantlement. We supervise costs of this or that work, check mechanisms of selling scrap metal, ensure return of incomes from such sales and its spending on submarine dismantlement activities. After three-compartment block is cut out (reactor and two adjacent compartments), bow and stern of a submarine should be sold and compensate for cut-out activities. Many plants succeed in such transactions and partly pay themselves for their own work. We had a discussion with heads of enterprises whether this money would be enough to cover the costs. Practice says "*yes*". In 2000, total amount of money from metal sales was about 200 million rubles. We believe that this is a significant result.

Q.: **You want to say that when the Minatom became a state contractor for dismantlement of nuclear-powered submarine, this process began to bear profits?**

A.: No. These activities will never be profitable. For instance, in the United States in the course of dismantlement of one submarine, *return money* accounts only for 20% of invested funds. We have nearly the same figure. Unfortunately, many vessels are robbed before they reach dismantlement facilities. We have a situation in the country when everyone tries to steal something…

Our approach is to give a comprehensive view of the problem. Firstly, it is not necessary to create excessive productive capacity for reprocessing. We should develop infrastructure keeping in mind developments in the future. Secondly, we have to solve a difficult problem of irradiated fuel management. We can build at a plant a facility for unloading nuclear fuel, berths, but there will be no mechanisms for unloading and space for storage. For instance, *Zvezdochka* has got a berth for unloading submarine reactors but has no equipment for that.

In the past, this procedure was exclusive responsibility of the Navy and it used specialized floating workshops instead of berths. We had to repair them, since massive nuclear-powered submarine dismantlement had started. Only in 2000, we will be able to unload fuel from 18 nuclear-powered submarines (in 1999 - 9 vessels, in 1998 - only four vessels). We increase the pace but have to optimize this process. Obviously, we can easily unload fuel from 30 submarines per year and, hence, cope with all decommissioned nuclear-powered submarines in two years. But what will happen next? Ships will not be decommissioned all the time and it will turn out that we have wasted money for enhancing unloading capacity. We have to find an optimal solution. Minatom experts are now trying to determine what should be developed and to what extent, so that every invested ruble may pay back, if not bring some profits.

After unloading spent irradiated fuel, it must be placed in specialized shipment containers. It is necessary to know how many containers we need. Then it will be transported for reprocessing. There was only one specialized train for such transportation. In September 2000, with the help of Norway we acquired the second train. One should also know the precise number of free cells for containers in the storage facility of *Mayak*. If one does not reprocess the fuel and only accumulates it in the storage facilities, all free cells will be filled and dismantlement process will be paused again.

To avoid this, we are reconstructing productive capacity of *Mayak* plant. We can now reprocess up to nine tons of radioactive fuel a year. In 2001, we will be able to reprocess even more, but again the question of optimal pace emerges. We cannot afford to have a plant stagnating without raw materials to be reprocessed! This is very important issue, since it is the matter of budgetary funds. If we increase production at *Mayak*, we will need fewer containers for transportation of spent nuclear fuel, i.e. it will be enough to possess two trains.

Q.: **Valery Alexandrovich, about a year ago Atomflot plant presented a *Zvezdochka*-like complex for reprocessing liquid radioactive waste. However, this plant is not operational yet… The press also comments situation with floating complex - *Landysh* - situated on *Zvezda* in Bolshoi Kamen.**

A.: I doubt that there was any presentation in *Atomflot*. I was there in late October 1999 and saw that only installation operations were under way. The Minatom and *Atomflot* planned to make it operational in 2000. Delay was caused by incomplete design of concrete mixer, where concrete is mixed with liquid radioactive waste. This is why we had to postpone plant's opening until 2001. As far as the floating complex is concerned (*Landysh* was made in collaboration with the Japanese government), its installation has been completed, it has passed state testing procedures and the state commission has already signed an act permitting its operations. Nowadays, we have to obtain permission of *Gosatomnadzor*. I believe that this will happen within six weeks and *Landysh* will become operational in 2000. The same relates to operational schedule of *Zvezdochka's* complex.

Q.: **According to your estimates, what will be the optimal amount of nuclear-powered vessels to be dismantled?**

A.: The optimal amount of nuclear-powered vessels to be dismantled is about 20-25 submarines per year. 25 submarines are the maximum. For that purpose, we will require two trains to transport the waste. The production capacity of the *Mayak* plant is about 14-15 tons a year. Such a pace will enable us (Minatom and VNIIPIET) to cope

with this work in the next six-seven years. It will take us two-three years to gain momentum, reach the level of 25 submarines a year, and then gradually decrease dismantlement activities. The reason for this schedule is quite simple: Russia will not have so many decommissioned submarines in the future. This fact is the reason why, at present, we believe it more reasonable to extend the dismantlement schedule and, thus, reduce the total costs. Besides, we will have to define which submarines should be eliminated immediately and which ships can wait in the yards for decommissioned vessels.

Nuclear-Powered Submarine Dismantlement in Russia
(as of late October 2000)

	North Fleet	Pacific Fleet
Decommissioned submarines	110	74
Submarines with fuel unloaded from reactor compartments	44	29
Pending for dismantlement with spent nuclear fuel in reactor compartments	62	49
Dismantled nuclear-powered submarines cut into several blocks	35	18
Sent to plants for dismantlement	29	

Source: Minatom's Ministerial Board meeting of October 24, 2000.

Q.*:* **There is a peculiar aspect in what you say. When we speak about general amount of decommissioned or dismantled ships, we normally mix up several types of vessels. We talk about strategic nuclear-powered submarines with ballistic missiles, but we also have multipurpose nuclear-powered submarines. The United States pays for dismantlement of SSBNs under the CTR program, more known in Russia as the *Nunn-Lugar* program. If we remember the words of Nikolai Kalistratov, Director General of *Zvezdochka*, his plant has dismantled five SSBNs in 2000, whereas in the north of Russia there are 110 decommissioned nuclear-powered submarines. This means that we have more than 100 multipurpose submarines. What should be done with these vessels? The USA is not planning to pay for elimination of ships that do not pose immediate threat to US national security. Hence, all these ships become a financial burden for the Minatom, right?**

A.: The state pays for dismantlement, and the Minatom does the same as a state body. Obviously, we understand that funds should be raised. The United States has completed financing of SSBN dismantlement and we only commence negotiations to procure funds for multipurpose submarines. At present, we have just finished to prepare documents on this issue. They are considered by the Russian government and will be later submitted for consideration of the USA. All papers will be sent to the Defense Threat Reduction Agency headed by Gen. Thomas Kuenning, so that the USA may take a decision whether these ships pose environmental threat or not. We hope that the United States will participate in dismantlement of these vessels. So far there is an agreement concerning such assistance, but we have to provide materials first. Only after that, we will begin negotiations on timetable for dismantlement of multipurpose nuclear-powered submarines.

Q.: **12 nuclear-powered submarines to be dismantled at *Zvezdochka* are multipurpose ships?**

A.: These are five SSBNs and seven multipurpose nuclear-powered submarines.

Q.: **However, multipurpose submarines pose today the most serious threat. Some of these ships have been waiting for dismantlement for 20-30 years…**

A.: Yes, you are quite right. Most of the decommissioned multipurpose nuclear-powered submarines are the first and the second generation ships. SSBNs are not that old. Nonetheless, we have to dismantle

strategic submarines to fulfil our commitments under START I and START II. I hope that the United States will support our proposals concerning dismantlement of multipurpose nuclear-powered submarines.

Q.: **However, if the USA refuses to assist Russia in dismantlement, have you already calculated the funds to be invested?**

A.: I have already said that to facilitate the process we will have to invest about 2 billion rubles per year (in current prices). This funding provides for annual dismantlement of 25 submarines. Meanwhile, there is one more "*but*". All these calculations were made before increase in oil prices. The latter will result in growing costs of transportation. Shipbuilding plants will have to pay more for dismantlement, for transportation of irradiated nuclear fuel to *Mayak*. This may significantly affect our plans.

Q.: **Is there any final decision concerning the future of cut-out reactor compartments of the submarines? At first, it was planned to build a storage facility near Murmansk, then - on Novaya Zemlya…**

A.: So far we have been working at this problem and have several possible solutions, including construction of storage facility near Murmansk. Managers of *Zvezdochka* plant have already made technical assessment, got approval of administration of Arkhangelskaya oblast for installation of interim storage facility to store reactor compartments on the territory of the enterprise. We looked at this place, it is situated quite conveniently and it is profitable because the plant will have to spend less on maintenance and storage of reactor compartments.

Nonetheless, it is too early to speak about general solution to this problem. This is a new task for us and we have to conduct a number of research activities. We have to envisage all possible developments, which may happen to these compartments, so that in the long run we may say that our decision will ensure environmentally-safe long-term storage of reactor compartments. Nowadays, we can speak about safe storage of reactor compartments for 50 years only.

Analysis

NEARLY MORTAL DILEMMA: THE EUROPEANS AND THE US PLANS FOR NATIONAL MISSILE DEFENSE

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There are essentially three ways to approach the issue of missile defenses:

- To argue that some basic pattern of the Cold War relationship are still intact and missile defense has thus to be discussed essentially within the same framework as before 1989;
- To argue that the conditions of the Cold War no longer exist and missile defense must be inquired for their potential to help with the transition to a nuclear-weapon-free world;
- To argue that the conditions of the Cold War are no longer applicable and missile defense is necessary as a complement to nuclear deterrence as part of national (or alliance) security policy.

All three lines of argument are encountered in the present global debate on the issue, though with a fairly unequal geographical distribution. The first one is prevailing in Russia, China, most quarters in Western Europe, and across the nonaligned world; it has staunch adherents in the US arms control community. The second one has supporters in the US arms control community, and in small minorities in Western Europe. The third one dominates in the US debate and has a small number of followers in Western European strategic communities and defense ministries.

'The Cold War Is Over, but Its Strategic Conditions Remain Partially Intact'
It would be wrong to read the first view as seeing the world largely unchanged as compared to the era of the East-West conflict.

The growth in institutions serving security cooperation in Europe and globally is, to the contrary, recognized and welcomed. The shift in security assessments from 'threats' to 'risks', that is from consciously conceived capabilities for military pressures and threat if not attack to constellations where things could go wrong, or where shifts in stability may lead to new threats in the future where none exist today, is appreciated. This view endorses a strategy that would use and enhance chances to intensify security cooperation and strengthen the respective institutions or to create new ones where none do exist today.

Nevertheless, proponents of this view would point to the fact that the relationship between major powers, including nuclear weapon states, while not hostile and by and large cooperative, are not that those of stable friendship. Conflict of interest and ensuing tensions do still remain. They range from disagreement about how to handle the conflicts on the Balkans to competing interests in oil resources in the Caucasus and Central Asia, from disagreement about claims in the South Chinese Sea to the issue of Taiwan and the general order and balance that should prevail in Asia. Perceptions of potential conflicts are there. Military capabilities of the *other side* are seen as a potential, though not necessarily clear and present, challenge.

In this context, it is obvious that there is still a residual element of nuclear deterrence prevailing in the security relationship between these countries, notably the United States, Russia, and China. This element does not dominate present relations that are much more differentiated and complex than during the Cold War, mixing a much larger cooperative element with this residual factor of deterrence. But the latter is not yet completely absent; and it is made essential to the perceived national security of the less powerful two by the sheer superiority the United States commands in both military technology and conventional military capabilities.

In this specific context, missile defenses, if put up unilaterally or asymmetrically, contain still risks that motivated the two protagonists of the East-West conflict to negotiate the ABM Treaty. It could even be argued that the risks are more pronounced because the – real or perceived – balance that reigned during the Cold War has given way to the unchallenged superiority of one nuclear weapon state over the others. National missile defense in the old days were thought to be capable of creating profound doubts on either side in the validity of the deterrent, leading to risky and destabilizing moves in doctrine, strategy, deployment and operational modes. Under the assumption of asymmetry and one-sidedness these risks must be rated as fairly high. As even the US negotiator suggested to his Russian counterpart during the efforts to find suitable changes in the ABM Treaty, redundant nuclear weapons holdings (which would run counter to obligations under the NPT) and high alert status and launch-on-warning postures (which would keep nuclear forces in a rather unstable, risky and dangerous condition) would help to counter the detrimental effects on the Russian nuclear deterrent of the US national missile defense system as presently conceived. For China commensurate arguments apply. It goes without saying that the situation would become more and more acute the denser the planned defense system would be deployed.

As a consequence of that reasoning, the holders of that view plead for the preservation of the ABM Treaty in its present substance; that means that the erection of effective missile defenses covering the whole national territory of a nuclear weapon state should remain prohibited. Adherents of this view may make an allowance for such changes in the Treaty that can be negotiated between the Treaty party and silently agreed to by the relevant non-parties, most prominently China. In other words, the standard objective for a Treaty change is not to accommodate national plans adopted unilaterally by one state, but the preservation or even strengthening of an agreed, cooperative security system in which all major players view their interests as accommodated. One may be skeptical if such a system is achievable in the foreseeable future. The US administration plans to introduce NMD in three phases. The first two phases would mount a system too limited to

pose a serious threat against the Russian deterrent, but possibly strong enough to jeopardize the Chinese deterrent in worst case scenarios (starting with a surprise first strike) The third phase system would already muster considerable capabilities that might look threatening to Russian planners under worst-case considerations. Republicans have declared it their solemn objective to move to much more powerful and effective systems, compounding the concerns in Moscow and Beijing. Admitting initial changes in the ABM Treaty that would eliminate its basic goal – the prohibition of all types of NMD, however weak or strong, could be interpreted from this perspective as enabling the United States to lay the groundwork for an infrastructure that would, later on, permit a relatively rapid breakout towards a system such as preferred by the Republicans. Should, on these grounds, agreement on ABM Treaty amendments not be possible, the proponents of this view would rather leave things as they are.

'Managed Transition to a Defense-Dominated, Non-Nuclear World'

Trying to make a virtue out of necessity, some have proposed to work actively towards an agreed, thoroughly managed transition towards a defense-dominated global security system. This should provide favorable conditions for drastic reductions in offensive nuclear weaponry, eventually paving the way to complete nuclear disarmament. First amendments to the ABM Treaty are seen as the initial steps for such a transition.

The starting point here is that, given the dominant mood in the USA, the move towards missile defense is irrevocable. Fully aware of the dangers which this move engenders, as discussed in the previous chapter, the arms controllers promoting this strategy try to catch this move with a cooperative, multilateral net. The transition is to be made cooperatively. The partners shall be encouraged to develop their own defense systems; in order to assist them in their endeavors, available technology should be shared, joint research and development projects initiated. Eventually, a global system covering all states should be installed.

Protected effectively by a reliable system, the fear of nuclear attacks would subside universally. Fears of disarming surprise attacks or uncontrolled *rogue state* strikes would cease to exist. Consequently, nuclear deterrence would loose its mission. With nuclear weapons becoming obsolete – the old Ronald Reagan dream – radical deep cuts in nuclear arms would be possible that are presently resisted by military leaderships. With defense replacing deterrence as dominant strategy, residual deterrence against an outbreak from a nuclear disarmament treaty would disappear as the prohibitive threat scenario in a non-nuclear world: complete nuclear disarmament would become possible.

This optimistic scenario is not without inherent plausibility. If achievable among the leading powers, this might considerably brighten the prospect to nuclear disarmament, providing an answer to the main, security-based counter-argument that this objective is not achievable. However, it rests on three truly heroic assumptions.

- First, given its technological and financial superiority, it would require the United States to share and transfer cutting-edge technology with countries its military elite still regards as rivals and potential enemies. Over the last years, the American inclination to transfer sensitive technologies has diminished rather than grown, even within the Western Alliance. The strongest supporters of an extensive and dense defense system are least likely to consent to such a transfer. The prospects to persuade Congress to acquiesce in what many lawmakers would see as compromising national security are dim at best.
- Second, conflicts of interest among the US, Russia and China would have to shrink to a very low level. This means that viable consensual regimes would have to exist about the Balkans, the Caucasus and Central Asia, and a common understanding where NATO's expansion will stop; the Taiwan issue and the distribution of territory in the South Chinese Sea would have to be settled. Nothing of these requirements is likely to be fulfilled in the near future.

- Lastly, a formula for the common management of the global defense system would have to be established. National systems are unlikely to do the job. They would most likely still suffer from asymmetries in quality and instigate fears of inferiority in the leaderships of anybody else but the USA. A common management for the system is not completely out of reach once the political issues are settled. We can see some faint first traces in the agreement to share early-warning data between the USA and Russia, and the US readiness to help with improving early-warning radars in Russia. But it requires solutions for difficult political, legal, operational and technical issues that will take quite a while to negotiate and to test in practice. The timeframe in which such agreements could be reached – goodwill provided – is certain to overtax the patience of the ardent NMD pundits on the Republican side.

The main problem with this approach is that in its zeal to bridge the gap between the first and the next alternative strategy, it papers over the grave differences in their underlying political philosophies. The US approach to NMD is largely dictated by a strictly unilateralist philosophy of security policy. The multilateralism required to implement strategy two goes way beyond the one that informs strategy one. Yet the arguments of strategy two supporters can be misused as a welcome veil to conceal the strict unilateralism of present NMD policies and to present this unilateralism as aiming at a cooperative security system. The blame is then laid on the partners that fail to accept the allegedly cooperative offers from Washington. The good will of strategy two supporters is thus turned into its contrary: a handy instrument to push forward with a policy that is certain to destroy the traces of cooperative security that were the hard won results of thirty years of arms control. The proposal does not reflect sufficiently upon the very conditions on which its realization would have to be based and thus risks to engender quite counterintuitive political consequences.

'To go it alone' – Protecting America in an Uncertain World

Some things about the third view have already been said. It starts from the assumption that security conditions have drastically changed since the Cold War. Rather then keeping the balance of terror against a menacing Soviet Union, a global rival with equal or even superior military power, the United States is now confronted with serious threats in asymmetrical conflict, emerging from the spread of weapons of mass destruction and missiles, combined with indigenous missile programs in *countries of concern*. These programs progress and will lead inevitably to weapons of a range and quality as to threaten US territory. The threat is seen to be relevant in one scenario in particular: The leadership of a *state of concern* could be tempted to trust that a nuclear threat against the US homeland could prevent the United States from defending its vital interests in the region concerned and could thus begin a military adventure with a view to challenge the balance of power in that region. NMD would add an element of *deterrence by denial* to the already existing *deterrence by retaliation* which, in the US view, might be not sufficient to prevent the *state of concern* from considering such adventures due to a less prudent and more sinister, though not entirely irrational, strategic calculus.

The scenario appears implausible, to say the least, even if we accept for a moment that the feared capability – reliable intercontinental-ballistic missiles – will indeed be in the hands of countries like North Korea, Iran, Iraq or Libya in the foreseeable future (i.e. in a time horizon of 10-15 years). Given the overwhelming means of retaliation by the United States, it is more than unlikely that a nuclear counter-threat would be used for anything else than the preservation and survival of the regime in question. Even Adolf Hitler did not use chemical weapons in World War II; Germany came close to endeavor a chemical attack during the siege of Leningrad, but abstained when it became clear that allied airforces had superiority over the German airspace. Saddam Hussein did not employ chemical or biological weapons against allied forces in the Gulf War, and chose to attack Israel with conventional

missiles only. It can be surmised that this might have changed had allied forces continued their offensive to Baghdad. But the United States has shown a remarkable reluctance to fight its major post-World War II military engagements *à l'outrance*, that is up to the unconditional surrender of the enemy. Neither Korea nor Vietnam, neither the Gulf, Somalia nor Balkan interventions were pressed to the elimination of the enemy's leadership. Rather, the US stopped when the immediate war aims were achieved (or, in the case of the most peripheral engagement, Somalia, not even that). The only interventions which where conducted to the end was against *dwarf states* in the *US backyard*, namely Panama and Grenada. In other words, the contingency in which *deterrence by denial* would really become relevant is just unreal. Furthermore, all regimes in question, and North Korea in the last few years in particular, have shown a remarkable degree of strategic rationality. Their verbal expressions may sound alien at times, and their bargaining behavior is unorthodox, but irrational it is not; it is thus certainly susceptible to notions of deterrence by overwhelming forces.

In the American discussion, it appears clear that a part of the most ardent supporters of NMD looks rather at China than at *countries of concern* as the strategic target of missile defense. China is seen as a global rival of the United States in the long-term, and NMD is viewed as a welcome *trump card* in this coming competition. Since these views are articulated in the US debate, it is understandable that Beijing is highly concerned about the interests underlying US plans.

Russia features in pro-NMD arguments mainly as source of accidental or unauthorized single launches for which the system, even in its first phases, would be configured. However, given the overall strategic context within which NMD is embedded, Russia may be more of a target than it appears.

For the idea to go forward with NMD no matter what is firmly grounded in a unilateralist understanding of national security. National security is not meant to contribute to a common good, but to preserve the security, including the wider interests, of one's own nation. Since the international system is competitive in this understanding, security is best achieved when all options of all potential enemies can be denied, and oneself is in possession of optimal freedom of action. Screening through the various speeches of Republican senators, but equally through Pentagon planning documents, one gets the firm impression that this is what US defense policy is aiming at. It is not coincidental that 'full spectrum dominance' has become the keyword in strategic considerations of the US Air Force, for example.

This view betrays disdain for the ideas of cooperative, common or collective security that is at the heart of the two alternative styles of thinking. Multilateral or bilateral arms control and disarmament agreements are acceptable if they enhance the opportunities to achieve superiority, assist in preserving it, or are at least neutral in their effects. Where options have to be sacrificed and freedom of action has to be constrained, arms control becomes unacceptable.

The West European Position: Arms Control Aspects

It is at this point that West European concerns about US plans are anchored. Western Europe has embraced multilateralism as an inevitable part of its own security policy. It may be that the embeddment of Western Europe's nation states in two intense multilateral structures (NATO and the EU) has affected their individual security identity, and they're thinking thereupon, to a far higher degree than the lonely leader of the Western Alliance. In other words, Western European security philosophy is rooted very much in the concepts underlying the first view of NMD discussed above. It is clear, therefore, that the main concern in Western Europe is that the whole fabric of international arms control and disarmament agreements may tumble under the weight of NMD. Western Europe also sees in all clarity that the three-phase plan that the present administration intends to realize is most likely to mark the beginning, but not the final point, of the

process of NMD development and deployment.

There is hope that maybe an agreement between Russia and the USA on some amendments of the ABM Treaties can be negotiated. It would be exaggerated to say that these hopes are high. If not, what Europeans expect is that Russia will turn to MIRVing the Topol as the main weapon system of the next generation of its nuclear deterrent, thereby invalidating one key stipulation of the START II Treaty. Western European capitals have observed and analyzed with great interest the controversy between Defense Minister Marshal Igor Sergeyev and Chief of the General Staff Anatoly Kvashnin. The general conclusion is that Russian strategic forces are headed towards much less overall systems than exist at present. Even though, for the moment, a compromise between Sergeyev's and Kvashnin's preferences appears to have defined by President Putin himself, the tendency towards a minimum deterrence posture is noted with interest. What minimum means, however, is clearly understood to depend on the validity of the ABM Treaty as opposed to the unfettered deployment of an NMD system by the United States. MIRVs as well as highly alert forces and a launch-on-warning doctrine are obvious responses to the latter alternative if defense policy preferences lead Russian considerations in the direction of lower nuclear system numbers, as appears plausible. This would not only mean an undesirable return to a generally more unstable posture, it would not only force Russia to withdraw from (or, in a reciprocal move to US efforts on the ABM Treaty, amend) the START II Treaty, but would put a ceiling under the START process, since an NMD system would certainly force up the minimum numbers the Russian military would see as necessary to guarantee the survivability and effectiveness of its deterrent.

This is the main concern of the Europeans on the arms control front. They are much less taken by hints that Russia may withdraw from the INF Treaty. In fact, these hints are working out in a direction rather counterproductive to Russian interests. European opposition to NMD is almost uniform and – measured by historical NATO standards – strong in the light of the broad US consensus to pursue the project. Threatening withdrawal from the INF Treaty, which is very important and dear to the Europeans, will not have the effect to enhance their opposition, but rather induce them to rally around the NATO leader in seeking for a response. The effect would be similar to the one engendered by then Soviet Foreign Minister Gromyko's threatening rhethorics during the INF controversy in the early eighties. While his pronouncements made antinuclear protesters more nervous for sure, they hardened the determination of even wavering Western European Alliance members to press forward with the deployment. In the current case, apart from the two countries immediately concerned with aspects of the NMD project (see below), European populations are rather unlikely to be mobilized. Touching the INF Treaty would thus not be prudent Russian policy.

The Role of Tactical Missile Defense

The Chinese angle is less frequently explored in the European debate, because security interests are so much focussed on Europe. However, possible Chinese reactions will have a heavy bearing on the arms control consequences. The direction of the Chinese modernization program for the nuclear forces is not exactly known. What is obvious is that China strives to establish a survivable deterrent which it presently does not dispose of. Size (number of systems and warheads) and structure (MIRVed or not) has not been made transparent so far; we don't even know for sure whether the Chinese leadership has finally decided what the force should look like in the end. US NMD deployment make it much more likely that the force will be larger rather than smaller, and carry multiple rather than single warheads. If the modernization program accelerates and enhances, this will inevitably affect Indian, and, by consequence, Pakistani plans. It is also far from clear whether such a development can leave Russian defense planning unaffected. For all the strategic rapprochement between Beijing and Moscow, there remains a residual element of deterrence in their relationship as between the two and the USA. If the Chinese nuclear arsenal grows beyond expectations,

Russia's military leadership may wish at one point to reconsider its own understanding of what minimum deterrence may mean under the circumstances.

Even less attention has been paid to the Chinese concerns about tactical missile defense. There are several reasons for this neglect. First, European security interests are thought to be concentrated in Europe itself and the regions at its periphery. East Asia is far away and perceived much more in economic than in security or military terms.

Second, European defense establishments have themselves a certain interest in exploring tactical, as opposed to strategic, missile defenses. The governments have by now all accepted the possibility of out-of-area missions for international peacekeeping, peace enforcement, and humanitarian intervention (though with different degrees of commitment to undertake such missions under an UN mandate only). This raises the possibility that their forces might be deployed in areas where short-range ballistic missiles pose a real risk. To dispose of mobile defenses against this risk is of interest to military planners. Several European countries are exploring possibilities in this direction and/or have ordered the US Patriot PAC III system that possesses enhanced air defense capabilities against short-range missiles. It should also be noted that countries in the South and Southwest of Europe are presently within the reach of such missiles owned by non-European countries. Their interest in tactical missile defenses is understandably also higher than that of countries in the more benign regions of Northern and Northwestern Europe.

The third reason for the lesser role of the tactical missile defense issue in the European debate is that it is much less controversial between the West and Russia than that of strategic defenses. President Putin himself has proposed collaboration in such a project, and it is obvious that Russia herself may have a security interest to develop a defensive counter to tactical missiles deployed at its periphery. With Russia being a much stronger factor in European security calculations than China, the Europeans are less compelled to be concerned about that issue.

Deterrence Considerations from a European Perspective

One of the arguments frequently heard in the European NMD debate is that extended deterrence by the United States for its European allies might be weakened by creating zones of unequal security within the Atlantic Alliance, with the US safely protected by its missile defense system, and the Europeans out in the cold. Javier Solana, EU spokesman for foreign and defense policy, has made this point repeatedly. Of course, this line of thinking assumes both the continued relevance of extended deterrence in an age with no obvious threats that would provoke a nuclear response, and the functioning of NMD. Neither of these prerequisites can be assumed undisputedly. Nevertheless, it appears to be unconvincing that a US guarantee should be weakened by the protector becoming more invulnerable. In fact, some forty years of NATO nuclear strategy had struggled with the problem of US vulnerability; the problematic of extended deterrence was epitomized in the question whether the USA would 'risk New York for Hamburg'. In other words, extended deterrence should become even stronger if the USA takes lower risks in granting it.

There is a second side of the coin, however. The geopolitical interests of the USA and Europe are not exactly the same. While there is a strong overlap, there are also differences. The Middle East conflict is interpreted differently, and the relationship to Iran, for example, is distinctly different, the Europeans promoting a 'constructive dialogue', and the USA much more skeptical and confrontational. If the USA is isolated from military risks and the Europeans are not, the USA might be tempted to pursue confrontational policies which the Europeans resent, but for which they – as allies – would bear the major risk, if they are within the reach of ballistic missiles of the confronted adversary of the USA. In this sense, unequal security may indeed present risks both for Europeans and for the cohesion of the Atlantic Alliance.

It goes without saying that the two European nuclear weapon states have additional, national concerns about US missile defense plans. The fear that in the long run, a response in kind by Russia and China might devaluate their own, relatively small nuclear deterrents. Of course, given resource asymmetries, it might take a long time for these two countries to erect the equivalent of the planned US NMD. Nevertheless, once the ABM Treaty would be relegated to the *ash heap* of history, the *Damocles Sword* of a Russian or Chinese NMD would hang forever over the French and British nuclear arsenals.

In addition, a shift of the balance from nuclear offense to anti-ballistic missile defense, thought not envisaged by most of the NMD pundits in the USA, might engender the counter-intentional consequence of de-legitimizing nuclear weapons altogether (to recall, this is the hope of the second school of thought that looks at NMD as an instrument of transition into a nuclear-weapon-free world). Legitimizing a nuclear deterrent in the absence of a clear and present threat is difficult enough for French and British nuclear strategists. They do not need at all the additional burden of a defense-dominated strategic discourse.

The European Countries Involved in the First Phases of NMD

Two European countries bear a particularly grave responsibility in the light of current US plans: the United Kingdom and Denmark. For the initial phase of the NMD system, the upgrading of the radar stations at Fylingdales (UK) and Thule (Greenland, belonging to Denmark) are said to be indispensable. The US has already stepped up its efforts to persuade the two partners to go along with Washington's wishes.

Great Britain has a tradition of being very closely allied to the United States. Even with the enhanced willingness by the Labor government to envisage Britain as a real *European power* and its inclination to take the notion of a European defense identity seriously, the *special relationship* with the United States is still appreciated as part of British identity. A London government that would jeopardize this relationship would be under considerable domestic criticism for risking one of the main achievements of the 20th century. On the other hand, there is a strong, though not unanimous, presumption in the government that NMD might not be in the best British interest. Parts of the Ministry of Defense endorse the US plans and the threat assessment behind it; other forces within that ministry believe that, whatever the merits of the project are, keeping close to the USA should override all misgivings the government might have with NMD. The Foreign Office and, it appears, Downing Street see NMD far more critical but wish to escape the hard decision whether or not to permit work at Fylingdales as long as possible. The best hope is still an agreement between the USA and Russia that would make the Fylingdales upgrade palatable to the Russians and thereby save the British government the trouble to be involved in the destruction of the ABM Treaty. There is some fear among Labor Party strategists that the case may lead to a revival of the disarmament movement of the early eighties. Mass demonstration of disarmers directed against governmental policy would not be welcome for the Prime Minister in an upcoming election year.

For Denmark, the situation is equally, if not even more intricate. Greenland is under autonomy, self-administration rule with the exception of foreign and defense policy. There is still the old memory of the nuclear bombs lost over the island in an accident in the sixties, and fresher memories of more recent revelations that – against the express guarantee of the Copenhagen government – US nuclear weapons were stored at the Thule base for many years. The US base there is not the most popular thing in Greenland. Greenlanders, it appears, are in their majority opposed to being implicated in a program that would be damaging to nuclear arms control and disarmament. If the Danish government gives its nod to US plans, a deep rift between Greenland and Denmark must be expected, to the point of mass protests on the island and, possibly, a move towards complete separation.

On the other hand, Denmark is one of the most Atlantist countries in the Western alliance, a fact rarely noted by outside observers. The Danish political elite and the population value the ties to the United States very highly, and would be loathe to take decisions that would

endanger these ties. But on the other hand, the Danes are quite supportive of arms control and disarmament. Denmark is thus in a triple dilemma from which it will not be rescued easily if no agreement between the USA and Russia emerges and the US government presses forward with its NMD project.

The European Dilemma

The British and Danish problems are an exacerbated version of the dilemma all European governments are facing. It is the very fundamental discrepancy between their preferred mode to arrange security relations – by and large the philosophy underlying the first version of thinking about NMD – and the robust rooting of US policy in the third one. This difference, looked upon in a cool mind, appears almost as unbridgeable as the approaches to European security in the pre-1985 East-West conflict. Yet the ideal of a multilateral network of institutions in which the Europeans have invested so much does in fact include the transatlantic ties to the United States as an indispensable ingredient. To find ways to overcome this difference or to go along without hurting one of the two horns of the dilemma much more than anybody in Europe would wish looks almost hopeless. The second NMD view – agreements between Russia and the USA to lead the way to a better and defense-dominant world – supplies elements of hope for a postponing of the moment of truth, a momentary bailing-out from undesirable decisions, but finds very few true believer as a viable long-range strategy.

That the dilemma is acutely felt is shown by some unusual events. That France is very outspoken in its criticism of US plans is almost habitual in matters of security and defense and thus not really new. But that the German Chancellor used the unconventional occasion of his laudation for President Clinton, when the latter was awarded the prestigious Charlemagne Price in the city of Aachen in 2000, to pronounce his serious concerns about NMD was, even in terms of protocol, rather unusual. And that a Select Committee of the Committee on Foreign Affairs of the British House of Commons (in which the Prime Minister's party commands a strong majority) issued a report with an unprecedented critical tone of the US project shows how seriously the issue is seen not only on the Continent, but on the Island as well. The Europeans are stuck in their dilemma: the concerns are voiced, but a way out has not yet been found.

Analysis

INTERNET TECHNOLOGIES AND GEOPOLITICS

by Yulia Kislyak, and Alexei Sokolov

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The concept of the technological security of society has not found a lasting place in literature or general public discussion. The need for such a concept originates from the accelerating pace of technological progress and the unprecedented flow of new technology, which have global effects and significantly complicate the task of defining the place of technology in the modern world. Moreover, the globalization of international processes and the inability to control or, at least, to isolate external influences make it even more critical to clearly understand the role of advanced technology in society, including Russian society.

Today, Internet Technology (IT) presents itself as being endowed with great significance. The breathtaking expansion of computer networks in the last three to four years forces us to stand back and merely watch the speed with which the internet is expanding and conquering new spheres of social life. Thanks to the mass media's attention to this problem, many experts tend to trivialize the essence and importance of the Internet. This trivialization is, in fact, a sort of cognitive and psychological compensation for a lack of understanding of the consequences of this phenomenon. It would be a mistake to limit the Internet to its more well-known capabilities, such as e-mail, network games, personal Web-sites, or the ability to buy books over the Internet.

From the very beginning, the Internet has united two major elements of modern technology: the Net as a global communication infrastructure and the World Wide Web as information cyberspace. It is crucial to realize that the Internet contains

the Net (the physical component allowing the transfer information through a global system of communications) and the World Wide Web (a linguistic and information phenomenon). While integrated in the Internet, the Net and the Web still exist independently and in the foreseeable future will each develop according to its own nature (though the current mutual influence and symbiosis will continue). Computer and communication technologies compose an integral part of the Internet because they determine a country's ability to transfer information through global telecommunication networks and to develop software for the Web. Thus, the Internet is traditionally regarded as both a vital part of the information revolution and its catalyst.

The Net and the Web are extremely important as far as security priorities are concerned and have far-reaching consequences for the geopolitical and technological situation of Russia in particular.

Paradoxically, one component of the Internet (Web) is transforming Russia's geopolitical situation by involving it in global cyberspace, whereas the technical component of the Internet (i.e. broadband communication networks) threaten to leave Russia behind the global information and technological process. These geopolitical aspects of IT will be analyzed below.

If we try to characterize the WWW as a social and technical event of the late 20th century, we should point out the following features of the Web:

- its virtual, interactive, global character;
- its ability to provide instant access to resources;
- its responsibility for the constant increase in the amount of information in use;
- its nominally equal access for users;
- its role in the simplification of the use of resources and minimizing of financial costs;
- the lack of centralized control over the WWW;
- the ex-territoriality of this phenomenon.

The lack of centralized control over resources and virtual and ex-territorial character of the Web affects our vision of space, societal limits, and control over state territory. Such a transformation cannot be explained by the Internet only, since the boundaries of nation states are also being blurred by economic and social changes. However, the WWW is creating a sort of supra-territorial community, where one can enjoy a new way of life, new thinking, produce new models, and create a new commonwealth of information, whose members will be much more loyal to their virtual community rather than to their national community.

This viewpoint can be called radical but one should bear in mind that any citizen of any state is more subject to external influence today than at any earlier time in history. Thereupon, some important issues are emerging: will any society be able to mobilize its inner resources or not in the future? Will individual societies be able to protect their identities and construct independent policies or will they have to take into account external factors?

In other words, the WWW is becoming a decisive factor in formulating new (perhaps, common to all mankind) values and in forming a new virtual community. Obviously, the WWW is democratic by origin: it is not controlled by any state, has no nationality and cannot be localized within territorial limits. It is global by character and is comprised of the resources of separate Web-sites, which can contain all kinds of information. For a number of reasons, there is no centralized control over information disseminated on the Web. The Web has been developed as a resource for free access to and free exchange of information. Moreover, the simplicity of Web-page development, the amount of information available on the Web, and the number of existing sites make it impossible to track and supervise their development.

Ultimately the Web is affecting perceptions of political control over national territory and is transforming the very notion of geopolitics. The emergence of the Internet is making it necessary to revise the definitions of state and social boundaries. At present, it is not a matter of the existence of a global society generated by the accelerated development of the Internet, but the degree

of detriment to nation states and the relevance of the very term "national/multinational state".

An inalienable feature of any modern state (as an instrument for pursuing a policy of territorial integrity and a unique way of social coexistence) is its extreme vulnerability to external influence and aggression, not only on the part of other states (which is typical of previous systems of international relations), but on the part of non-state actors (groups and individuals), who oppose existing regimes. Proximity to borders and the availability of large material, military, and human resources are no longer indispensable for the efficient destruction of the social fabric. The Internet facilitates the penetration of information into any society, while its contents affect all members of this community and complicate the task of governing. One example is the Web-page of the Chechen militants which is spreading information and undermining Russian security in addition to the combatants' military actions. Such information and propaganda interference would have been impossible in the past without enormous investment. However, in the age of the World Wide Web, to derail the normal functioning of a society one needs minimal resources and the source of information, i.e. the Web-site, can be placed in any part of the world having a communication network.

Hence, we arrive at a key problem of determining the scale of influence of the World Wide Web on shaping the geopolitical interests of the state. This is a matter of the information content of such resources. On the surface, the WWW is a democratic forum for the exchange of information and views. The amount of data transferred every minute is so large that it is impossible to imagine how one can deliberately manipulate all this information. Moreover, the Web provides the opportunity to spread any information and to have access to any information without constraints or conditions. To make one's own Web-page, one needs only to register the site, while its design and maintenance are quite affordable to the vast majority of the population. Although it is impossible to assess the scale of the WWW, experts of the *Gartner Group* believe that, in early 1999, there were 2.6 million sites (or about 400 million pages), whose number has doubled annually since 1996.

Further analysis of the WWW leads us to an opposite conclusion. Six out of ten billion visits are accounted for by the 200 largest sites (which make up less than 0.01% of all Web-pages) Thus, on the one hand, the WWW enables everybody to publish any data and to access to it. On the other hand, the rapid expansion of the Internet makes it quite difficult to locate the desired information; this is why the majority of users concentrate on the limited number of well-known Web-sites. According to assessments of *Morgan Stanley Dean Witter*, a leading international investment bank, the number of subscribers to *Amazon.com* amounts to 17 million; *AOL* has 22 million subscribers; *Yahoo* is a pioneer and recognized leader of the WWW and possesses 120 million users all over the world! It is noteworthy that above-mentioned figures include only subscribers, while the number of visitors may sometimes amount to several millions per day. This enables some companies and organizations to reach, via their sites, a large audience. The Internet has an unsurpassable capacity for forming public opinion, spreading information globally, and is more powerful than any mass media. Moreover, information in the Internet is interactive, regularly updated, and can be easily transformed, transferred, saved, and used any time and any place.

Thus emerges the extremely serious problem of the improper and manipulative use of access to and influence over large audiences. In the age of the Internet, it is vitally important to have a trademark which will attract large audience at the owner's Web-site. Not surprisingly the most well-known Internet trademarks in the world are the largest news agencies, such as *CNN, BBC*, *NBC*, and information portals, such as *AOL, Yahoo*, and *Lycos*. The number of visitors of the *CNN* site amounts to 20 million per day! Although the Web was not created to promote any specific ideologies or views (in fact, it was fashioned to pursue the opposite goal), its fragmentation and the large number of sources enables the most powerful of them to become the mass media of a new

generation, combining text, graphics, video, and audio in one. Thus, despite the underlying democratic principles of the Web, one can hardly rule out the possibility of using its resources and potential for achieving the foreign policy goals of the state. The shaping of public opinion through Internet is becoming a key factor in the formation of the strategic priorities of society and affects the interests of all states.

Obviously, different states have different abilities to manipulate and form public opinion via Internet. Nowadays, the USA dominates the Internet and runs ahead of all other states in cyberspace. The USA has, at least, three advantages in defining the contents of the Internet. First, the USA is a pioneer in this area and thanks to its large domestic market and immense financial resources, it will stay the leader of the Web, although in some spheres of technology and information other countries have also managed to attain leading positions. Second, enormous investments by state and private organizations in the development of a US information and technological base and fast US expansion all over the world contribute to the US leading role in this area. Third, the English language is still the main language of the Internet and it is becoming the universal language of communication. The WWW poses a threat to national cultures and languages; other languages will hardly be able to compete with English and IT-development and thus will accelerate the process of globalization with one dominant language and one dominant culture.

This problem of the unraveling of national, cultural, and geopolitical fabric is not specifically Russian. Other societies face the same dilemma of defining new boundaries for their geopolitical arenas. New technologies only make this task more difficult. At the governmental level, Russia is inevitably involved in the process of globalization, including information dissemination. Unfortunately, one cannot control the contents of the WWW and parry its dissemination with an effective strategy against external influence. Anyway, none of the states can prohibit information that may negatively affect national interests. Thus, it is necessary to formulate policy bearing in mind information and technological factors, and taking into full account that cyberspace can be used in the pursuit of a certain foreign policy course aimed against Russian interests. The WWW provides a favorable environment for conducting information wars and interfering in the internal affairs of states because the source of information cannot always be identified or neutralized. Hence, any society is extremely vulnerable to the possible terrorist or hostile activities of groups, communities, individuals, or states.

As we have already mentioned above, the Internet has two components: the WWW as a virtual space where information exchange takes place, and the Net, used to transmit this information. The Internet would be impossible without networks. Technological progress in the area of telecommunications was decisive for the success of the Net and the WWW.

To assess the scale of the on-going communication and technological revolution of the past decade, let us turn to some figures. The market capital of companies whose shares can be acquired from the *Nasdaq*, leading US stock exchange specializing on the high-tech sectors of the economy, amounted in 1989-1999 from $386 billion to $5 trillion. The volume of the Internet economy is the following: in early April 2000, the market capital of 350 Internet companies in the USA exceeded $1.3 trillion dollars. *AOL* itself, which became public company in 1992, is worth $162 billion. As for the 60 European Internet companies, they accounted for $17 billion of capital in 1999.

Access to Internet resources is possible due to the existence of telecommunication networks, which connect separate computers. However, nowadays, we are witnessing a sweeping development of new technologies, which enable users to access the WWW through cellular phones and digital TV. Computers are losing the role of the exclusive means to access information on the Web, which does not diminish the importance of communication networks in developing Internet technologies.

At present, the Internet is not only a factor of global sociopolitical development, but a giant and quickly developing economy. The size of

the new economy can be hardly overestimated. Let us analyze some key parameters of e-commerce and the Internet on the whole.

Let us start with the population of the Internet. Nowadays, according to *IDC* assessments, the number of users amounts to more than 250 million people all over the world: 100 million in the USA (40%), 60 million in Europe (24%; 6.7 million in Eastern Europe) and 90 million in the rest of the world (36%). In the next few years, growth in access to the Internet in Europe will run ahead of the USA and, by 2002, the number of users will reach 400 million throughout the world: 150 million in the USA, 100 million in Europe (12 million in Eastern Europe), and 150 million in other parts of the world. Obviously, the lion's share of users will come from the USA and Europe. By 2002, 50% of US households will possess personal computers and 68% will have access to the Internet. In Europe, by 2003, the number of households with access to the Internet will amount to 30%.

There is no doubt that the Internet market has a huge potential. The amount of e-commerce will reach $1.3 trillion in 2003 (1/3 of it in the USA) and about 180 million people all over the world will buy goods via Internet. In the USA business-to-business sales may reach $1.4 trillion in 2003 or about 10% of the US GDP. It is noteworthy that the expansion of cellular phones will accelerate and, by 2003, about 80% of the Western European population and 52% of the US population will have access to the Internet through third generation mobile communications – technology to be developed and deployed by 2002.

Thus, e-commerce in the next few years will become a core component of business activities. Nonparticipation in this global process would mean technological and social backwardness, and would force the non-participant to remain outside the boarders of modern technology and economic activity. Taking into account the commercial and economic potential of the Internet, state and private capital investment in the development of Internet business and related technologies is a confirmation that the information serves the market capitalization of Internet companies. The Internet changes our perception of time and space. The pace of the introduction of new ideas and technologies and the globalization of these processes are impressive.

Due to the transformation of economic and business life, social and political life will inevitably change along with the balance of power within the world system. Access to advanced technologies and their effective application will determine the place of states in world politics. The importance of the Internet for international political and economic relations is understood; thus many societies are trying to boost IT development and replicate the US experience by creating their *Silicone Valleys* (centers of scientific and economic growth on the basis of new generation technologies) and promoting the *Silicone* economy. Beside the USA, a number of countries are taking active steps in this direction: Israel is successfully developing its analogue of the *Silicone Valley*; Great Britain is implementing a program aimed at creating a favorable investment climate for IT-development and making Britain a would be world leader of IT and e-business; Finland is an indisputable leader in the area of mobile communications; India is one of the leaders of the software market. It is worth remembering that, in the 20th century, the USSR has already missed one technological revolution (in computer equipment) and Russia's technological short-sightedness can dramatically change the position of the state on the world economic and political arena.

The Internet is not only a big phonebook or reference book where one can search and find necessary information. It is a new business model. The Internet promotes a new economy with different priorities for economic and social development, and a new industry structure. By creating vertical markets of goods and services, the Internet provides for new standards of competition, profits and cost-efficiency, meaning that the majority of Russian companies will be noncompetitive and will be left behind by the new economy, having negative consequences for the Russian economy in general.

Let us return to the geopolitical importance of the Internet and communication networks. As we have already mentioned above, information transfers in the Web will require physical communication lines to transmit data. Existing networks are not adaptable to modern technological requirements and were established in the time of analog technology used to transmit voice but not video and graphics. One the major factors impeding IT-development is the lack of broadband networks.

The introduction of a new generation of digital broadband networks will give impetus to a new stage of Internet revolution, since their speed will enable the world to develop and use the software and production/services of the new generation of technology. This will require the development of new broadband networks with even higher capacities. The Internet will feel the lack of such networks in the near future. Let us note that broadband networks are normally associated with fiber-optic networks. The problem of supporting the Internet with the required level of quality and capacity emerges because it is quite expensive to lay the cable. There are serious technological problems concerning the efficient use of fiber-optic cables since modern methods of data transfer inefficiently use the capacity of communication lines, whereas packet switching and the use of Internet Protocol (IP) do not meet the modern requirements of communication and are not reliable. However, leading global communication companies are engaged in a technological race, competing for new technologies and broadband networks, as well the construction of a global communication backbone.

The construction of a communication backbone connecting world centers and continents will supply the infrastructure required for Internet development. Nowadays, we are dealing with creating the infrastructure for a new economic and social reality. Access to such facilities will determine the level of the technological and economic development of any society. Obviously, the construction of such an infrastructure will resemble the construction of the infrastructure for railway, sea, and air communications that ensured the industrial and scientific revolutions of the 19th and the 20th centuries. The cost of developing broadband networks is rather high and only a few states can afford them. Local and regional networks have been developed in a number of states, whereas a global infrastructure is being constructed by US companies only and is aimed at connecting the USA with Europe and Asia. The USA is the major investor and US corporations are leading in installing global broadband networks. Obviously, such undertakings are connected to a high degree of commercial risk. However, the potential gains justify these risks. In 2005, 65% of Internet users in the USA will connect to the net through broadband networks. Europe is lagging behind the USA and, according to *CSFB* experts, only 35% of European connections will be via broadband networks by 2010 and the European broadband market will involve $210 billion.

Unlike US companies, European companies are not as active in building the backbone for new generation communications. This is accounted for by a need for substantial investments. For instance, the US company *Level 3* will spend $13 billion in five years to develop its global broadband network (it is to be constructed by late 2001). *Level 3* has to speed up the development of the infrastructure to benefit from other pioneer and run ahead business rivals.

The development of communications is still a geopolitical issue, since it will result in the redistribution of power among world political and economic centers. Access to broadband networks will determine the distribution of key information resources, the level of economic and technological development, and even control over information transmitted through this net. Control over broadband networks will lead to control over the Internet and its resources.

At present, three large US companies are involved in the development of broadband networks - *Qwest Communications/US West/Global Crossing, IXC (Broadwing) Communications,* and *Level 3 Communications*. Besides, three other companies are building national and regional broadbands: *Enron*,

Williams Communications, and *Metromedia Fiber Networks*. If finished, the construction will result in more than 200,000 miles of networks (excluding local networks and the Transatlantic cable laid by *Level 3*). Moreover, *Enron*, *Williams Communications*, *Metromedia Fiber Networks,* and *Qwest Communications* will have about 100,000 miles of broadband networks in the USA. Thus, in the next few years, e-commerce will receive a global communication infrastructure with a high capacity.

It is curious the way networks are being built. Their geographical distribution demonstrates a significant imbalance: they connect only a limited number of large centers in the USA (where the density of networks is rather high), Europe, and Asia-Pacific. One may presume that the exclusion of Russia from this network can be accounted for by investors' unwillingness to invest money in this region, which will have negative consequences for Russia's technological and economic development.

It is noteworthy that the architecture of the *Level 3* broadband network provides for replacing fiber-optic cable as new technologies emerge. Thus, the company ensures the ability to constantly upgrade the technological basis of the infrastructure. European companies have not yet implemented such large-scale projects to develop broadband infrastructure, although *British Telecom* and US *AT&T* are providing access to broadband networks in 12 European, 5 US, and 3 Asian cities.

In fact, there is a danger that the Russian society will be excluded from the developing new generation information and Internet technologies and hence, from global markets and the Internet economy. Thus, Russia will have a limited ability to influence global processes and use new technologies following the current stage of the Internet revolution. One may assume that Russia will not be satisfied with the role of a second-rate technological power, since this will affect the geopolitical interests of the state. However, Russia faces the difficult task of finding itself among the states that have failed to mobilize their resources to develop an infrastructure and advanced technologies and now lag behind the technological leaders (and this backwardness seems to be eternal). The paradox of the Internet is that along with the minimal resources necessary to access and use the Web, the very infrastructure of communication networks requires substantial financial input. This is why the Internet is more likely to widen the gap in the economic and technological development of states, between those who have and do not have access to networks. Russia's position will depend on its investment policy in the foreseeable future. Taking into account that scientific and technological progress will go forward with an even more rapid pace and new technologies will be widely and promptly introduced, it will be difficult to catch up with the global leaders.

The political course of the state should take into account threats to its geopolitical stability posed by the changing role of technology. We are witnessing fundamental social changes caused by the Internet revolution and we should realize that strategic decisions taken today will determine the state geopolitical and strategic situation in the near future.

The Internet phenomenon will affect many aspects of social life; thus, policymaking in the area of technological development should bear in mind the correlation between advanced technology and the geopolitical priorities of the state. Although the infrastructure and contents of the Internet can be used to exert pressure or interfere in the internal affairs of states, as well as to pursue hostile foreign policy, Russia should not refuse to assimilate to the global economic and technological processes. The price of self-isolation, if such integral steps are not taken, would be the loss of opportunities to access advanced technologies, which would inevitably result in economic, technological, and social backwardness. On the contrary, Russia's efforts should be aimed at formulating a strategy towards the Internet, which will enable Russia to use its existing limited financial resources to achieve and maintain technological parity with the leading Internet powers.

Commentary

IAEA ACTIVITIES IN THE LIGHT OF THE NPT REVIEW CONFERENCE[1]

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Introduction

"*Five Atom Powers Agree to Scrap Arms*" was the heading the *International Herald Tribune* used to report on the outcome of the 6th Review Conference of the Non-Proliferation Treaty[2].

Newspaper headlines are often misleading. Nuclear weapons will not be abolished as a result of this Review Conference. The often quoted 'unequivocal undertaking by the nuclear weapon States to accomplish the total elimination of their nuclear arsenals leading to nuclear disarmament' ends with the phrase 'to which all States Parties are committed under article VI [of the Treaty]'. And indeed in article VI of the Treaty the parties already commit themselves to a 'cessation of the nuclear arms race at an early date and to nuclear disarmament'.

Irrespective of how much stronger the new formulation is compared with the original Treaty text, the outcome of the Review Conference is important for a number of reasons:

- *The surprising fact that consensus proved possible*. Agreement about a substantive Final Document appeared virtually impossible. There was the rather meager disarmament record of the last few years and the lack of agreement how to assess that record. There was the probable lack of agreement about further disarmament steps. There was the damage to the nonproliferation regime caused by the overt nuclear weapons activities of certain *threshold* states and the inability of the international community to entice these states to join the NPT consensus. In 1995 not only had the disarmament issues prevented an agreed review document, but also non-compliance issues like Iraq and North Korea had not been resolved. And there was the difficulty that references to nuclear power and international cooperation in nuclear matters would be now at least as sensitive as five years ago. After the Review Conferences of 1990 and 1995, which ended without agreement on a Final Document (although of course the 1995 Conference ended with an impressive package: the decisions on the indefinite extension, the "*Principles and Objectives for Nuclear Nonproliferation and Disarmament*", and the *Strengthened Review Process*, as well as the Middle East resolution), it seemed that the burden of history was becoming too heavy for an agreed substantive conclusion of the review of the operation of the Treaty during such Conferences.

- *The fact that the dominating force in the Conference was the political will to make the conference a success.* Apparently the desire to strengthen the non-proliferation regime and to reaffirm its basic tenets overcame the existing disagreements over the priorities to be placed on various NPT issues. Clearly some issues could not be solved and many paragraphs in the Final Document are ambiguous and/or have a compromise character. In some ways the Review Conference was more a truce than a resolution.

- *The fact that the outcome of the Review Conference has created a better climate for dialogue and cooperation*. This consensus opens the way to build on the principles and steps agreed upon in the Final Document and translate them into specific actions. However, these actions will in no way be the automatic consequence of the Review Conference and the momentum generated by the Conference need to be persistently

sustained in order to make tangible progress. The most valuable result of the Review Conference is not the Final Document as a product, but the consensus as a stimulus for a process.

- *The fact that the outcome of the Review Conference charts a realistic course, with many benchmarks to assess progress by 2005.* Many readers of the Final Document who were not present at the Review Conference may read the text as a collection of paragraphs that 'note' certain developments or 'reaffirm' previous principles or positions. Nevertheless there are quite a number of action oriented formulations that should be looked at again carefully in 2005. Most of them appear realistic and feasible. There is probably a link between that character and the fact that before the Conference expectations about a successful outcome were low.

Impact of the Conference

Of course, the IAEA was pleased with, as the IAEA Director General, Mohamed ElBaradei, indicated in the Board of Governors meeting in June, ' the clear and explicit vote of confidence in the IAEA and its contribution to sustainable development, nonproliferation and safety'. More than half of the paragraphs of the Final Document refer to the IAEA one way or the other, and generally in a positive way.

During the 44th General Conference of the IAEA in September 2000 Australia introduced a resolution that expressed Member States' confidence in the work of the Agency. It was adopted by consensus, but only after the original text had been watered down. IAEA Member States who are non-parties to the Treaty argued that the IAEA Statute and its agreed work program and not the NPT Review Conference determine which activities should be carried out in the coming years. At the IAEA General Conference a resolution tabled by the EU on strengthened safeguards also referred to the outcome of the Review Conference. It too was adopted by consensus. The debate on this resolution made clear that certain NPT States parties will want to use the resolution to promote particular issues dealt with during the Review Conference. At the same time non-parties to the Treaty will want to make sure that the references to the NPT cannot be construed as accepting any part of the NPT.

Safeguards

The work of the IAEA is connected with nearly all articles of the NPT, but Article III has a special place because it mentions the IAEA as the organization that is to apply safeguards that should verify the fulfillment of the obligations of the parties under the NPT. The Review Conference recognized that IAEA safeguards are a fundamental pillar of the nonproliferation regime. As Ambassador Norman Wulf recently observed: without safeguards, the NPT would be the proverbial 'piece of paper'.

The Review Conference didn't hide the fact that still 51 NPT parties had no safeguards agreement in force. Indeed the Final Document contained an explicit list of those states. As the Director General of the IAEA said in his statement to the Conference, 'the existence of a safeguards agreement in force is a *conditio sine qua non* for the Agency's ability to verify compliance by a State of its nonproliferation obligations.' Whether a state has known nuclear activities or not (as far as we know most of those currently without safeguards agreements don't) is in principle not relevant.

The Review Conference might have had some positive effect on the states that have still no safeguards agreements. To be fair, I should add that not all 51 states have neglected their obligations for nearly 30 years. First of all, a number of these states have already negotiated a text with the IAEA Secretariat and had it approved by the Board. Some of them have even signed their safeguards agreement, but they have never brought it into force. Secondly, some of the states on the list are relatively new states. The former Yugoslav Republic of Macedonia is, for example, a party in the second category. In a recent development the Macedonian draft safeguards agreement was approved by the September meeting of the IAEA Board of Governors. That same meeting of the Board also approved the draft safeguards

agreement with Yemen. Both agreements were signed a few days later.

One of the interesting questions before the Review Conference was: what would be the terms in which the Review Conference would acknowledge the existence of the new Protocol Additional to safeguards agreements, negotiated in Vienna after the 1995 Review and Extension Conference. This new protocol was the result of the Agency's *Program 93+2*, which had been started within the IAEA Secretariat in 1993 after the discovery of Iraq's clandestine nuclear program, taking into account the challenges and difficulties encountered in other situations as well (DPRK, South Africa, successor states of the Soviet Union). One of the goals of the program was to strengthen the efficiency and effectiveness of IAEA safeguards by focusing on possible undeclared nuclear material and activities. One of the conclusions was that the Agency needed more information from states about their nuclear and nuclear-related activities. Another conclusion was that broader access in states was required to verify that information. In 1995 the Board concluded that the Agency would need more authority to request such information from States and obtain such complementary access. This led in 1997 to the adoption of the so-called Model Additional Protocol. For Parties to the Non-Proliferation Treaty this Protocol is additional to their safeguards agreement under the Treaty.

An important paragraph in the Final Document in this regard is paragraph 20 in the review of Article III. In it, the Conference recognizes that comprehensive safeguards agreements under the NPT 'have been successful in their main focus of providing assurance regarding declared nuclear material and have also provided a *limited* level of assurance regarding the absence of undeclared nuclear material and activities.' Then, the Conference notes that the Additional Protocol will 'provide increased confidence about the absence of undeclared nuclear material and activities in a State as a whole' and that comprehensive safeguards agreements and Additional Protocols, once concluded 'have to be read and interpreted as one agreement.' In paragraph 45 of the same section of the Final Document the Conference 'welcomes the fact that since May 1997, the IAEA Board of Governors has approved additional protocols with 43 States and that 12 of those additional protocols are currently being implemented.' The Conference 'encourages all States parties, in particular those States parties with substantial nuclear programs, to conclude additional protocols as soon as possible.' The optimum outcome of the Review Conference would have been endorsement that a comprehensive safeguards agreement and an Additional Protocol fulfil states' commitments under Article III of the Treaty, but this proved too much for the States Parties at this time.

Is there any progress to be reported on this score since the Review Conference? Not much. Five new draft Additional Protocols were approved by the June Board, but those could not be attributed to an impetus from the Review Conference. Only one more Protocol was approved by the Board in September: Bangladesh. So the score is 49 Additional Protocols approved by the Board with non-nuclear weapon states, parties to the NPT. At present 16 of those are in force and 1 is provisionally being applied. In addition, all 5 nuclear weapon states, parties to the Treaty, have signed an Additional Protocol. They all have a more limited character. In the Russian Protocol Russia promises only to provide information about the different forms of nuclear cooperation with non-nuclear weapon states. The text does not provide for complementary access for IAEA inspectors or for significantly more information on Russia's domestic civilian nuclear activities. The Russian Additional Protocol has not been ratified yet.

Paragraph 47 of the Final Document is related to this rather slow pace of signing up to Additional Protocols. It recommends that 'the Director General and the IAEA Member States consider ways and means, which could include a possible plan of action, to promote and facilitate the conclusion and entry into force of [such] safeguards agreements and additional protocols, including, for example, specific measures to assist States with less experience in nuclear activities to implement legal requirements.' During the last IAEA General Conference a

resolution was adopted on strengthening safeguards which refers to this possible plan of action. It recommends that the IAEA Director General, the Board of Governors and the Member States implement the following elements of a plan of action:

'(i) Intensified efforts by the Director General to conclude safeguards agreements and additional protocols, especially with those States having substantial nuclear activities under their jurisdiction,
'(ii) Increased bilateral and regional consultations among Member States at both technical and political levels, with a view to promoting the domestic process to conclude safeguards agreements and additional protocols,
'(iii) Assistance by the IAEA and Member States to other States by providing their knowledge and technical expertise necessary to conclude and implement safeguards agreements and additional protocols,
'(iv) Reinforced co-ordination between Member States and the IAEA Secretariat in their efforts to promote the conclusion of safeguards agreements and additional protocols,
'(v) Consideration by Member States, subject to progress made under (i) to (iv) above, of further steps to promote the safeguards agreements and protocols, including, *inter alia*, an appropriate international meeting.'

The IAEA Secretariat - which always had its own action plan to stimulates the conclusion of safeguards agreements and Additional Protocols - will adapt its action plan to the formulations in the resolution.

It has never been the intention that the new safeguards measures - the ones under the Additional Protocol or earlier strengthening measures - would just be added to the classical measures. Once we would be confident that there would be no diversion of declared nuclear material and that there would be no undeclared nuclear material or activities, the classical measures might be reduced. As paragraph 21 of the Final Document says, the aim would be to optimize the combination of all safeguards measures - old and new - to meet our objectives with maximum effectiveness and efficiency within available resources. This process of integration of old and new is well underway and we expect to have our conceptual framework ready by the end of next year.

Regional Issues
The issue of the application of full-scope safeguards in the DPRK did not receive much attention during the Review Conference. The central problem is that the IAEA cannot draw the conclusion that there has been no diversion of nuclear material in the past, in other words that all nuclear material has been declared to the IAEA. Since the Review Conference political changes have taken place in the Korean peninsula in rapid succession, and the IAEA hopes that those changes will also facilitate a normalization of our relations with the DPRK. The *Light Water Reactor* project is now underway. Before 'key nuclear components' of these reactors can be delivered, the DPRK must - under the *Agreed Framework* between the DPRK and the United States of America - 'come into full compliance with its safeguards agreement'. To make our best verification assessment whether or not the DPRK is indeed in compliance, we would need between three and four years, depending on the cooperation of the DPRK.

The question of Iraqi compliance, on the other hand, was at the center of the negotiations during the last few days of the Conference. The result can be found in the Final Document. For the Agency it remains of crucial importance to return to Iraq as soon as possible, if it is to fulfil the mandate entrusted to it under the Security Council resolutions and to provide the assurances sought by the Council.

Peaceful Nuclear Cooperation
A wide variety of issues regarding the peaceful uses of nuclear energy was discussed at the Review Conference. What I said about the Review Conference giving a vote of confidence to the different aspects of the work of the Agency applies here as well. As before the Conference was cautious in mentioning nuclear power. Much attention was devoted to nuclear safety issues, including transport safety, to liability and to radioactive waste management.

Since the Review Conference several

important developments have taken place. President Putin's initiative is one of them. During the *Millennium Summit* he called upon all countries to join an international project under the auspices of the IAEA, to develop new technology that could generate nuclear power without requiring or producing weapons-grade material, and in parallel to focus on emerging technology to burn long lived wastes from spent fuel and weapons stockpiles. The nonproliferation relevance of such a project would be clear. In this context, I would like to mention the IAEA's intention to set up a Task Force on innovative reactors and fuel cycles.

Nuclear Arms Control and Disarmament

The role of the IAEA in the realm of Article VI has traditionally been less pronounced than with regard to Article III and IV. Nevertheless, its involvement has slowly grown since the demise of the Cold War. Large quantities of nuclear material stemming from states' nuclear weapon programs were considered 'excess material' by the United States and the Russian Federation. Since 1996, both States have been negotiated with the IAEA about possible verification arrangements for this material. It is generally referred to as the *Trilateral Initiative*, even though the three sides of the triangle are not equal.

There is one principle, mentioned repeatedly in the Final Document, that I should mention here, and that is the principle of *irreversibility*. First, the Conference agreed that the principle of irreversibility should apply to nuclear disarmament, nuclear and other related arms control and reduction measures. Secondly, it underlined the importance of verifying that the transfer of *excess* nuclear material from weapons programs to peaceful purposes should be irreversible. To my mind, the two aspects are linked, the second being a practical translation of the first.

The negotiations under the *Trilateral Initiative* had already been intensified before the Review Conference with a view to making progress before the Conference. While the negotiations could not be completed before the Conference, the pace has remained high, in line with the Final Document's encouragement to the Parties to complete and implement the Initiative. The result is that work on a (model) verification agreement is nearing completion and that technical work for making verification arrangements in specific facilities is well advanced. An essential requirement for these arrangements is that they must allow the IAEA to draw credible and independent conclusions, but in such a way that IAEA inspectors do not gain access to information relating to the design or manufacture of nuclear weapons.

The substantial progress in the *Trilateral Initiative* negotiations is one of the welcome developments since the Review Conference. Another positive development is the signature, on 1 September, of the Plutonium Management and Disposition Agreement (PMDA) between the Russian Federation and the United States. The signature follows the announcement during President Clinton's visit to Moscow in June 2000, that both sides had completed their negotiations. The agreement provides for the safe, transparent and irreversible disposition of 68 metric tons of weapons-grade plutonium, 34 tons each. The agreement provides for IAEA verification. We are confident that with the work under the *Trilateral Initiative* we have already - or nearly have - an appropriate umbrella for our verification role under the PMDA.

The value of transferring irreversibly nuclear material from nuclear weapons programs to civil purposes would increase with an agreement to ban the production of all nuclear material for weapons-purposes. This ban is on the agenda of the Conference on Disarmament, but the Review Conference has not led to any breakthrough in the stalemate about the CD's program of work. This is one of the disappointments of the period since the Review Conference. The IAEA remains ready to assist the Conference of Disarmament with its work, if requested.

There are some other, positive developments in the area of nuclear arms control and disarmament since the Review Conference, like the Memorandum of Understanding between the United States and the Russian Federation on 'the establishment of a Joint Center for the exchange of data from early-

warning systems and notifications of missile launchers'. Other relevant developments are Russian proposals, following the Russian START II ratification, to cut down further the number of strategic warheads to 1,500 and unilateral Russian steps in that direction.

Conclusion

What is the status of the regime after the Review Conference? The outcome of the Review Conference has been an important step in the dynamic process of nuclear nonproliferation and nuclear disarmament, a step that has improved the climate for dialogue and negotiations. Both by the concrete result and by the impact that has had on the climate, the regime has been strengthened. Some follow-up has already taken place, but in some areas developments have fallen short of expectations. This applies to Geneva (the Conference on Disarmament) and to some extent to Vienna. What counts is to translate the conclusions of the Review Conference into specific action with a view to further strengthening the nuclear nonproliferation and disarmament regime.

Given the many positive references to its work in the Final Document the IAEA will continue with its many activities. It will take into account the recommendations of the Review Conference, although its Statute will remain central to its work program. It stands ready to accept new responsibilities as the process of nuclear disarmament evolves.

Let me conclude by saying that the regime for curbing the spread of nuclear weapons can never be taken for granted. The attraction of acquiring such powerful weaponry will always be there. In as far as there appears to be a equilibrium between nuclear weapon states and non-nuclear-weapon states, that equilibrium is inherently unstable. Once the ball starts rolling down the hill, it will continue to roll down. It requires a collective effort to prevent that from happening.

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[1] This is an abridged version of Piet de Klerk's speech at the Moscow International Nonproliferation Conference (October 6-7, 2000) held by the PIR Center and the Carnegie Endowment for International Peace.

[2] *International Herald Tribune*, May 22, 2000.

Commentary

PUTIN'S INITIATIVE AT THE UN *MILLENIUM SUMMIT*

by Roland Timerbaev,
PIR Senior Advisor,
and Dmitry Kovchegin,
PIR Junior Research Associate

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On September 6, 2000, President Putin set forth the following initiative at the UN *Millenium Summit*:

'We should reliably block the ways for spreading nuclear weapons. We can achieve this in several ways, among them, excluding the usage of enriched uranium and pure plutonium in world atomic energy production.'

Technically this is quite possible to implement. But far more important is that the incineration of plutonium and other radioactive elements creates a necessity for making a final decision concerning the problem of radioactive residue. It opens fundamentally new perspectives for secure life on the planet.

'Along these lines, Russia proposes to work out and put into practice a relevant program with the participation of the IAEA.'

The Russian initiative got a lively response from the UN and IAEA member states. Several weeks later, at the annual session of the IAEA General Conference, heads of some delegations, including the Indian envoy, endorsed Putin's motion. Chairman of the Indian Atomic Energy Commission Rajagopala Chidambaram maintained that the IAEA, with its comprehensive membership, including developing countries, bore the collective responsibility for finding technological solutions to such problems. He also emphasized that India, always did its part in supporting such efforts and would actively participate in such initiatives.

IAEA Director General Mohamed ElBaradei also welcomed the Russian proposal, 'I note with interest the initiative of President Putin at the *Millenium Summit*, in which he called upon all countries to join an international project under the auspices of the IAEA, to develop new technology that could generate nuclear power without requiring or producing weapons-grade material, and in parallel to focus on emerging technology to burn long-lived wastes from spent fuel and weapons stockpiles. If requested, the Agency is ready to offer its support in coordinating this project…'

The General Conference adopted, by consensus, a resolution that was sponsored by Russia and many other states, including developing nations. The resolution proposed that the member states concerned 'combine their efforts under the aegis of the Agency in considering the issues of the nuclear fuel cycle, in particular by examining innovative and proliferation-resistant nuclear technology'.

On October 5, 2000, in Bombay, Vladimir Putin addressed experts and researchers of the Indian Nuclear Center and reiterated Russia's proposal to implement, under the auspices of the IAEA, an international project 'to provide for the energy supply for mankind and sustainable economic growth while lowering [*sic!* - **Ed**.] the barrier for the proliferation of nuclear weapons and ensuring the environmental recovery of the Earth.' The Russian president pointed out that India had substantial experience in the development of reactor technologies and might become a leading participant in this project. Putin continued by saying that both Russia and India have develop closed nuclear fuel cycles and thus it would be natural to combine their efforts in this area. Vladimir Putin urged India to join the CTBT and the NPT and stressed that 'we realize that this issue requires political decision making while taking into account the national interests and social understanding of advantages of these steps.'

The success of this project will chiefly depend on the activities of the Task Force for Innovative Nuclear Reactors and Fuel Cycles, which will begin work this year, and on scientific and material contribution of the states which have these capabilities.

What are the Russian arguments in favor of the project? According to Minatom's documents disseminated at the Moscow International Nonproliferation Conference held by the PIR Center and the Moscow Carnegie Center on October 6-7, 2000, the Russian initiative is a political conclusion drawn from a thorough analysis of the situation in the world's nuclear power sector in the context of two closely related and vitally important aspects, i.e., long-term safe and environmentally acceptable energy supply and prevention of nuclear technology for the creation of nuclear weapons. The documents state Russia's intention 'to develop a new generation of fast neutron reactors which will play a main role in the large-scale growth of nuclear power. In the distant future, when cheap uranium is exhausted, this technology will allow the conversion of thermal reactors to those operating on a thorium-uranium cycle. At the same time, it should be kept in mind that this process will take several decades during which the nuclear power may continue using light-water reactors fueled by low-enriched uranium from weapons stockpiles.'

As far as *pure* plutonium is concerned, the initiative indicates that Russia intends on 'developing a fast neutron reactor without a uranium blanket and using nuclear fuel of equilibrium composition which will be reprocessed after in-pile irradiation without having separated the pure plutonium.'

The Minatom emphasized that it foresees a need for 'safe energy production and the use of waste from the closed fuel cycle involving in-pile burning of long-lived actinides and fission products and radiation-equivalent radioactive waste disposal without disturbing the natural radiation balance.' The Minatom pointed out that 'economic competitiveness is due to low costs, fuel breeding, high efficiency of the thermodynamic cycle, and the resolution of the NPP safety problems without adding to the complexity of plant design or imposing extreme requirements upon equipment and personnel.'

Russian R&D activities have demonstrated the realistic character of such an approach. 'At this stage, Russia is prepared to make its contribution by offering to the world community its developments pertaining to the nuclear fuel cycle with natural safety features, which will serve the technological strengthening of the nonproliferation regime.' As a first step, Russia has supported the IAEA initiative to establish a Task Force for Innovative Nuclear Reactors and Fuel Cycles, which will analyze, choose, and develop

perspective nuclear technologies. At some later point, if an agreement is reached between the interested countries, it may be possible to undertake a joint demonstration project.

At the press conference on October 11, 2000, Russian Minister of Atomic Energy Yevgeny Adamov argued that Russian experts working for the Task Force would not rely on any specific reactor model. They will proceed from required user characteristics of the prospective nuclear power plant and fuel cycle. The most important factors will be:

- unlimited fuel resources due to the efficient use of natural uranium and, subsequently, thorium;
- the elimination of severe accidents, resulting from equipment failures, human errors, and external conditions, which release radiation and require the evacuation of the population which could be achieved primarily due to the natural properties and behavior inherent in nuclear reactors and their components (natural safety);
- the environmentally safe energy production and waste management in a closed fuel cycle involving in-pile burning of long-lived actinides and fission products and radiation-equivalent radioactive waste disposal without disturbing the natural radiation balance;
- the barring of the nuclear weapons proliferation pathway associated with nuclear power by phasing out the technologies of plutonium separation from spent fuel and uranium enrichment and by physically protecting nuclear fuel against theft;
- the economic competitiveness due to low costs, fuel breeding, high efficiency of the thermodynamic cycle, and the resolution of the NPP safety problems without adding to the complexity of plant design or imposing extreme requirements upon equipment and personnel.

At the same time, the recently published conceptual documents of the Russian nuclear industry and other official statements cause us to presume that Minatom will prefer the BREST reactor model (Fast Reactor with Lead Coolant), which, as far as test and research results indicate, meets the aforementioned standards. One of the key problems concerning this reactor is lack of a completed design for a corresponding nuclear fuel cycle. This is true with respect to some technological aspects and new organization of the nuclear industry.

The nuclear fuel cycle enterprises are planned to be constructed close to nuclear power plants, which will significantly diminish the proliferation risks by decreasing the amount of transported nuclear material. Russia has two possible sites for such *nuclear islands*: the Southern Urals (PO *Mayak* and *Beloyarskaya* NPP) and Zheleznogorsk (*Mining Chemical Combine*).

However, such an approach has some inherent contradictions. If applied it will enable the large-scale development of the nuclear energy sector only in conjunction with an increase in the number of nuclear fuel cycle facilities. This increases the number of potentially proliferation-sensitive plants and is quite questionable from the point of cost-efficiency.

If Russia relies on only one project, this may limit its international cooperation opportunities in developing a nuclear energy sector and hence, will deprive the Russian nuclear industry of possible investments. Russia should take part in constructive discussion about other projects as well.

In his speech at the IAEA General Conference Mohamed ElBaradei maintained that the Task Force 'will assess future energy and technology demands and identify the technical reactor and fuel cycle features that could meet these demands.' One may presume that the Task Force will consider various concepts of innovative nuclear technologies set forth by member states.

The IAEA Director General also touched upon the problem of developing small and medium-size reactors that would be convenient for electricity production and heating in distant areas and states possessing low-power electricity grids. Nowadays, such reactors are being developed. For instance, in South Africa the international consortium is working on a 110-MW pebble bed modular gas cooled reactor – PBMR. Small and medium-based reactors are being developed or constructed in Argentina, China, Japan, and South Korea. US Secretary of Energy Bill Richardson informed the IAEA General Conference of his initiative to design new, economical, safe, proliferation-resistant reactors which will provide for the long-term storage of spent fuel and radioactive waste. He

also mentioned the US-French agreement on developing corresponding reactor technology.

Obviously, the success of an international innovative technology development project proposed by Russia will depend greatly on the participation of developed nations, which have rich experience in developing reactor technologies and NPP construction. It is also necessary to bear in mind the acceptability of new technologies and reactor sites for the general public and population of the states concerned.

The IAEA General Conference emphasized that, although 17 states produce 25% or more of their electricity with the help of NPPs, nowadays, there is no international consensus concerning the future role of nuclear energy. According to the *2000 World Energy Council Statement*, by 2020 the electricity production will chiefly rely on fossil fuel and large hydroelectric power stations (special focus will be placed on gas and environmentally safe systems of fossil fuel management). However, the world community, with its growing demands, cannot rely on these energy sources, taking into account that, by 2020, global population will have increased by two billion people. Authors of the Statement conclude that nuclear energy production (share of electricity produced by the nuclear energy sector is decreasing in the world) will stabilize and has prospects for further growth. Along these lines, it is necessary to encourage parallel efforts to develop naturally safe and affordable nuclear technologies.

It is noteworthy that the Russian initiative has coincided with the world oil crisis and sharp growth in oil prices. At the same time, some experts believe that *Gazprom* export ambitions are also increasing. These factors may strengthen Minatom's positions in Russia and abroad.

Estimates of the World Energy Council based on the systematic analysis of global energy demand and existing and prospective technologies to meet this demand indicate the urgent need for adequate international measures to develop new approaches to ensure energy supply for the sustainable development of mankind, to resolve in radical way the problems of proliferation of nuclear weapons, and to ensure the environmental recovery of the planet.

Viewpoint

SOME REMARKS ON THE ROLE OF NUCLEAR ENERGY TODAY[1]

by Dr. Fidel Castro Diaz-Balart, Cuban Academy of Sciences

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The emergence and expansion of nuclear energy as one of the most important scientific and technological milestones of the 20th century could not fail to attract the attention of the public at large. Public opinion will continue to exert a decisive influence on the development of the nuclear field on a worldwide scale.

For a large number of participants, proponents and observers in this field, the reflection of nuclear energy in sectors of public opinion is seen as the most difficult obstacle they have faced in more than 45 extremely fruitful years since the initiation of the first nuclear power plant.

Today, there is a lot of public misunderstanding and misperceptions about nuclear technology. People are hypersensitive to nuclear technology and we all must help them with a credible and comprehensive educational initiative, to understand that this technology, like all other technologies, carries benefits and risks, and that mature ways have been developed for weighing one against the other.

How to use nuclear technology will differ from one country to another, depending on a nation's need and priorities but there is a need to ensure that the public receives appropriate information to make intelligent decisions about the available options.

Many nations view nuclear technology as a technology of the past. But as Minister Adamov stated, even in the worst-case scenario for nuclear energy sector, for the next 30 to 50 years we will need nuclear

scientists and engineers to deal properly with the nearly 450 existing reactors world-wide. To achieve this goal, in many areas of science and technology, nuclear scientists and engineers, together with states, nongovernmental organizations, and individuals, must get together for discussions and collaboration.

The so-called end of the Cold War provided an historic opportunity to advance the cause of nuclear nonproliferation and disarmament. But as was pointed out by many speakers yesterday, the 6th NPT Review Conference left open many questions regarding the satisfaction of the *Principles and Objectives for Nuclear Non-Proliferation and Disarmament*, part of the package of decisions which accompanied the agreements on the NPT's indefinite extension in 1995.

As we all know, putting in place these components, which together constitute the complex mosaic of the global nonproliferation regime is a very hard task. In my personal opinion, this goal cannot be achieved only by means of export controls on the supply of nuclear materials, technology and equipment, or global, regional and bilateral agreements in accordance with which states commit themselves not to manufacture or possess nuclear weapons.

Steps should be taken toward transparency in nuclear disarmament and appropriate real and not virtual global and regional security agreements.

We live in a world where electricity consumption, technological development, and scientific discovery's show an exponential growth, with a doubling time of 40 years or less. At the same time, the world population grows about 1.9% per year, which means that the world population doubles every 40 years. Around 2050 there will be a total world population of 8 billion. Unfortunately, 80% of the 6 billion world population to date account for only 20% of the planet's resources, less than 15% of global commerce, around 10% of telecommunications, and 7% of the Internet users. More than a billion people live in extreme poverty. Illiteracy and diseases that are not known in industrialized countries are common in the *South*.

The recent Heads of State *Millennium Summit* endorsed the objectives of narrowing those gaps. In this context, the issues that have been addressed at the present conference, at an extremely high professional level, relate to the international context, and the need for universality, symmetry, and equity for the nonproliferation regime. These will have a real and not a virtual meaning if the above-mentioned facts are duly taken into account.

As Bebel once said, 'All political issues, all legal issues, are eventually nothing but power issues in the end.'

In this regard, Cuba considers universality to be a goal that cannot be achieved given the current scheme of things, the intention to build a nuclear nonproliferation regime on a discriminatory basis, giving immense privileges to a very small number of countries.

Cuba also stresses the need for specific and real steps to achieve total, unconditional and verifiable disarmament.

Despite the fact that no favorable changes in the Cuban environment had been recorded, Cuba agreed to sign the Tlatelolco Treaty and the additional protocol, as a gesture of good will and transparency. Nevertheless, the obstacles which have until now prevented the Republic of Cuba from becoming a full party of the NPT and Tlatelolco Treaty remain and continue to seriously affect Cuban security.

I would like to finish my intervention with another quotation, that of a renowned scientist of Russian origin - Ilya Prigogine, - 'The future can not be predicted but it can be designed.'

Only when the idea of prohibition - which is broader in scope than nonproliferation - is understood and accepted by all, can a universal regime for the prohibition of nuclear weapons and the creation of common goals and objectives be fulfilled.

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[1] This is an abridged version of Dr. Castro's luncheon address at the Moscow International Nonproliferation Conference (October 6-7, 2000). The article reflects personal opinion of the author and does not present official position of the Republic of Cuba.

PIR Center News

Winter 2001

2000, September 19. The PIR staff met Chairman of the Duma Defense Committee Andrei Nikolaev.

The PIR Center was represented by Director Vladimir Orlov, Advisor Lt.-Gen. (res.) Vasily Lata, and PIR Research Associate Ivan Safranchuk.

In the course of the meeting, Vladimir Orlov informed Gen. Nikolaev about research projects and prospective areas of research for the PIR Center. Andrei Nikolaev expressed his interest in expanding cooperation between PIR and the Committee on Defense.

In addition, urgent matters concerning arms control were discussed, in particular, US plans to develop the NMD system, the progress of the CTR program, as well as issues pertaining to control over tactical nuclear weapons and other general international security issues.

In summary of the meeting was prepared "*The 2000-2001 Protocol of Cooperation between the Duma Committee on Defense and the PIR Center*".

2000, September 21. The PIR Center held a seminar "Prospects of Russian Military Reform".

According to PIR Advisor Lt.-Gen. Vasily Lata, former First Deputy Chief of the Supreme Staff of the Strategic Missile Forces, 'Military reform in Russia has nothing to do with the measures taken so far or discussed in the media. Plans of military reform should not only provide for armed forces' reduction, but envisage fundamental changes in their form and structure. The military reform should cover all military structures of the state, should not be limited to reorganization of the Navy and the Army, and should be implemented by the state in general, not by the Ministry of Defense only.'

Other speakers – Prof. Yury Fyodorov, member of the PIR Executive Council and Department Head in the Institute for US and Canadian Studies, and Ivan Safranchuk, PIR Research Associate and Project Director, pointed out that recent efforts to provide extended nuclear deterrence resulted in the situation, when the armed forces had to develop capabilities to parry hypothetical threats, being unable to repel realistic and already existing challenges. A compromise draft of reform approved by the RF Security Council in August 2000, does not meet current requirements of reforming.

The meeting was attended by representatives of diplomatic corps: officers for political and defense affairs of Australia, the Czech Republic, Denmark, Finland, France, Germany, Great Britain, India, Israel, Italy, Japan, Netherlands, Norway, Poland, Romania, Sweden, Turkey, Ukraine, the USA, Uzbekistan, Vietnam, Yugoslavia.

2000, September 18-22. PIR Senior Advisor Roland Timerbaev took part as an observer in the annual session of the IAEA General Conference in Vienna.

The session was attended by atomic energy officials from many states, including Russian Minister of Atomic Energy Yevgeny Adamov and US Secretary of Energy Bill Richardson. The conference paid much attention to President Putin's initiative set forth in New York at the *Millenium Summit*. The General Conference adopted by consensus a Russian-sponsored resolution calling for concerted efforts of member states to develop new nuclear technologies preventing nuclear nonproliferation. The Agency decided to set up a special group to elaborate these projects. The General Conference admitted Azerbaijan, Tajikistan and Central African Republic to the IAEA, increasing the number of members to 133 countries.

2000, October 1. Dr. Bobo Lo became a new PIR Research Associate.

Born in 1959 in London, Bobo Lo is Australian by nationality. He got his Master Degree in Oxford and in 1995, was awarded Ph.D. at the University of Melbourne.

Dr. Lo has a significant diplomatic experience working as an official of the Australian Department of Foreign Affairs and Trade (DFAT). In 1989-1990, he was Deputy Director of the USSR Section in Canberra and was the Department's chief analyst on Soviet economic policy. In 1990-

1992, he served as Executive Assistant and Principal Policy Advisor to the Secretary of the DFAT. In 1995-2000, he moved to Moscow to work in the Australian Embassy where he took the posts of First Secretary and Deputy Head of Chancery (1995-1998), being in charge of Russian foreign policy and security issues. Later he was promoted to Counsellor, Head of Chancery and Deputy Head of Mission (1998-1999).

In January-September 2000, he was a Visiting Scholar in Wolfson College (Oxford) and was engaged in research for a book on Russian foreign policy in the post-Soviet era.

2000, October 5. The PIR Center held a Research Council meeting on "*START III Dialogue and Future Decisions on the ABM Treaty*".

According to PIR Advisor Lt.-Gen. Vasily Lata, 'START III dialogue goes very slowly. The Russian law on ratification of START II stipulates implementation of the latter with preserving the ABM Treaty. Unless final solution concerning the ABM-NMD issues is found, one can hardly expect negotiations on START III. We can only point out that much will depend on the outcome of November elections in the USA.'

PIR Research Associate and Project Director Ivan Safranchuk emphasized that one of the ways out of existing deadlock is to abrogate the 1997 set of agreements related to the ABM Treaty. This would facilitate START III talks. There will be no prompt and easy solution of the ABM-NMD problem, regardless of which administration will follow President Clinton.

In the course of the meeting the parties discussed the impact of US internal political situation on plans of limited NMD deployment. Participants believed that the US ruling elite recognized that it would be impossible to provide rapid deployment of the NMD. This is why US policymakers, both Democrats and Republicans, are ready to have a compromise with Russia.

Among those participating in the debate were William Potter (USA), Rebecca Johnson (Great Britain), Dastan Eleukenov (Kazakhstan), Joe Cirincione (USA), Bill Hoehn (USA), Jon Wolfsthal (USA), Clay Moltz (USA), Mikhail Vinogradov (Committee of Scientists for Global Security), Sergei Zelentsov (Institute for Strategic Stability), Vladimir Rybachenkov (Ministry of Foreign Affairs), Yury Fyodorov (Institute for US and Canada Studies), Anatoly Dyakov (Center for Environment, Security and Disarmament) and others.

2000, October 5. A meeting of NGOs and research centers in the area of arms control and nonproliferation was held in Moscow.

The goal of meeting was to acquaint the colleagues of four Russian research centers: the *Kurchatov* Institute, the IPPE (Obninsk), the VNIIEF (Sarov), and the VNIITF (Snezhinsk) with the activities of Russian, US, and Japanese organizations, who are also studying the problem of nonproliferation. Experts from 19 centers participated in the meeting; particularly from the Moscow Carnegie Center, Carnegie Endowment for International Peace, the Russian-American Nuclear Security Advisory Council (RANSAC), the Center for Nonproliferation Studies (Monterey), the national laboratories of the US Department of Energy, the Japan Atomic Industrial Forum, and others.

The PIR Center was represented by Deputy Director Dmitry Polikanov, who presented a report covering the activities of the center, and Junior Research Associate Dmitry Kovchegin.

2000, October 6-7. The PIR Center and the Moscow Carnegie Center held the Moscow International Nonproliferation Conference, which united 205 participants from 24 states. For the first time, Russia held an authoritative forum, during which NGOs and governmental bodies managed to discuss such topical issues as nuclear safety and security, missile proliferation, strategic nuclear arms reduction, elimination of chemical and biological weapons, policy and practice of export controls and prospects for the coordination of international efforts to strengthen nuclear nonproliferation.

'Russia is prepared to make its contribution by offering to the world community its developments pertaining to the nuclear fuel cycle with natural safety features, which will serve the technological strengthening of the

nonproliferation regime,' said Minister of Atomic Energy Yevgeny Adamov in his conference address. 'The combination of global experience in analyzing and improving the proposed technical solutions will give powerful impetus to the broad development of the nuclear energy sector in the 21st century.'

Delegates of the conferences paid much attention to the statement by Nikolai Uspensky, Head of the Department of International Security of the RF Security Council Staff. He reaffirmed Russia's commitment to WMD nonproliferation values and emphasized the importance of tightening global and national export controls.

Heated debate was caused by the reports of representatives from proliferation-sensitive states, i.e. Israel, India, Iran, and Pakistan. According to Cuban Academic Fidel Castro Diaz-Balart, the goals of nonproliferation 'cannot be achieved by means of export control over supplies of nuclear material, technology, and equipment or by agreements requiring states to not acquire or manufacture nuclear weapons. It is necessary to ensure persistent endeavors in the area of nuclear disarmament and to take measures to provide for real and not virtual global and regional security.'

The Director of the PIR Center and Co-Chair of the Conference, Vladimir Orlov, characterized the current state of the nonproliferation regime and existing nuclear deadlock in the following manner, 'The universality of the NPT has not been ensured. States do not always comply with the disarmament elements of the treaty. Tactical nuclear weapons remain uncovered by legally-binding agreements. There is a threat of an arms race in outer space. Contrary to the NPT spirit, nuclear weapons are still deployed beyond the national territory of nuclear weapon states.'

The unique character of the conference was emphasized by its ability to promote dialogue between governmental and non-governmental structures engaged in nonproliferation. According to Scholar-in-Residence of the Moscow Carnegie Center and Co-Chair of the Conference Alexander Pikayev, 'positive changes in the process of shaping Russia's policy and growing transparency in the nuclear sphere have enabled representative of the academic community and activist organizations to present their vision of problems to officials of the State Duma, Minatom, Ministry of Foreign Affairs, Security Council, Federal Security Service, and other agencies concerned.' Indeed, the future of the regime requires the promotion of the nonproliferation culture.

The main result of the conference was the further expansion of discussion on nuclear nonproliferation and arms control matters, which is becoming extremely important for international peace and stability on the threshold of the new millenium.

For more information about the conference see section "**Conference**" on the PIR Web-site (http://www.pircenter.org)

2000, November 21. The PIR staff met Vice-President of the *Kurchatov* Institute Nikolai Ponomaryov-Stepnoy and Director of the KACNAC Vladimir Sykhoruchkin.

Director Vladimir Orlov and Junior Research Associate Dmitry Kovchegin represented the PIR Center at the meeting.

Participants touched upon prospects for the implementation of President Putin's initiative at the UN *Millenium Summit*. The ways of further cooperation between the PIR Center and the *Kurchatov* Institute were also discussed.

2000, November 29. The PIR Center held a meeting of the **P**artnership-**I**n-**R**esearch Club (PIR Club) pertaining to the outcome of US presidential elections and its impact for US-Russian strategic relations.

PIR research staff and members of the Club discussed the prospects for US-Russian relations, possible foreign policy activities of the next US administration and its arms control and nonproliferation course.

Among participants of the meeting were representatives of *Bechtel National, Inc.*, *Interros*, embassies of India, Norway, Poland, Japan, Australia, Turkey, Denmark, etc.

Summary

Yaderny Kontrol (Nuclear Control) Journal of the PIR-Center for Policy Studies Volume 6, No. 6, November-December, 2000

The *Editorial* entitled "*US-Russian Relations: A Game without a Handicap*" asserts that, 'One of the key issues for modern Russia is the future of US-Russian relations. The presidential campaign in the United States truly brought this topic to the surface. In the post-World War II world US-Russian dialogue has always held a special importance. During the Cold War the USSR and the United States treated their bilateral relations not as a simple foreign policy issue, but as the foundation for the bipolar axis of the entire international system. And for each of the two states its relation with its ideological adversary was a matter of a strategic choice. Russia has maintained this outlook in the last decade. The majority of Russia's strategic tasks are related in one way or another to dialogue with the United States.

'In the 1990s, US-Russian relations have been characterized by a deep imbalance regarding strategic capabilities. This imbalance is not due to economic difficulties, but rather is a reflection of changes in priorities of the Russian political elite. Domestic democratization in Russia led to the redistribution of scarce internal resources to aid reform rather than the enhancement of military might and support of satellite countries or allies. In order to ensure Russia's position in this new system and to pursue global policy, Russia will have to pay a large price. From this point of view, it was reasonable for Russia, at least economically, to choose recipient status, not donor status in the world system. However, this situation is, to a large extent, humiliating for Russia and has fueled a permanent debate: Is there any alternative?

'There is a myth that Russia can obtain significant economic gains from developing contacts with the 'states of concern.' Nevertheless, at present, these states are not richer than they were 15-20 years ago, when they first accumulated a debt to the Soviet Union. Is there any reason to believe that they will start paying those debts now? As a rule, a leading state (one can hardly imagine Russia's subordinate role in relations with these countries) subsidizes its partner. The example of Belarus demonstrates how much an ally may cost the donor country. Obviously, it depends on the countries involved. But even oil exporting nations will not rush to pay their debts to Russia. Sometimes, it is presumed that Iraq might pay its debt sanctions were lifted; this is probably true. However, this will make Russia be a *patron*, of nations who will pay their debt to Russia in *oil dollars*. Thus, Russia is pursuing a policy of selling off its remnants of global influence and international lobbyist capabilities (in some international organizations Russia's voice is formally or actually important, e.g. in the UN Security Council). By using its influence so frequently Russia is cheapening its ability to influence world matters. Eventually Russia will inevitably be excluded even formally from the *club* of Great Powers and the whole system of international law will be changed one day at the terms set by Western nations.

'Imbalance in US-Russian relations is inevitable and natural. At least, if we consider it in terms of national interests and not ideological myths. The United States has become and will remain a global power (to a certain extent, counter to its traditions). The attempts of some US *missionaries* to put an end to US isolationism for ideological (political) reasons have failed (e.g. President Wilson). The United States emerged from its isolationist *shell* only when the economic situation changed. Obviously, the ideological confrontation with the Soviet Union developed and strengthened the *messiah* character of US policy. The US heavy economic dependence on Middle East oil forces the nation to pursue control over global policy in order to ensure its resources.

'US foreign policy has undergone changes only when economic conditions require them. The US global policy is profitable and has no alternative. Hence, Washington can no longer return to isolationism. Under these

circumstances, any assumptions concerning dramatic changes to US foreign policy will probably remain merely assumptions.'

'At the same time, *cold shower*, of which many Russian politicians and experts dream, will affect Russia,' concludes the *Editorial*. 'Bargaining between the US and Russia have no more *discounts*. Rationalization of US-Russian relations, in fact, at the initiative of the US, has enabled Russia to participate in a *big game*, where the stakes will grow as more and more pessimistic forecasts about the future of the US economy emerge.'

Vladimir Rybachenkov in his article "*Russia and International Cooperation in the Area of Excessive Weapons-Usable Plutonium Disposition*" argues that 'the process of bilateral strategic nuclear arms reduction, which started in 1994 when START I became effective, resulted in the need to eliminate a substantial amount of weapons-usable fissile material - highly enriched uranium and plutonium - extracted from dismantled nuclear warheads.

'Since 1993, Russian and foreign experts have been seeking ways to dispose of weapon-grade plutonium that would meet nonproliferation, technological, economic, and environmental standards.

'The historic event creating a favorable climate for the development of international cooperation in this area at both a bilateral and multilateral level was the Moscow Nuclear Safety and Security Summit (April 1996).'

Victor Slipchenko in his review "*CTBT: Four Years After Signature*" emphasizes that 'on September 24, 2000, four years had passed since the CTBT had become ready for signature. This period can be characterized by many positive and negative developments, but, in general, one can admit that these four years have proved that the future for the treaty sought by the world community for about 40 years will be difficult.

'By mid or late 2001, 34-36 countries out of 44 states, whose ratification is necessary to ensure the CTBT's effectiveness, will presumably ratify the treaty. The further fate of the CTBT and its entry into force will depend on the political will of the relatively small group of nations.'

The issue also contains data on conventional arms supplies of Ukraine and Belarus in 1996-1999 prepared by Konstantin Makiyenko.

Yaderny Kontrol (Nuclear Control) Journal of the PIR-Center for Policy Studies Volume 7, No. 1, January-February, 2001

Minister of Atomic Energy Yevgeny Adamov in his interview "*Implementation of the Russian Initiative Will Help Solve Security Problems and Will Diminish Proliferation Threats*" maintains, 'The initiative set forth by President Putin in New York was not an improvisation. This was a political summary of R&D results and the fruit of several decades of the industrial use of nuclear energy and nuclear technology. In fact, this is a political initiative aimed at solving all key problems. Nowadays it turns out that it is impossible to ensure an energy supply adequate for mankind in the next century by using the nuclear energy technologies of a closed or open fuel cycle with MOX fuel, as many experts propose. According to our estimates of energy-usable uranium, 10 million tons of uranium will be exhausted in the next 80-100 years, depending on whether or not we use MOX fuel capabilities. Moreover, if we resort to MOX technology, we will leave no chances for nuclear energy development after 2100.

'Only the use of a closed fuel cycle in fast reactors and the step-by-step transition to a uranium-thorium cycle once uranium resources have been exhausted will theoretically, as far as fuel availability is concerned, enable the nuclear energy sector to meet the high demand for energy and fulfil the provisions of the Kyoto Protocol.'

Yevgeny Zvedre in his article "*The Development of the Russian Export Control System. Russia's Participation in International*

Cooperation in the Area of Nonproliferation and Export Controls" states that 'Russia has developed a modern system of export controls as a key element to ensure WMD nonproliferation and to prevent the proliferation of missile delivery systems. Such a system has been established as a result of geopolitical, military-strategic, and economic factors.

'Western recognition of political realities and the shift from Cold War confrontation to cooperation in maintaining international security and stability have helped Russia to enhance its participation in international efforts to curb the proliferation of WMD and missile technology.'

Nikita Nikiforov in his review "*A Systematic Approach Towards the Security of Nuclear Facilities*" says that 'In the current political and socioeconomic situation, a review of the principles and priorities pertaining to security of nuclear facilities is most urgent.

'The goals and principles of the organization of the security system for nuclear sites strive to maintain and develop nuclear weapons and nuclear energy complexes, which make the core of Russian national security.

'The proposed systematic approach towards the security of nuclear sites is based on Russian legislation and evolves the *National Security Concept of the Russian Federation*, as well as the Federal Special Program "*Russia's Nuclear and Radiation Safety and Security in 2000-2006*".'

Vadim Kozyulin in his commentary "*Syria's Missile Deterrent: Final Breakthrough*?" argues that 'since Syria's aircraft and air defense system is lagging behind, it must rely on its missile arsenal, which may secure some chance for victory in a potential armed conflict. The financial difficulties of the state leave Syria no opportunity to purchase new aircraft or air defense systems. Under these circumstances, the acquisition of SCUD-D has enabled Syria to demonstrate its military might, this supposition is supported by the hasty tests of North Korean missiles.

'The development of Syrian armed forces in the last decade has clearly indicated that Damask needs external financial or technological assistance to maintain its defense capabilities.'

Yury Smirnov and Roland Timerbaev in their article "*The First Step Towards Reasonable Behavior in Nuclear World (A History of the Conclusion of the 1963 Limited Test Ban Treaty)*" state, 'In early 1963, Adamsky, a physicist and a colleague of Andrei Sakharov in Arzamas-16, devised a diplomatic plan to recharge the protracted negotiations in Geneva concerning a nuclear test ban. He shared his views with Andrei Sakharov, who immediately got in touch with Minister of Atomic Industry Slavsky. The latter conveyed this idea to Deputy Foreign Minister Malik and finally, to Nikita Khrushchev. The Soviet leader welcomed the idea and sent a message to John Kennedy. As a result, the Soviet, US, and British delegations prepared a draft of the treaty within two weeks.

'Sakharov emphasized, "I believe the Moscow Treaty to have historic importance. It preserved hundreds of thousands or even millions of human lives, which would have been ruined if atmospheric, water, and space tests had continued. This treaty is even more significant as a step towards diminishing the threat of global thermonuclear war. I am proud of participating in the development of the Moscow Treaty."

'Andrei Gromyko said that one of the moments in his work as foreign minister of which he was most proud was the Limited Test Ban Treaty.

'The article deals with factors affecting the conclusion of the 1963 Moscow Treaty, Adamsky's initiative, and the personality of the latter.'

YADERNY KONTROL JOURNAL (IN RUSSIAN) IN 2000

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No.15. *US NMD: Implications for Strategic Stability and Arms Control*. Ed. by Ivan **Safranchuk**, PIR Center. September 2000, 84 pp.

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No.22. *Russia's Nuclear Policy: Problems and Prospects*. In English. Ed. by Ivan **Safranchuk**, PIR Center, September 2000, 48 pp.

Arms Control Letters

Letter of October 2000.

Syria's Missile Deterrent: Final Breakthrough? October 26, 2000

Letter of November 2000.

Oleg Chernov: "Globalization Makes Russia Even More Sensitive to New Missile Challenges". November 27, 2000

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THE PIR CENTER OFFERS A BROAD RANGE OF NEW PUBLICATIONS IN 2001

Nuclear Russia Today - a newsletter in Russian, which contains digest of Russian nuclear-related and arms control news and comes out twice a week since September 2000.

The Duma and Arms Control - a monthly bulletin in Russian and in English containing information about key nuclear-related and arms control developments in the State Duma. The bulletin comes out since October 2000, thanks to generous support of the Ploughshares Fund.

Missiles and Aerospace - a quarterly analytical newsletter in Russian, whose dissemination will start in March 2001. The bulletin deals with missile and missile technology issues, nonproliferation and exploration of outer space.

Russian Security - a newsletter in English, which will replace PIR's well-known *Security Issues* newsletter and will come out twice a month in the form of analytical reports concerning Russian domestic and foreign policy, military security, geopolitics, financial and economic matters.

PIR Library Series will continue in 2001. The PIR Center plans to publish among others *Arms Control Guide*, *Nuclear Nonproliferation and the US-Russian Relations: Challenges and Opportunities*, and the second edition of *Nuclear Nonproliferation Handbook* (2 volumes).