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Nonproliferation
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Yaderny Kontrol (Nuclear Control) Digest No.11. Summer 1999

Hot Topic

On February 25, 1999 the PIR-Center for Policy Studies in Russia held in Moscow hotel National the conference "Export Controls: Legislation and Practice". The deputies and staff of the State Duma, representatives of ministries and agencies concerned, representatives of business circles and industry, governmental and non-governmental experts took part in the discussion.

Yaderny Kontrol Digest offers its readers the excerpts from major reports made during the conference. They are based on the tape-recorded material with some editorial amendments and abridgements.

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Export Controls as a Key Element of National Security

Nikolai Uspensky,
Chief,
Department of International Affairs,
Security Council Administration

On December 17, 1997 President Yeltsin issued Decree No. 1300, approving the *Concept of National Security of the Russian Federation*. According to this document, the Russian national security is provided for by purposeful concerted efforts of state and public institutions as well as by citizens, who take part in revealing and preventing various threats to personal, social and state security and counteracting them. Nowadays the most urgent challenge to the Russian security is proliferation of weapons of mass destruction and missile delivery systems. It's common knowledge that uncontrolled WMD proliferation may have dramatic consequences if the weapons are acquired by religious fanatics, terrorists, ambitious politicians with hurt pride. All this may put our country and the whole world on the verge of disaster.

Despite general endeavors to prevent WMD proliferation, a bolt from the blue was news about Indian and Pakistan nuclear tests in early May 1998. These actions of non-members of the *nuclear club* once again proved the necessity to find a prompt and comprehensive solution to the problem of WMD nonproliferation.

The real means to prevent WMD and related (military, specialized, dual-use) technologies' proliferation is the international system of export control based on appropriate national regimes.

In May 1998 the G-8 meeting in Birmingham concluded with a joint communique that included a paragraph on the problems of nonproliferation of WMD and their means of delivery, put forward by Russia and the USA. The parties reaffirmed their commitment to promote realization of export control measures in compliance with the obligations provided for in the WMD nonproliferation regime.

This issue was in the focus of discussion during the Russian-American Moscow summit on September 1-2, 1998. On the instructions of the Russian president, Security Council staff in interaction with other corresponding Russian agencies elaborated with the United States an agreed document on cooperation in the export controls area with a view to secure nonproliferation of WMD and their means of delivery. This is a sort of working plan for implementation of decisions taken by G-8 in Birmingham and in the course of negotiations in Moscow.

Export control issues play an important part in the agenda of Gore-Primakov commission meetings, dealing with different aspects of Russian-US cooperation. There has been formed some other Russian-US bilateral intergovernmental mechanisms concerning the matter of exporting military, specialized

and dual-use technologies, which seek the ways to solve the problems of control over such processes. There are non-stop active contacts with the Clinton administration, the US National Security Council and the US Department of State on the issues relating to the problem of nonproliferation of nuclear weapons and missile technologies. For instance, on February 22, 1999 in Moscow there was held a meeting of then Chief of President's Office Nikolai Bordyuzha with Deputy Secretary of State Strobe Talbott, concerning these matters.

I want go into details since it's known that the WMD and delivery means nonproliferation issues are constantly discussed in the framework of international nonproliferation regimes currently in force. As you know there are six of them. Russia participates in five of them, except *Australian Agreements*, which, in our opinion, duplicate in many respects the provisions of the CWC.

All these facts reflect the growing attention drawn by all states to the problem of struggle against proliferation of WMD and their delivery systems.

As I have already said, Russia agrees with other civilized states that the most perspective means to prevent the WMD proliferation is an efficient national system of export control. First steps to establish the latter were taken in early 1990s. Recently, President Yeltsin pays particular attention to this issue. In conformity with his instructions, the Russian government has taken additional measures to streamline judicial basis regulating the export controls area.

In fulfilling its commitments before the world community, the Government of the Russian Federation has passed:

- Resolution No. 57 of January 22, 1998 "*On the Improvement of Controls over the Export of Dual-Use Goods and Services Related to Weapons of Mass Destruction and Missile Delivery Vehicles*". Its main point is that all Russian foreign traders (both private and state-owned) shall refrain from export deals with all dual-use goods and services, which are commonly

not subject to Russian legal acts in the export controls area, if they know that these goods and services can be used to develop the weapons of mass destruction and their missile delivery systems. The Government introduced the system of comprehensive control (referred to as *catch-all* in major Western states), which enables it to consider any issues that do not formally fall under the restrictions of export control regimes but relate to dual-use technologies.

- On May 14, 1998 President Yeltsin signed Decree No. 556 "*On Legal Protection of the Results of Scientific Research and Technological Works for Military, Specialized and Dual-Use Purpose*", which declared all aforesaid results in defense sphere to be the state-owned intellectual property.
- On May 12, 1998 in the course of implementation of Resolution No. 57 there was issued the "*Manual on Establishing the Internal System of Export Control in the Company*". The document is aimed at rendering organizational and methodological assistance to Russian enterprises and companies, participating in international exchange of goods and services, in the field of elaborating and introducing intra-firm export control systems.

However, the time shows that export controls can't be efficient without appropriate legislation. On July 30, 1998 the Russian government submitted for consideration of the State Duma the Federal Bill "*On Export Controls*", which is aimed at establishing a solid legal basis for further improvement of the system of export control over sensitive technologies. The State Duma paid a tribute to the significance of this matter and approved of the bill with an overwhelming majority on December 18, 1999 in the first reading. Another, second reading will take place in near future and as it is expected the bill will incorporate amendments and more precise definitions, which will contribute to its efficient application and implementation.

Criteria of comprehensive export control over military and dual-use goods and services should be fixed in legislation and it's

absolutely important for us. In compliance with the direct instructions of President Yeltsin to the Secretary of Security Council of the Russian Federation to take up the coordination of activities aimed at improving of the export control system, the Security Council staff takes drastic measures in this area:

- On May 29, 1998 the Secretary of the Security Council set up a working inter-agency commission on the problems of nonproliferation of WMD and their delivery means.
- Under the auspices of the Security Council there was held a number of conferences with the heads of ministries and agencies concerned, which contributed to working-out of a coherent approach to the problems of establishing export control system. The latest conference took place in the President's Office on February 11, 1999 and was chaired by Nikolai Bordyuzha. The main idea of the discussion was that we should be more resolute in establishing order in this area in Russia. In fact, the Russian Prosecutor's General Office is likely to join these efforts and participate in teamwork. There were given detailed recommendations to the Russian government and a number of ministries and departments.
- On May 15, 1998 the Russian military industrial complex enterprises were given the *black list* of end users. Relations with them require prior approval of the concerned authorities in charge of control over sensitive technologies' export.
- On May 20, 1998 a number of governmental bodies (the Ministry of Atomic Energy, the Ministry of Economics, the Ministry of Industry and Trade, the Russian Space Agency, the Ministry of Science and Technology, etc.) received supplementary list of foreign companies prepared by the Federal Security Service (FSB). The list includes the firms suspected of possible involvement in military programs on the development of WMD and their means of delivery.

The Russian activities to develop a sophisticated system of export control follow several guidelines:

1. To ensure export control and to prevent drain of sensitive technologies that may inflict damage to national interests of the country.
2. To comply with international commitments aimed at prohibiting uncontrolled export of equipment, materials and technologies that can be used in the development of WMD and their delivery means.

In recent years the most urgent problem for Russia has become the prevention of possible drain of know-how and materials for military and dual purposes as well as *brain drain*. This is an area of particular concern for secret services of the *threshold states*, developing or possessing either WMD or technologies for their production (especially in the Middle East). Russian scientists are also of interest of intelligence services in developed countries.

At the same time Russia is accused of violating its international commitments under the NPT or the MTCR regime. Some Russian organizations fall the victims of sanctions. These issues determine the fate of such key problems as economic cooperation with the United States, the IMF credits, Russian-American cooperation in space programs, development and deployment of the US missile defense system, the future of the law on US sanctions against Russia. Even the slightest breach of agreements in this area (either authorized or not by the Russian government - it doesn't matter for the USA) are fraught with multibillion losses and aggravating economic crisis for decades.

We shouldn't forget that any contract or deal of a Russian enterprise or institute becomes immediately known to its foreign partner and concerned agencies of other foreign states. To put it mildly, the failure of Russian corporations to provide the government with sufficient information results in tangible political and economic costs for the authorities.

As to economic benefits, sophisticated system of control over dual-use goods and

technologies will open international markets for Russian companies engaged in foreign trade and will promote restoration of trust in our financial institutions and the Russian government on the whole. That will tremendously strengthen positions of the Russian defense industries on export markets.

The core of the national export control system is planned to be Governmental Commission on Export Control of the Russian Federation, chaired by Yury Maslyukov, and the Federal Currency and Export Control Service of Russia.

Unfortunately, this is not the right time for quick establishment and improvement of efficient export control system. In this connection it is necessary to create a proper climate in the country in order to ensure public understanding of the policy pursued by the government and to promote awareness of personal responsibility for compliance with export control requirements.

It is not a secret that the Russian science finds itself in a very difficult situation. This must be the underlying factor for the danger of dual-use materials and technology drain. To my mind, our experts should explore the possibility of Russian-US interaction in providing support for the Russian science since that would secure nonproliferation of WMD and their means of delivery.

Besides, they could give a detailed analysis of a number of measures to expand Russian-American cooperation in the field of nonproliferation and export controls. One of the possible ways is to create a database containing information about students of the third states, who major in *sensitive* professions. The other option is to work out a number of joint measures for export control enforcement in the states parties to the customs union, i.e. Byelorussia, Kazakhstan, Kyrgyzstan, Tajikistan.

Export Controls in Russia: It Will Be Naive to Expect Easy Solutions

**Gennady Yevstafiev,
Lieutenant-General**

In recent years export control issues stay permanently in the focus of attention of political leadership of different states and international organization. Such attention to export control agenda results from two major factors.

First, there is a growing concern over the possibility of proliferation of WMD and their delivery means as well as some other hazardous weapons. The problem usually gets momentum in view of various important international developments such as Indian-Pakistani nuclear tests in May-June 1998, test launch of North Korean satellite (a certain technological breakthrough for this country, which earlier didn't possess such know-how), and cooperation in manufacture of delivery systems (between North Korea, Iran and Pakistan in particular). All above-mentioned events really change the situation in the world and established balance of power. Despite availability of political means and ways to exert pressure through demonstration of force (typical of the United States), the international community however has failed to prevent these developments.

Second, we shouldn't forget that the NPT is based on two elliptic systems. On the one hand its '*not to transfer and not to assist to acquire*' principle while on the other hand we can't deny the rest of humanity the development of nuclear research for peaceful use. And when we speak about export controls we see a similar system for there are attempts to use export controls as the means of political pressure (of which Russia is the object) and of competition for world arms and high technology markets. That results in deliberate tensions in some situations, concerning real or alleged violations of international export control regimes. The fresh example is the history of Russian-US contradictions about cooperation with Iran, which I'll dwell on later.

We must pay tribute to our governmental authorities since for the last 5-6 years Russia has made a stride towards forming the

system of export control. Those, who initiated this process, can prove that for they know what we started with and what export control system we have now. It's a quite good system but, moreover, Russia has joined a number of international organizations on export controls, which was completely impossible 10 years ago. I mean difficult but nonetheless successful Russian acceding to the MTCR regime. Besides, Russia actively works in the *Nuclear Suppliers Group (Zangger Group)*. There is a number of other international mechanisms that require our sincere and serious attention. We should take part in them but should not forget about protection of our own interests through this participation as well as to prevent the use of such structures to achieve other, not very noble goals.

I really think that we have set up the system of export control. It may be good or bad - tastes differ. But it exists as a system and it works. It relates to the control lists, to the system of considering sensitive technologies issues, etc.

Export controls have their mission and it's rather simple, i.e. to promote international trade development through securing safe export. Economic interests of private capital and states require promoting in all possible ways constant growth and expansion of export while security interests of some states and international community on the whole demand to cut off from export flows some goods and technologies that pose a threat to nonproliferation regime. Here is a certain contradiction. To solve this controversy we should find an optimal balance between our commitment to free trade principles and the necessity to confine dangerous export. This is a task for those, who are in charge of export controls on behalf of their governments. There are such structures in Russia which try to accomplish this mission, Inter-agency Commission on Export Control in particular.

We have to admit that at certain stages we had to make some concessions to our partners, above all to the United States. It's known for those, who participate in negotiations on export controls, that there is an agreement with the USA on Iran of May

1995. Under this accord, we took some obligations, which obviously need to be adjusted to reflect current reality as soon as possible.

I've been studying nonproliferation problems for quite a long period of time and I would like to draw your attention to an attempt to equate nonproliferation policy with export controls. To my mind, this inaccuracy (if it is really understood) may lead us to a dangerous labyrinth for the nonproliferation policy consists of several components. In a broad sense, it involves various forces, international mechanisms, national mechanisms, secret services, state authorities, etc. It's a sort of integrated concept of state participation in the field of containing proliferation of hazardous technologies, preventing dangerous situations since any state formulate its course and priorities, taking into account foreign policy factors, the situation in neighboring countries and its relationship with a number of other states. On the one hand, confusion or substitution of terms in this sphere results in distorted role of export controls in solving nonproliferation problems. On the other hand, it allows for arbitrary political games that focus merely on political aspects of technical and organizational problems of export controls. We can witness a similar situation in the course of Russian-US dialogue, including the issue of Iran.

In my opinion, export controls are not the remedy for nonproliferation problems. It is well known in the West (although less known in Russia) where there are lasting traditions in the export controls area. The United States understood it long ago that's why all new concepts (like counter-proliferation) are based on good understanding of the place, role and foreign policy objectives, which can be solved with the help of export control system. This understanding comes from practice.

We have information on a great number of export control rules violations on the part of US corporations. We ask the United States about these incidents and they do answer. The quantity of such incidents constantly grows (I mean the circumvention of rules

relating to dual-use technology supplies in rogue states). If six years ago the Bureau of Export Administration, the US Department of Commerce registered 750 cases of unauthorized export of production subject to export regulations in 1997 this figure amounted to 1750 cases, i.e. nearly tripled.

Obviously, the Russian side defends itself when we are talking with Americans, although, to be frank, it is rather difficult to resist them. The United States demonstrate a very interesting approach: they fix their own violations and those of others (and I suggest that Russian authorities should do the same). Their facts of circumvention undergo trials and investigations and all guilty get their administrative, financial or criminal punishment. However, it's noteworthy that all legal measures are taken *post factum*. We are aware of the fact that missile and aviation industry of Iraq is 95% equipped with the most advanced equipment of the US and Western European origin (I suppose we can even envy Iraq). That's it! Specific and detailed talks! Later on in three or four years those guilty will be punished but they have already received the money and spent it, someone is already in jail, etc...

US export control officials say, 'We have passed all required laws, they have entered into force and are being implemented, hence, we have accomplished our mission.' But in fact, there was a drain, the proliferation of rather sensitive technologies took place. Moreover, these were the technologies rogue states are striving for to obtain from the United States, not from us.

However, the US penalty mechanism works efficiently and the punishment is inevitable. It must be a weak point of the Russian export control system since actually we have no mechanism of sanctions against violators. We are trying to solve this problem with a draft bill "*On Export Controls*" submitted for consideration of the State Duma but I don't think it will be a panacea. Along with some other departments and agencies, we urge for accelerated adoption of the Federal Law "*On Export Controls*" and back the FSB proposal to make amendments into Articles 188, 189 of the Russian Criminal Code. The latter will

enable us to proceed with law-enforcement activities any time export control rules are infringed.

Since I belong to the organization that has no right to interfere in the affairs of the Ministry of Interior I have no information on the number of criminal cases relating to illegal export of sensitive materials and how many of them have been brought to court. I know at least one case when there was a trial and a sentence and I'm sure that there were many more others, although it's beyond my competence. Evidently, we badly need (no less than the United States) the system of generalization, collection, registration and analysis of those facts and violations that are known to law-enforcement agencies. Without this information system, this databank we'll confront many difficulties in understanding major trends in the process of circumvention. We have to be able to follow these trends and to shift our efforts from one sphere to another: today the most topical issue is missile technologies, tomorrow it may be biotechnology for military or military-related use. That's why all incidents should be registered, classified and analyzed to make conclusions.

I believe that law-enforcement activities relating to the system of sanctions used against violators of export control regulations should have three stages, at least at this initial phase when we just study how to manage them. The first infringement should be followed with official warning, the second one with a considerable fine, and the third one with administrative or criminal prosecution.

This flexible system will allow us to work with enterprises for the intra-firm system of control is rather weak. I had a chance to talk with people working in defense industry, who even hadn't heard anything about export controls. And in their terrible financial situation they clutch at straws! Therefore, educational and training activities are of great importance.

To my mind, we should more actively use stimulation to encourage those, honestly complying with export control requirements.

I welcome the recent statement made by the Head of the Customs Committee: we should create favorable environment for those, abiding to law in good faith, i.e. to simplify the licensing procedure and to facilitate customs registration of exported goods. However, this method is a point for discussion. I had a heated argument with the then Vice Prime Minister Yakov Urinson when in 1997-1998 he chaired the Export Control Commission. He maintained that in civil society (to be frank, we have no proper civil society yet) the law-abiding person can not be awarded for observing the laws. In my opinion, any Western state has this or that system of *carrots* for those, who carry out their export commitments in good faith. I don't mean money, of course. It's a matter of simplifying procedures for getting the license or passing the customs control. It's a big *carrot* for those companies which scale of export trade is rather large. And there is a certain competition in the West and the firms appreciate the decision not to be examined or to have a simpler procedure of documents' registration as the way to acknowledge their permanent compliance with the rules.

Now let's say a few words about the US sanctions imposed on Russian organizations. The situation is rather strange, although we take it for granted. The United States takes the decision on sanctions on the basis of their domestic legislation and then extrapolates this legislation on international affairs, on their relations with other countries. The situation is dubious in the context of international law, although we shouldn't forget about reality. When I studied political science I had a chance to attend the lecture of an old ambassador who asked us: '*What is diplomacy?*' At that time we were young, we didn't know what to answer and became silent. He showed us a huge fist and said, '*That is diplomacy.*' That's why let's give it a realistic view: the United States has this huge fist and may impose some decisions on us.

Unfortunately, I have to admit that we find ourselves in such situation when we have to take it into consideration. Nonetheless, I think that we should be persistent in our struggle for equal rights and real partnership. In this connection it is absolutely reasonable to speak about Russian mechanism of

sanctions against foreign companies (including American firms), which are suspected of being involved in proliferation of WMD and their delivery systems. To make it clear, the sanctions should be imposed on those companies which work on the territory of Russia and violate Russian legislation. There is no doubt that dozens of US corporations working on the Russian territory are circumventing in different ways the restrictions on outflow of secret technologies.

If we have such mechanism we could be more resolute and *launch offensive* in some cases, including our relations and dialogue with the Western partners. Hopefully, the Export Control Commission, which showed interest in this matter, will give appropriate instructions.

The experience of world developed economies show that essential for efficient functioning of export control system is a high level of voluntary law-abidance of exporters. Russian exporters have another motivation - they are more interested in getting maximum profit in the shortest possible period of time without due understanding of consequences that may result from illegal commercial activities. It's astonishing! What's more if we don't solve this problem in near future we'll have to deal with the most surprising violations. Very often they are deliberate and delicate methods are used to conceal criminal activity. The situation is aggravated with participation of secret services on the part of rogue states, which have sophisticated methods of procuring secret technology and materials from *closed*, primarily defense industries. Moreover, they share this technology: North Korea consults Pakistan, the latter assists Iran, - that's why the situation is rather complicated, although it's not new. We used to be engaged in such activities and we understand it and know what to do.

Obviously, the mentality of our exporters to a certain extent results from deep economic crisis and difficult financial situation at many enterprises.

I would like to mention Resolution No. 57 "*On the Improvement of Controls over the Export of Dual-Use Goods and Services Related to Weapons of Mass Destruction and Missile Delivery Vehicles*". It's a very significant document, although the

impression is rather controversial. The resolution was further developed in the corresponding article of the Federal Bill "*On Export Controls*". Resolution No. 57 dealt with goods and technologies subject to *catch all* principle while the bill says about any goods or technologies related to WMD, their delivery means and other most dangerous types of weapons. I've treated this small amendment with certain skepticism from the very beginning and I still believe that we have to give a second thought to the idea of interpreting so freely Resolution No. 57 in the text of the federal law.

Another matter of concern for us is our relationship with the USA and other Western powers is the problem of *intangible* transfer of technologies, i.e. in the course of studies, scientific exchanges, through computer networks and exchange of scientific technical information, delivering of reports, conducting scientific research, etc. It's a very sensitive and, I must say, dangerous sphere. When we touch upon this problem we should bear in mind that it is common for all developed countries and it goes beyond classical export control regime. It's noteworthy that the issue of *intangible* transfer of technologies was in the focus of discussion at the recent meeting of the *Nuclear Suppliers Group*. The United States and Japan seem to have some experience in solving the problem but it hasn't been completely solved yet.

What should we do, bearing in mind new serious challenges concerning *intangible* drain of scientific technical information and results of scientific research? This is an urgent matter. To my mind, Russia has passed the period of *ban-and-interdiction* policy but we failed to find some new compensating means of containment, we haven't set up yet efficient mechanisms to influence the policy in this sphere. For example, a man, who has access to secret technology, goes on vacations to Istanbul, buys there an airplane ticket and goes to some country where he delivers lectures and provides consultations. We can do nothing with that and it's not the vicious intention of the state. Company says, 'We don't know anything about that, we can't deny him vacations, he has the right to leave the country for he has an absolutely legal passport.' It's a very complicated problem and these *black holes* grow along with Internet development. No one knows what to do in these circumstances, particularly taking into account our difficult financial situation.

The major organizational problem in the Russian export control system is its bureaucracy since decision-making process depends not on the substance or legal aspects of any specific case but on its conjunction with the interests of numerous agencies and departments. Generally speaking, this sort of bureaucracy in the export controls area is typical of any state. However, in developed and stable economies the problem is mitigated with consensus. In our country consensus has always been going in a descending line from the very top to masses. That's why we'll have a lot to do to improve the situation and to work out coherent policy and teamwork of ministries and agencies in the area of WMD and delivery means nonproliferation.

Look what happens! Director of a Russian nuclear power plant goes to Iran planning to discuss the matters relating to personnel training for the *Bushehr* nuclear power station. Then he arrives at the international scientific conference and talks nonsense, saying that in near future Iran will develop a nuclear bomb and those Iranians, who are going to be trained at his nuclear power plant, will participate in this program. It's ridiculous! We are enjoying self-torture!

To sum it up, I can say that there is a system of export control in our country and it works. We don't have to be ashamed of it or practice false modesty. The system on the whole meets international requirements and it is recognized in the West, including the US experts. Russia actively participates in a number of export control regimes and in some of them (in the MTCR regime in particular) it sets the fashion.

At the same time we have to admit that the system is far from being perfect. I would like to point out that all major problems of the Russian export control system result from overall crisis in our society, economy and state. Hence, it would be a mistake to promise quick and easy solutions for it would mean the deception of the Russian leadership. Formation of really efficient system of export control will be based on stable economy and the rule of the law in Russia. Nowadays our primary mission is to make every effort to provide for the Russian normal participation in the international division of labor.

Viewpoint**ROOTS OF US-RUSSIAN
TENSIONS ARE FAR FROM
KOSOVO**

[This article is a translated *Editorial* of *Yaderny Kontrol Journal*, No. 3, Vol. 45, May-June, 1999]

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Aggravation of the Kosovo crisis and NATO bombings in Yugoslavia in violation of international law contributed to a widespread opinion that US-Russian relations go back to the Cold War period. Moreover, official sources in Moscow and Washington argue that at present the relations pattern is much worse in comparison with the 1970s when both parties followed the unwritten rules to avoid uncontrolled and sudden tensions.

The prevailing of such a position reflects two aspects. First, a part of Russian political elite and its *pocket* mass media see for themselves no ways of political survival in open and democratic society, hence, striving for artificial isolation of the country, following the *basic instinct* of political self-preservation. Second, Yevgeny Primakov's intentions were not comprehended by his counterparts in the West who regard him as a conservative and a hard-liner in relations with the Western powers. The latter try to defeat Primakov, to corner him instead of taking into account Russian interests, which the Russian PM attempts to express in the most delicate and acceptable manner.

However, is it correct to speak about "*return to the times of Cold War*"? We guess, no. The problem has nothing to do with the Kosovo crisis: it's just a pretext. Root causes of current tensions should be found in early 1990s. After a sudden collapse of the Soviet Union (a pleasant but unexpected surprise even for those who dreamt of it), there was an illusion that everything was possible: global peace, one-polar world system (*Pax Americana*), and strategic partnership between two recent adversaries. In this climate of euphoria politicians considered themselves to be makers of history, they even tried to change the entire stream of history.

New Russian democratic leadership was tempted with the idea of democratic bipolar world. The confrontation was supposed to be replaced by cooperation but the world was to remain bipolar. Cordiality of US officials and their evident concern for new Russian authorities encouraged the latter and assured them in further Western support.

Nonetheless, it became clear very soon that the role of Russia was to be of minor importance since the USA seized the leading place in generating ideas. Despite high appraisal of Russian success in the first years of democratic and market reforms, it was the USA that had given birth to the concept of market economy and democracy, thus, leaving Russian diplomacy without these trump cards. What role was prepared for Russia? To assist the USA in spreading democratic values all over the world. However, the US Government is not a world government or UN analogue. It upholds American interests, although ideologically disguised with a *struggle for democracy*.

The United States from the point of view of their national interests was right to use Russian weakness in its own interests: this historic opportunity is a rare thing to happen and it should be exploited in full. At the same time, they did not consider one aspect: the US actions managed to convince even some democrats that global changes hadn't affected the essence of international relations, i.e. *balance-of-power* approach as a main criterion determining country's weight in the world.

When Russian democrats realized that the USA struggled not for common interests but solely for its own benefit (though very often US interests coincide with those of its allies) it was like a *cold shower* for them. It became obvious that there could be no independent foreign policy without an idea, without a concept. First wave of democratic foreign policy makers was unable to lay down this concept and, in fact, was not very willing to do that.

Primakov suggested a new concept of multi-polar world system. One can argue about its advantages and disadvantages, blame it for inner contradictions, or disagree with it entirely. However, it is necessary to admit that this theory can become a methodological foreign policy tool. It is good *for sale* on the world arena, it suits fine for geopolitical debate,

and it determines the independence of Russian foreign policy.

Yevgeny Primakov was not willing to spoil relations with the West on purpose. To be frank, his primary mission was to carry out a specific presidential order, i.e. to prevent or to mitigate for Russia NATO expansion to the East. It was a local task, which could not be accomplished without significant changes in the general foreign policy course aimed chiefly at revival of Russian independence in foreign policy matters.

Yevgeny Primakov began to play back. He must have understood that there should have been a point of optimal US-Russian relationship, a combination of non-confrontation and mutual benefit. At the same time, it was clear for him that in early 1990s this point had been left behind.

The USA profiting from short-term close relations with Russia didn't appreciate Primakov's efforts to reach the optimum by *cooling down* relations and getting rid of their declaratory component. The United States left without notice (on purpose rather than unintentionally) very cautious and disguised (but still clear) signals of Yevgeny Primakov, which implied that Russian-US relationship wouldn't be '*better than now*'. At the same time, there was a hint for aggravation of relations, i.e. violent return to the Cold War models, taking into account growing anti-Western and particularly anti-American sentiments. The coming election campaigns (both parliamentary and presidential race) may become a competition of anti-American nominees. At present, the Russian politicians may concede to US pressure to avoid confrontation. But the more Washington gets in short-term perspective from the weakness of current leadership the more difficult it will be to prevent a new Cold War after 2000. Hence, short-term benefits may transform into a great problem in a medium-term perspective in 18 months or so.

Current tensions may be regarded as pre-determined. Nevertheless, nowadays the parties finally have a chance to play back without vague diplomatic wording and find in a sincere and tough dialogue the golden mean of US-Russian relations to prevent most pessimistic scenarios of developments.

Summary

Yaderny Kontrol (Nuclear Control) Journal of the PIR Center for Policy Studies Volume 45, No. 3, May-June, 1999

Gen. (ret.) Vladimir Belous in his analysis "*Characteristics and Mission of Modern Neutron Weapons*" states that 'nuclear arms availability to a number of states, latent (so far) territorial claims to Russia, possibility of large-scale aggression result in a certain probability of nuclear weapons' use in combat. Hence, there should be elaborated a number of appropriate defensive measures. In these circumstances, one can hardly deny efficient deterrence potential of neutron weapons.'

Dr. Alexander Kalyadin, from the Russian Institute of World Economy and International Relations (IMEMO), in "*Russia at the Edge of Default in Fulfilling CWC Commitments*" says, 'Today Russian program of chemical weapons destruction undergoes a severe test of its durability. Financial situation in 1999 is rather unfavorable for planned continuation of highly costly works envisaged in the program, precisely the construction of socioeconomic infrastructure in the areas of chemical weapons dismantlement. Therefore, continuing financial crisis and the lack of foreign support to the program may delay the process of CW elimination.'

The issue contains Roland Timerbaev's "*Prospects of CTBT Entry into Force*", Maria Katsva's article on Russian licensing system, Abram Ioyrysh comments on recent Criminal Code amendments. Also included are information from nuclear and missile dossier, from PIR files on chemical weapons. We publish the draft bill "*On Export Controls*" and results of its discussion, involving State Duma deputies and staff.

PIR Center News

Summer 1999

1999, May 14. PIR Center held a meeting of its supreme body - the Executive Council. Director of the PIR-Center for Policy Studies in Russia Vladimir Orlov delivered to the Council an annual report on the results of activities in 1998. PIR Center work was declared to be fully compliant with the previously approved "*Main directions of PIR Center activities in 1997-1998*". The Council was also satisfied with the work of Vladimir Orlov in 1998.

The Executive Council adopted "*Main directions of PIR Center activities in 1999-2000*", including the structure of PIR scientific programs, the list of priority research, publishing, informational, educational and special projects.

The Executive Council made several decisions relating to financial and administrative area. It approved the fulfillment of 1998 budget, confirmed that financial means and grants in 1998 had been spent on projects in accordance with the goals, stated in the PIR founding documents. The Council adopted the 1999 financial plan of the PIR Center, presented by Deputy Director on Finance V.A. Zaytsev. Director of the PIR-Center for Policy Studies in Russia Vladimir Orlov was charged with the mission to find additional sources of financing to fully accomplish PIR research and scientific projects in 1999-2000.

The Council also considered an organizational issue. Upon the proposal of Vladimir Orlov, member of the PIR Executive Council R.M. Timerbaev was unanimously elected to be the Chairman of the Executive Council.

Executive Council Chairman Roland Mikhailovich Timerbaev, Ambassador Extraordinary and Plenipotentiary (ret.), is a leading Russian and world expert in the area of arms control and nonproliferation. He was born on September 27, 1927 in Moscow. In 1949 he graduated the Moscow State Institute of International Relations (MGIMO). Doctor

of Historical Sciences (dissertation "*Arms Control and Control over Disarmament*", 1982). In 1949-1992 he worked in the Ministry of Foreign Affairs of the USSR. Amb. Timerbaev took part in the elaboration of NPT, participated in the negotiations on arms control (SALT I, CTBT, etc.), in work of the Geneva Conference on Disarmament, the NPT Review Conferences (1975, 1980, 1985, 1990), the NPT Review and Extension Conference (1995). The last post in the MFA - Head of the Permanent Mission of the USSR/Russian Federation to the International Organizations in Vienna (1988-1992). In 1992-1995 - visiting professor, the Monterey Institute of International Studies. In 1994-1997 he was President of the PIR-Center for Policy Studies in Russia. Roland Timerbaev is the author of numerous books (*UN and Peacekeeping; Verification Problems; Militarism and Disarmament; Comprehensive Ban of Nuclear Tests*, etc.) and articles on nuclear nonproliferation issues. In 1998 he wrote a book *Russian and Nuclear Nonproliferation: 1945-1968*, published in February 1999 by Nauka Publishing House. Amb. Timerbaev delivered lectures in MGIMO, MIIS, and MEPhI.

1999, May 24. Director of the PIR Center Vladimir Orlov had a brief conversation with Indian Minister of External Affairs Jaswant Singh. In the course of discussion the parties touched upon the problems of India's position on CTBT, prospects of Indian-Russian cooperation and the role of external pressure. Jaswant Singh emphasized the positive changes in the US-Indian relations, taking shape after the Strobe Talbott's visit to New Delhi. He also pointed out that there were indications of a gradual reduction in tensions in bilateral relations with the USA and a hope for a breakthrough.

Analysis**UKRAINE'S NUCLEAR ENERGY
SECTOR: CHALLENGES AND
PROSPECTS**

by Victor Zaborsky,
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Abridged version

In February 1999, Ukrainian government officials and experts from the IAEA began discussion of Ukraine's nuclear strategy for the period up to 2030. At the request from the Ukrainian government, the IAEA is supposed to provide its advice either in 1999 or 2000. Whatever the recommendations might be, they are supposed to be implemented under the circumstances which would unlikely be much different from the current ones. And the current status of Ukraine's nuclear sector is miserable indeed.

This article is intended to briefly review such issues as safety of Ukraine's nuclear power plants, protests of nuclear plant workers, Chernobyl shutdown, construction of the two reactors at the *Khmelnitsky* and *Rivne* plants, as well as Ukraine's cooperation with Russia and the United States in the nuclear energy area.

Safety of Nuclear Power Plants

Ukraine has one of the largest nuclear energy programs in Europe after France, the United Kingdom, Russia and Germany. There are five nuclear power plants in Ukraine located at Chernobyl, Khmel'nitsky, Rivne, Mykolaiv, and Zaporizhye, with fourteen operational units (see Table 1). Nuclear power plants produce about 50% of consumed electricity. There are two research reactors: at the Institute for Nuclear Research in Kyiv and Sevastopol Institute of Nuclear Energy and Industry. Also, Kharkiv Institute of Physics and Technology possesses about 72 kilograms of uranium in bulk and in item form enriched up to 90%. There are two principal uranium mining districts in Ukraine, located in Kirovograd region, and Kryvy Rig region, including five mining and milling enterprises for ore processing.

Table1: Nuclear Power Capacity in Ukraine

Reactor	Type	Net capacity (Mwe)	Operational	Present status
Chernobyl-1	RBMK	700	May 1978	Shut 1997
Chernobyl-2	RBMK	700	May 1979	Shut 1991
Chernobyl-3	RBMK	925	June 1982	Operating
Khmelnitsky-1	PWR	953	August 1988	Operating
Rivne-1	PWR	420	September 1981	Operating
Rivne-2	PWR	420	July 1982	Operating
Rivne-3	PWR	954	May 1987	Operating
South Ukraine-1	PWR	953	October 1983	Operating
South Ukraine-2	PWR	953	April 1985	Operating
South Ukraine-3	PWR	953	December 1989	Operating
Zaporizhye-1	PWR	953	April 1985	Operating
Zaporizhye-2	PWR	953	October 1985	Operating
Zaporizhye-3	PWR	953	January 1987	Operating
Zaporizhye-4	PWR	953	January 1988	Operating
Zaporizhye-5	PWR	953	October 1989	Operating
Zaporizhye-6	PWR	953	1995	Operating

The world's worst nuclear accident at the *Chernobyl* power plant in April 1986 was the first call for increased attention to the safety of Ukrainian nuclear power generating facilities. Since then, a number safety-related incidents have occurred at the Chernobyl and other Ukrainian plants. 'The state of the nuclear industry is very worrying and the increase in the number of incidents calls for urgent measures to be taken,' says Alexander Smyshlyaev, First Deputy Minister of Environmental Protection and Nuclear Safety (MEPNS) and Head of the Administration for Nuclear Regulation. According to Smyshlyaev, for the first six months in 1998 there had been 37 incidents at Ukrainian nuclear power stations, compared to 23 incidents for the same period in 1997. The *Zaporizhyye* and *Rivne* power plants were the worst affected sites, with 14 and 12 incidents respectively, *Chernobyl* and *South Ukraine* (near Mykolaiv) plants suffered five incidents each, and *Khmelnitsky* station suffered one¹. In addition, three more accidents took place at *Zaporizhyye* plant in November 1998 and at *Chernobyl* and *South Ukraine* plant in March 1999². Overall, the

number of malfunctions at Ukraine's nuclear reactors increased 20% in 1998 over the previous year, says the *Ukrainian Nuclear Society*, an independent group of former senior nuclear plant managers and industry experts³.

Any serious safety improvements, however, are unlikely to take place in the near future due to the funding shortages. The lack of money has been constantly delaying the delivery of spare parts, equipment, instruments, and materials. Preventive maintenance may also be a victim of the lack of funds and specialized personnel, resulting in more unscheduled unit shutdowns. According to Nur Nigmatulin, former President of *Energoatom*, almost all operators providing Ukraine's nuclear plants with spare parts have left Ukraine's energy market, and other sources have not yet developed⁴. Electricity output vs. safety has become a constant challenge, especially in winter periods, when electricity consumption increases. For example, the Administration for Nuclear Regulation had ordered that the

only reactor at Chernobyl be shut down by December 1, 1998 because of safety reasons. However, the Ministry of Energy overruled that order, arguing that Administration's safety concerns are exaggerated and that the shutdown would drop electrical output drastically. 'They demand the [*Chernobyl - Ed.*] reactor meet international safety requirements - but that is hardly possible because it was constructed a long time ago. Ukraine is not ready for this winter and we can not have the reactor shut down,' argued Victor Stovbun, executive director of *Energoatom*⁵. At the same time, unplanned shutdowns have become more frequent at all of Ukraine's power plants, while planned shutdowns are often delayed due to lack of funds to pay for parts.

Strikes at NPP

Along with the challenges mentioned above, the safety-related problem of increasing concern is salary delays, which significantly decrease employees' incentives to operate responsibly. Wages arrears have become common in Ukraine since mid-1990s and have hit the nuclear sector as hard as any other government-controlled industry. However, employees of the nuclear power plants have been silent and patient for much longer than workers of other sectors, in part because, legally, they have rather limited rights to strike, and other forms of protest were not well developed. Under the 1995 Law of Ukraine "On Use of Nuclear Energy and Radiation Security", 'rallies, meetings, demonstrations, picketing, [...] blocking transport communications [...] at nuclear facilities [...] are prohibited.' The problem, however, was building up and came to the surface for the first time in October 1997, when workers of the *Khmelnitsky* power plant staged a series of rallies to demand payment of back wages, which threatened continued operation of the plant. The 600 employees of the plant had not been paid since February 1997⁶. The government and the power plant management were, however, able to come to terms and workers were paid late wages.

But the one-time deal did not solve the problem, and wage arrears continued. Another outburst of unrest of nuclear power stations' employees came one year later - in

September 1998. It started at the *Zaporizhyye* nuclear power plant, where employees had not been paid for 5 months, and the workers of the other four nuclear power stations immediately followed the suite. Each power plant delegated 80 employees to come to Kyiv and picket the building housing the Cabinet of Ministers of Ukraine⁷. Again, the government managed to quiet the unrest promising to pay back portion of the debt immediately, and schedule a graduate paying of the remaining debt.

The peace, however, did not last long. While the government had been desperately searching for funds to pay back debts for previous months, new wage arrears for current months were building up. By February 1999, when new series of strikes began, nuclear plant employees were owed more than 150 million hryvna (\$42 million)⁸. The February-March 1999 actions of protest were more vocal in terms of expressing demands, as well as more dangerous in terms of decreasing safety of nuclear power plants. In mid-February, nuclear workers began picketing government buildings in Kyiv, demanding dismissal of the *Energoatom* President Nur Nigmatulin. This time, the Ukrainian government had to yield and made a personnel reshuffle in the nuclear sector management. By the decree of the Cabinet of Ministers of Ukraine of February 18, Nur Nigmatulin was sacked and replaced by Nikolai Dudchenko, former General Manager of the *Khmelnitsky* nuclear power plant. Alexei Sheberstov, Minister of the Ministry of Energy, was also dismissed and replaced by Ivan Plachkov.

While signing decrees on the dismissals, however, the government tried to avoid making any promises to pay back delayed salaries, which forced the nuclear workers to resort to a new form of protest. At all five nuclear plants they set up tent camps and stayed there between shifts depriving themselves of sleep and food. Regulations at the nuclear power plants provide that employees in poor physical or psychological condition are not allowed to operate the facility. Having limited rights to formally strike, workers hoped that this provision would be applied and they would not be

allowed to take their working places, which would have the same effect as a strike. That trick did not work – management of the plants had been stating that workers are healthy enough to do their job. As a last resort, on March 6, the Coordination Committee of *Energoatom* employees sent a formal letter to *Energoatom* management stating that in two weeks, (a notice term required by law) they would have a legal right to strike⁹. Also, on March 10, employees of the *Rivne* power plant passed a resolution threatening to cut power output by 10% weekly if the government fails to make strong commitments to pay back delayed wages¹⁰. By early April, the government failed to take specific commitments concerning payment of wages arrears for it is clearly understood that there is no money to fulfil these commitments. However, it managed to convince the NPP workers to refrain from strikes and cut of electricity output. The time will show the efficiency of these measures.

The whole problem stems from the generally poor state of Ukraine's economy and the so-called *non-payments crisis*, a term describing a vicious circle where the overwhelming majority of Ukrainian enterprises do not pay their service providers or suppliers because they do not get paid by their customers, which, in their turn, do not get paid by their customers. Consequently, Ukrainian customers usually pay for only 6-7% of consumed electricity. The rest are paid in the form of products customers produce, if it is paid for at all. In 1998, nuclear power plants output power worth 4.5 billion hryvna (\$2 billion), but only 5.5% of that amount was paid by customers in cash¹¹. Obviously, the cash-strapped Ukrainian government does not have money to subsidize the nuclear energy sector, nor does it have effective leverage to make customers pay for electricity. What makes the situation even more desperate is that about one half of what the government owes to the nuclear plants has already been lost because of a recent sharp devaluation of the national currency – the hryvna – which fell 45% in September 1998.

Non-payments and late payments definitely undermine nuclear personnel's ability to work intently with a *peace of mind*, and consequently negatively affect security. According to IAEA estimates, 60% of the safe operation of a nuclear power plant depends on its personnel. The Ukrainian paper, *Den (Day)*, trying to draw attention to personnel-related nuclear safety, published an article entitled "A Hungry Operator at Nuclear Power Plant May Do Much Damage to the Country". The article refers to Ukrainian *hungry* coal miners, who 'depressed morally and physically', get down to mine and there neglect safety rules which results in lethal accidents. 'When employees of a nuclear power plant have the same state of mind, what kind of accident may it result in?' the article asks¹². Rally participants argued that their actions against non-payments did not affect the security of the plants and did not break the law. Chairman of the trade union of the nuclear power stations workers Alexei Lych, however, has stated that 'the worsening moral and psychological situation [because of salary non-payments - Ed.] may force the management to shut down the reactors.'¹³.

Unfortunately, a combination of human-related problems and the technological backwardness of most of the nuclear power plants in Ukraine suggests that the consequences can be much more tragic than just shutting down the reactor. In mid-February 1999, 28 leading Ukrainian nuclear experts in their open letter to the President Kuchma stated that the crisis in nuclear sector directly threatens Ukraine's national security. 'The industry [nuclear - Ed.] is degrading in all respects,' the letter pointed out, 'Nuclear power stations operate in dangerous conditions with an impermissibly low current frequency. The morale of the personnel wanes.' The experts warned that the nuclear sector of Ukraine is in a 'state of disintegration'. Government subsidies were suggested as the only way out of such desperate situation¹⁴. Meanwhile, because of the payment crisis, Ukraine's nuclear workers are leaving to take jobs elsewhere. Many of the specialists are Russians, and some have left to work in Russia, where they are paid up to 10 times more than in Ukraine.

Chernobyl Shutdown

Shutting down the *Chernobyl* plant is another safety issue that has brought about a great deal of scrutiny and debate, both domestically and internationally. Currently, at the *Chernobyl* station, only reactor No.3 is operational after reactor No.4 exploded in 1986, reactor No. 2 caught fire and was shut in 1991, and reactor No. 1 was shut down in 1997. In 1995, Ukraine and G-7 signed a memorandum on closing Chernobyl by the year 2000. This \$3.1 billion aid deal consists of two major components: construction of a new shelter over the destroyed reactor and completion of construction of the two reactors at *Rivne* and *Khmelnitsky* plants to compensate for the lost Chernobyl capacity. More than 90% of the radiation caused by the initial explosion on April 26, 1986, is still inside the old shelter which was hastily built and has become increasingly unstable. Also remaining under the shelter are some 200 tons of nuclear fuel. Repairing an old shelter would cost approximately \$760 million, and, according to Ms. Carol Kessler, the U.S. State Department Senior Coordinator for nuclear reactor safety, will have four phases. First, the structures of the existing shelter are to be stabilized, removing some of the most unstable walls and roofs. Second, a concrete shielding will be put around the destroyed reactor with alley access for robots. Third, to protect the shelter from rain and snow, an environmentally sound cover will be put in place. Forth, the project will help Ukraine develop a strategy to manage highly radioactive materials¹⁵. So far, the G-7 nations have been able to pledge only \$300 million, thereby causing a great deal of irritation in the Ukrainian government. Some financial support is expected from the European Commission of the European Union (EU) and the *European Bank for Reconstruction and Development (EBRD)*. Ukraine's contribution is \$50 million and an additional \$100 million to service the shelter over seven years¹⁶. *British Nuclear Fuels Ltd.* has already set up a group, the *International Chernobyl Consortium*, to monitor the state of the present sarcophagus and design work necessary to convert both the shelter and the reactor inside to an environmentally safe condition¹⁷. Overall, it would be fair to say that the

project on building a new sarcophagus is moving ahead slowly but steadily.

Completion of the Two Reactors

The second part of the deal – construction of the two reactors in Rivne and Khmelnytsky – is more controversial. According to the Ukrainian government, the completion of the two nuclear reactors, with an estimated cost of \$1.2-1.72 billion, is a major precondition for closing Chernobyl permanently. Construction of these two VVER-1000 reactors started in the mid-1980s, but was suspended after the Chernobyl accident and put on hold after the break-up of the Soviet Union in 1991 because of the lack of funds. The VVER-1000 reactors are of Russian design, two-thirds of which require spare parts produced in Russia. According to various estimates, the reactors in Khmelnytsky and Rivne are between 60 to 85% complete. The G-7 countries asked the EBRD for a loan to complete the construction of the two reactors. The EBRD indicated in 1997 that it would finance the project, but it has delayed a final decision due to concerns about the economic necessity of the new reactors and doubts that the loan will be repaid. Some Western countries have also questioned the safety of the new reactors.

However, before debating the amount and terms of the loan, the key question to be answered is: cannot Ukraine really do without the two new reactors should it shut down Chernobyl? After receiving a request for a credit from G-7 and preliminary examination of the project, the EBRD released a report in February 1997 saying that Ukraine did not need the two new reactors because it has a large surplus of energy that it is not using efficiently. The report also argued that rehabilitating Ukraine's existing thermal power plants, while improving energy efficiency, would be more cost-effective¹⁸. Under pressure from G-7, the bank eventually agreed in principle to finance the project, but its economic expedience is still being questioned. The EBRD is insisting that 'due diligence procedures', including public hearings, be completed before it makes the final decision. Such hearings took place in late October 1998 in Rivne, Kyiv and Neteshin (near

Khmelnytsky plant), and most of the comments from the Ukrainian public and participating Western experts were against the project¹⁹. According to Mr. Tobias Muenchmeyer, the International Coordinator of the *Greenpeace Nuclear Campaign*, Ukraine has an installed capacity of 54 gigawatts (GW, one billion watts) while the peak capacity level was in 1997 at 27 GW. He argues that the electricity shortages are caused by low efficiency and a deficit of fuel, not of power reactors²⁰. These arguments are supported by some US contractors, involved in energy-saving projects in Ukraine. The *Alliance to Save Energy*, supported by the US Agency for International Development, recently did an analysis, that shows that instead of spending \$1.2 billion to complete two reactors as proposed, spending just \$200 million on energy efficiency improvements would reduce energy demand so much that the unfinished reactors would no longer be needed²¹. According to Julia Zilberman, EBRD spokeswoman, the bank is committed to making a decision on the loan by mid-1999²².

While continuing to insist on the completion of the two reactors as a precondition to shut down Chernobyl, and to ask the EBRD for the credit, President Kuchma has reiterated that Ukraine will go ahead with the project with or without Western financial support. Russia appears to be the major partner to help out. Relying only on Russia's support would mean completing the stations more cheaply at the expense of safety standards, a scenario which is sharply criticized by many environmentalist groups and government agencies in Europe. Ukrainian and Russian experts have already drafted an agreement on the joint completion of the two reactors. The draft envisages that Russia will supply equipment and send experts to complete the reactors. During their informal summit in Moscow in September 1998, Ukrainian President Leonid Kuchma and Russian President Boris Yeltsin discussed the issue and in principle reached an agreement on the aid package. According to President Kuchma, Russia is expected to provide Ukraine with \$180 million in 1999 to help build the two reactors²³. However, it is not clear where cash-strapped Russia will get

that money given its current economic hardship and financial crisis. 'It is unlikely that the financial crisis in Russia will allow them to find money for us,' says Gennady Sazonov, an *Energoatom* official²⁴.

Russia and the United States in Ukrainian Market

At present, Russia and the United States are Ukraine's major partners in its attempts to solve the problems of nuclear energy sector. However, both powers compete for participation in Ukrainian projects striving for instruments to influence Ukrainian economy and policy.

One of biggest Ukraine's projections has been to establish its own nuclear fuel industry. The Ministry of Energy has been working on the options of indigenous nuclear fuel production since 1991. However, all the funds it managed to accumulate were not in hard currency and were lost to inflation. Producing its own nuclear fuel would spare Ukraine the expensive dependency on foreign sources that has plagued its nuclear industry since the country's independence. Since the collapse of the Soviet Union, Russia, the source of Ukraine's fuel, has raised the price of nuclear fuel 30 times. Furthermore, fuel deliveries have been disrupted, the quality of Russian fuel has been occasionally dubious, and Ukraine has been chronically short of hard currency to pay for the Russian fuel. Mikhail Umanets, First Deputy Minister of Energy, estimates that the costs of fuel production facilities would be repaid in four to five years²⁵.

To that end, in 1996, Ukraine announced a tender to build a nuclear fuel production facility. The two major competitors were *TVEL* and *Westinghouse*. *TVEL* won the race, having offered a deal which provides that Russian and Ukrainian raw uranium, 80% of which will be processed in Russia, and then shipped to a projected facility in Ukraine to complete the remaining 20% of the process. Although the project will not be launched until 2001 at the earliest, but potentially it is expected to save Ukraine Hr 50 million (\$27 million) annually in the nuclear fuel costs. *Westinghouse* bid about \$1.2 billion to complete the *Rivne* and *Khmelnitsky* reactors,

but the Ukrainian government has clearly indicated that it is more inclined to cooperate with Russia on this project.

The author's discussions with officials at the Ukrainian Ministry of Energy and Ministry of Environmental Protection and Nuclear Safety suggest three major reasons why *TVEL* won out over *Westinghouse*. First, building a uranium processing facility and completing the two nuclear reactors by *Westinghouse* would mean to opt for the US-type nuclear fuel, thereby squeezing Russia out of the Ukrainian market - a scenario which Kyiv would like to avoid for a number of political, economic and financial reasons. Moreover, the reactors in *Khmelnitsky* and *Rivne* were designed and constructed for Russian-type fuel, and completing them the way it was planned looked more cost-effective than re-designing them for the US fuel. Second, the terms and the price tags of the deals offered by Russia looked more attractive economically. And third, and probably most importantly, Russian terms of payments for fuel suit Ukraine much better than those of the USA. Having very strong doubts whether it can make cash payments in time and in the full amount, the Ukrainian government prefers to deal with a supplier ready to agree to alternative forms of payments. *Energoatom* and *TVEL* are considering an option of Ukraine paying in cash, T-bills and goods in kind, with each category amounting to about a third of the total price and with up to six-month grace period. For US fuel Ukraine is supposed to pay in cash only.

In November 1997, the creation of *TVEL-Energy*, a Russian-Ukrainian joint nuclear fuel venture, was finalized. *TVEL*, the Russian fuel maker, will supply nuclear fuel for Ukrainian power plants and take back spent nuclear fuel and bury it. From the Ukrainian side, the major party to the deal is the Ukrainian State Property Fund. *TVEL*, however, holds the largest percentage of shares - 35%. According to Yevgeny Kovalenko, Ukraine's *Energoatom* Deputy Director, both sides are considering an option of Ukraine's paying for Russian fuel proportionally in cash and barter. The products most likely to be bartered are steel,

metals, and chemicals. However, Kovalenko argues, 'if something does not work out, there is a possibility for fuel supply problems at [Ukrainian - Ed.] nuclear power stations. In such case, we could rely only on help from Russia, or we must simply cut off electricity to all those who do not pay.'²⁶. 'Something does not work out' fears have already started materializing. While the final deal with TVEL on payment methods has not been developed, Ukraine has to pay for fuel supplies from Russia mostly in cash. The 'free fuel for warheads' arrangement came to an end in late 1998, and for 1999 calendar year Ukrainian plants needed \$250 million to buy nuclear fuel from Russia. They have been unable to accumulate that amount and had to cut energy output. In late March 1999, reactor No.1 at the Zaporizhyye plant cut electricity output by 50%, while reactor No.3 at the South Ukraine plant cut output by 20%²⁷.

Another Ukraine's projection for the next century is introducing a new type of reactor which would meet international safety standards and help solve the spent fuel storage problem. In late February 1999, Mikhail Umanets, stated that by 2012 Ukraine wanted to have an operating Western-style reactor, and eventually replace some of Soviet-designed reactors with Western units. Western nuclear outfitters, including Westinghouse, have already approached Ukraine emphasizing the benefits of their reactors. Russia, in its turn, has made it clear that it is not going to give up and lose its traditional market to Westerners. Bulat Nigmatulin, Deputy Minister at the Russian Atomic Energy ministry, has told that Russia could offer Ukraine many advantages²⁸. The competition over the building of new reactors would not differ much from the earlier competition over building the enrichment facility and nuclear fuel supplies. Over the last three years Ukraine has not become wealthier to say the least, and US partners will still be interested in cash payments only, which Ukraine most likely will not be able to afford. Russian pro-nuclear lobby in Ukraine is still powerful. Thus, US companies have rather slim chances to win contracts to build power reactors and/or uranium reprocessing facilities in Ukraine as well as to supply nuclear fuel.

However, there is another area where US companies may succeed, namely building storage facilities for spent nuclear fuel at Ukrainian power plants. Storing spent nuclear fuel has become one of the most serious and costly problems for Ukrainian power stations. In the old Soviet Union, Ukrainian nuclear power plants had been sending spent fuel to Russia for reprocessing and storing free of charge. After independence, Ukraine's nuclear stations quickly filled up their on-site storage facilities and faced a constant dilemma: to continue sending spent fuel to Russia and pay for it, or to build new on-site storage facilities. The station hit hardest by this is the Zaporizhyye NPP, which with its six VVER-1000 reactors is the largest and most powerful nuclear facility in Europe. Zaporizhyye station generates 20-22% of all electricity in Ukraine. The storage problem emerged at the station back in 1993 and even an option to shut down one or two reactors was considered. Having reviewed many proposals to solve the problem, Ukraine opted for US assistance. A US company, Duke Engineering and Services, has offered a new and relatively cheap storage system of stockpiling almost 650 tons of spent fuel on-site and leaving it there for up to fifty years, which would make it Europe's largest radioactive waste dump. The project is being carried out under the Duke's contract with the US Department of Energy (DOE) worth \$5.7 million and a separate contract between Duke and the Zaporizhyye plant the amount of which has not been made public²⁹. Two other US companies - J&R Engineering of Mukwongo and Sierra Nuclear - are Duke's subcontractors. The US partners have been providing the Zaporizhyye plant with equipment and expertise to manufacture 12 storage casks a year. Each cask will be filled with 25 spent fuel rods, backfilled with inert helium gas, sealed by remote control, and transported to a concrete storage pad. The construction has gained speed since November 1998, when Russia's Krasnoyarsky krai authorities said they would no longer accept the waste from Ukraine for a price of \$280 per kilogram, which is way below the world price of \$1,000 for similar service. Zaporizhyye plant sends annually 120-200 tons of nuclear waste to the

Krasnoyarsk Chemical Company for storing³⁰. Totally, Ukraine sent to Russia 510 nuclear fuel rods in 1997, 560 rods in 1998, and expects shipments will increase to 600 rods in 1999. Ukraine and Russia reached a compromise agreement in mid-February 1999, and shipments of Ukrainian spent fuel will be resumed at a price \$330 per kilogram³¹. Despite reaching an agreement with Russia, Ukraine is intended to continue cooperation with *Duke*. As of mid-February 1999, most license paperwork for the project has been completed, and most of the storage components are being produced at Ukrainian plants.

Similar nuclear waste storage facilities are expected to be installed eventually at all nuclear power plants in Ukraine operating VVER-1000 type of reactors. When the 50-year lifespan for these facilities come to an end, the fuel waste could be shipped to a permanent storage which could be built in the Donetsk or Kirovograd regions as well as in the Chernobyl zone. According to Nur Nigmatulin, construction of temporary nuclear waste storage in Ukraine would cost 90 per cent less than shipment and storage in Russia³².

The most controversial issue in US-Russian relationship in the recent years is the problem of Ukrainian turbine supplies for the *Bushehr* nuclear power plant in Iran. This matter clearly demonstrated the US-Russian rivalry for Ukrainian market and ability to influence its policy. With respect to the turbine deal, Ukraine turned out to be 'caught in the middle of a US-Russian tug of war,' as Yury Scherbak, Ukrainian Ambassador in Washington, put it, 'where both the United States and Russia were applying *sticks and carrots*.'³³. In exchange for dropping the Iranian deal, the Clinton administration offered the Ukrainian government a package of small business loans, *Export-Import Bank* credits, and joint ventures and space cooperation. The United States also offered to sign an agreement with Ukraine on peaceful nuclear cooperation, which would provide US technology and fuel to Ukraine. At the same time, the US officials warned that if Ukraine goes forward with the deal, Ukraine would not get the loans and credits, the US administration would not sign an agreement on nuclear cooperation with Ukraine, and the US-Ukrainian economic and political partnership

would be dropped to the minimum level. On its turn, the Russian government warned Ukraine that if it backs out of the deal, Russia would not order components for its nuclear power reactors from Ukraine in the future. As a *carrot*, Russia offered its own credits and technology to Ukraine to complete the construction of two reactors at Rivne and Khmelnytsky, and later to supply the fuel to operate them³⁴. In the end, US policy prevailed, and on March 6, 1998, during US Secretary of State Madeleine Albright's visit to Kyiv, President Kuchma announced that Ukraine would abandon plans to supply turbines for the completion of the Iranian nuclear plant. Resulting from this pledge, Madeleine Albright and Gennady Udovenko, Foreign Minister of Ukraine, initialed a bilateral *Agreement on Cooperation Between the United States of America and Ukraine Concerning Peaceful Uses of Nuclear Energy*, which was formally signed in May 1998 in Kyiv by US Ambassador to Ukraine Steven Pifer and Ukrainian Foreign Minister Boris Tarasyuk.

One of the incentives for the Ukrainian government to drop the Iranian deal was US promises to encourage US businesses to invest into the Kharkiv-based *Turboatom*, a plant that was to have sold turbines for *Bushehr* NPP, and other regional enterprises. In June 1998, a US governmental delegation headed by Ambassador Richard Morningstar, President Clinton's adviser for the former Soviet republics, for the first time visited the Kharkiv region. Morningstar called US investments in the region a '*problematic issue*' but promised that the United States would look for ways to solve it. Many American investors find it difficult to do business in Ukraine, which is plagued by corruption, bureaucracy, and a complex taxation system. Subsequent trips to Ukraine by US government officials have brought little progress to the project. Statements made by the US Embassy in Ukraine have stressed that 'the ultimate success of the [Kharkiv - Ed.] mission would be enhanced by local efforts to provide an attractive investment climate by means of deregulation and privatization of enterprises.'³⁵. In general, US experience of doing business in Ukraine has been disappointing. An unfavorable investment climate and high level of corruption among Ukrainian officials have made the number of US businesses leaving

Ukraine outgrow the number of companies coming to Ukraine. US Secretary of State Madeleine Albright, while describing the agreement on nuclear cooperation as a sign of a US-Ukrainian strategic partnership, has stated, however, that 'investors recognize no strategic partner – they move their capital where it is safe, the rule of law is strong, and bribery is not an expectation but an outrage.'³⁶

Conclusion

In general, the prospects of Ukraine's nuclear energy sector are rather gloomy. Suggested state financing of the industry is hardly to be welcomed by the government, which realizes that there is no money for such financial support. The only thing that can provide for nuclear energy recovery is its ability to earn the money itself. However, the only source of such financial means is consumers, who are not ready to pay in cash, if pay at all.

So far we can expect that nuclear energy consumers will pay only for a miserable share of consumed electricity, what may result in new strikes of NPP personnel. Many projects, for instance, construction of nuclear fuel production facility or introduction of new-type reactors, may not come true.

Ukraine's nuclear power reactors will reach the end of their safe lifespan by about 2010. Then the replacement of nuclear equipment, which is manufactured in Russia, will be required. It is unlikely that Ukraine will be by then economically wealthy enough to chose US equipment and technologies, and more likely Kyiv will be forced to look to Russia again. The same reason will account for dependence on Russian nuclear fuel supplies.

As of today, the involvement of US companies in developing Ukraine's nuclear energy sector has been rather limited in part because they were not allowed to negotiate any contracts with Kyiv prior to the official signing of an agreement between the two governments and therefore lost momentum, in part because Russia had been wisely using its traditional economic and political ties with Ukraine, as well as Ukraine's technological dependence on Moscow. At the

same time, cash-strapped and corrupt, the Ukrainian government has created a climate extremely unfavorable for foreign long-term investments and joint projects. We can hardly expect a dramatic increase of joint projects, which potentially may lead US partners to bankruptcy or loss of capital.

¹ AFP, July 16, 1998.

² CNN Custom News, November 19, 1998; CNN Custom News, March 24, 1999; CNN Custom News, March 29, 1999.

³ CNN Custom News, March 24, 1999.

⁴ Business Information Service for Newly Independent States (BISNIS), Russia/NIS Division, US Department of Commerce, February 26, 1999.

⁵ *Kyiv Post*, December 1, 1998.

⁶ Radio Free Europe/Radio Liberty Newsline, No. 144, Part II, October 22, 1997.

⁷ *Den*, September 26, 1998, p.2.

⁸ *Kyiv Post*, March 4, 1999, p. 5.

⁹ See: *Fakty*, March 6, 1999, p.1.

¹⁰ *Fakty*, March 10, 1999, p. 2.

¹¹ *Argumenty i Fakty*, No. 8, February, 1999, p. 5.

¹² *Den*, September 29, 1998, p.2.

¹³ *Fakty*, September 29, 1998, p.2.

¹⁴ CNN Custom News, February 24, 1999.

¹⁵ *Kyiv Post*, November 21, 1997, p.3.

¹⁶ "Nuclear and Missile Trade and Developments". *The Nonproliferation Review*, Spring-Summer, 1998, p. 144.

¹⁷ Reuters, September 1, 1998.

¹⁸ *Kyiv Post*, February 27 – March 5, 1997, p.3; *Kyiv Post*, November 3, 1998.

¹⁹ *Kyiv Post*, November 3, 1998.

²⁰ *Kyiv Post*, September 4, 1998.

²¹ *Kyiv Post*, October 16, 1998.

²² *Kyiv Post*, March 4, 1999, p. 5.

²³ *Kyiv Post*, September 25, 1998, p.5.

²⁴ CNN Custom News, February 10, 1999.

²⁵ Improving International Nuclear Safety Program. Office of International Nuclear Safety and Cooperation, US Department of Energy. Web site <http://insp.pnl.gov:2080/>.

²⁶ *Kyiv Post*, September 4, 1998.

²⁷ CNN Custom News, March 29, 1999.

²⁸ Radio Free Europe/Radio Liberty, February 22, 1999.

²⁹ *Kyiv Post*, September 29, 1998, p. 4.

³⁰ See: AFP, January 26, 1999; CNN Custom News, January 31, 1999.

³¹ CNN Custom News, February 17, 1999.

³² Business Information Service for Newly Independent States (BISNIS), Russia/NIS Division, US Department of Commerce, February 26, 1999.

³³ D. Ottaway, D. Morgan, "US, Ukraine at Odds Over the Nuclear Technology Transfer". *Washington Post*, February 8, 1998, p. A25.

³⁴ *Ibid.* p. A25.

³⁵ *Kyiv Post*, June 19, 1998.

³⁶ Transcript: Remarks of Albright and Udovenko in Kiev, USIA Washington File, March 9, 1998.

Commentary

RUSSIAN POSITION ON CTBT AND PROSPECTS OF ITS ENTRY INTO FORCE

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Abridged version

The Preparatory Commission of Comprehensive Test Ban Treaty Organization (PC CTBTO) was established on the basis of the agreed resolution passed on November 19, 1996 in New York, at the meeting of the States Signatories of CTBT.

In the course of seven sessions held by the Commission, and numerous meetings held by its working bodies, was adopted a range of documents required for the progress of the preparatory process, and functioning of the provisional Technical Secretariat (TS) which is an operational mechanism of the Commission and has the status of an international organization.

Russia being one of the basic CTBT developers takes active part in the Commission work, confirming our adherence to objectives and tasks of the Treaty.

Recently, the Commission's discussions have been focused on speeding up the creation of CTBT verification mechanism and, accordingly, on financial support of the associated activities consuming over 70% of the Commission's annual budget. According to the Treaty, the basic components of the mechanism are: International Monitoring System (IMS) scheduled in prospect to unite 321 objects ensuring global registration of seismological, radionuclide, infrasound and hydroacoustic data, IMS-supporting International Data Center (IDC) and, finally, on-site inspections.

Western countries (USA, European Union members, Australia, Canada, etc.) insist on accelerated establishment of the verification mechanism (at the latest, - by 2001). In their opinion, the *de facto* functioning mechanism to verify the Treaty implementation would be a powerful argument proving CTBT availability and an additional tool of political influence on the countries still abstaining from signing or ratification of the CTBT, and a constraining factor for any state that may potentially infringe the Treaty.

Another group of countries (Japan, China, Mexico and the majority of developing countries) stands for a more pragmatic approach, taking into consideration real chances of CTBT coming into force. Such an approach calls for gradual increase of efforts and expenditures aiming at formation of the verification regime by 2005-2006. Russia on the whole shares this point of view.

The difference between the two approaches became, perhaps, more obvious during the Preparatory Commission session held in November 1998. The heated discussion did not prevent the participants from voting on the 1999 Commission budget, which could have created a rather undesirable precedent, as the work of the Commission is based on the principle of consensus. Efforts aimed at finding a compromise resulted in arriving to the generally acceptable alternative: the next year budget was agreed at the level of \$74.5 million, with general understanding that considering the funds not used in 1997-1998, the actual size of payments to the Commission budget would be reduced (the Russian payment in 1998 was \$2.5 million, or 4.3%). In this way, which is important, was preserved the earlier provided financing of those IMS objects that enhanced its performance in South Asia. In our opinion, it is especially important in view of the nuclear tests carried out there in May 1998.

Recently, TS has organized a tender on creation of a Global Communications System (GCS) to provide data transfer via satellite channels from IMS stations to International Data Center in Vienna, and further to the countries participating in the Treaty. The winner was *Hughes Olivetti Telecom* consortium, which had a ten-year, \$70 million contract signed. Presently, Russia and other countries concerned are busy with defining GCS configuration and interfaces.

One of the issues affecting acceleration of the verification mechanism is conclusion of bilateral agreements between TS and the member states of the Commission, covering activities aimed at establishment, modernization and functioning of IMS objects until CTBT becomes effective. In May 1997 the Commission approved a similar draft agreement concluded with Canada. However, there are legal problems with domestic legislation of many countries concerning privileges and immunities of TS personnel, and exemption from taxes and other duties on the imported equipment.

Under such conditions, TS has chosen a rather pragmatic way: to do a part of the job through correspondence with the member states of the Commission. Willing to start with IMS objects in Russia, we exchanged letters with TS in June, 1998, discussing examination of the sites for relevant objects location. TS had concluded a contract with the Russian contractor, the Scientific Research Institute of Pulse Technology (NIIIT Minatom) for the amount of \$660 thousand for diagnostic study of 12 sites by the end of 1998. As for the appropriate agreement with TS, our version of the text is in the stage of modification now.

The 1999 Commission budget provides for appropriate funds for implementation of the Russian proposal to organize in 1999 in our country a special training course on on-site inspections and introductory training course for Eastern Europe countries on IMS-related issues.

Another concern of the Commission is the taxation of TS activities aimed at creation of the mechanism to monitor CTBT implementation. Direct and indirect taxation of such activities in the countries involved is an additional burden to the Commission budget (about \$5 million). TS repeatedly came up with the idea of exemption from such taxation. However, many countries including Russia see no grounds to agree with that, because the domestic legislation does not allow doing this before CTBT comes into force. The most realistic way out appears to be in concluding bilateral agreements

between TS and appropriate governments on creation and modernization of IMS facilities.

During the period of nearly 40 months, the Commission has notably advanced in development of documentation regulating financial issues and the staff. Apart from that, new Financial Code and TS staff regulations have been accepted (earlier, the Secretariat followed the appropriate UN documents). The staff regulations legally state that the personnel will have no career prospects in TS. In accordance with this document, the Commission has charged its working group dealing with administrative and budget issues to intensify the drawing-up of staff regulations, stating ultimate terms of service in the Secretariat, level and scope of compensations to TS employees, and other aspects of personnel policy of the organization.

In accordance with the objectives and tasks of the Preparatory Commission, and taking into consideration the importance of the Treaty from the point of Russian national interests, we are very concerned about promoting Russian representatives in TS to decision-taking level. Today, there are 161 employees in TS including 94 professionals representing 55 countries. Russia has five professional posts, including one D-1 (Director of On-Site Inspection Department), and two junior positions (G-6).

As of March 23, 1999, CTBT, which was open for signature on September 24, 1996 in New York, was signed by 152 and ratified by 33 countries. Provisions of Article XIV of the Treaty provide for its entry into force after ratification by all countries possessing, according to the IAEA, nuclear power and research reactors and officially participated in 1996 in negotiations on CTBT development at the Conference on Disarmament in Geneva. There are 44 such states in all, including nuclear *five* and Israel, India and Pakistan. In fact, for CTBT to enter into force it is necessary that all countries having certain potential for creation of nuclear weapons join it, which would reliably provide nonproliferation trend of the Treaty.

Article XIV stipulates that if the basic condition of CTBT coming into force will fail to be met three years after the date of the anniversary of its opening for signature, the

conference of the states ratifiers may be convened to consider the measures which can be undertaken to accelerate the ratification process in order to facilitate its early entry into force. Article XIV wordings altogether do not give any grounds to consider such a conference authorized to change or to remove the basic requirement of CTBT entry into force.

In spite of apparent discrepancy in Article XIV wording regarding terms of the first conference (in 3 or 4 years after opening CTBT for signature), the majority of the countries for political reasons tend to convene it in autumn 1999. Basically, we do not object to possible calling of such a conference in autumn 1999, provided the decision, should it be taken, would not create a precedent for interpretation of other Treaty provisions.

Informal consultations were carried out in Vienna in late 1998 where both the states ratifiers and the states signatories were present. The consultations were basically focused on terms, places for negotiations, organizational and financial aspects of the conference. In general opinion of the consultations participants, a wide range of the states should take part in the conference, both having signed and not having signed the Treaty. The conference could result in accepting a brief declaration appealing to the states not having joined CTBT (especially those whose joining may influence the Treaty validation) to make it as soon as possible.

A number of Western countries, first of all Australia and Canada, come up with the idea of using a "*provisional CTBT application*" mechanism, which, in their opinion, would allow to intensify the process of Treaty ratification.

We consider the idea of "*provisional CTBT application*" to be extremely dangerous. Its implementation would result in washing out the link joining nonproliferation aspects and universal character of the Treaty which was hard to create, and in reduction of political pressure on the countries which in the CTBT context are of key importance for strengthening the nuclear nonproliferation

regime. Besides, it may create a negative precedent for the negotiation beginning at the Conference on Disarmament in Geneva, aimed at prohibition of fissile materials production.

In its approach to CTBT ratification, Russia takes into consideration the overall situation around the Treaty, attitude of other nuclear countries, and the progress of signing and ratification of Treaty by other countries, whose joining is critical for CTBT entry into force. On a routine level, we have already started the preparatory process for submitting the Treaty to the State Duma for ratification, although the chances for its prompt ratification are very low, taking into account current political atmosphere in Russia.

By April 1999, there have already been 33 ratifiers. Among them there are Great Britain, France, Germany, Japan, Australia, Austria, Brazil, Spain, Slovakia and Peru. In autumn 1997, CTBT was brought in for ratification to the US Senate. The situation with the treaty in the United States reminds of vicious circle. Despite resolute statements of the Clinton administration and its striving for ratification, the US Senate links CTBT adoption with consideration of amendments to the ABM treaty. The executive, however, would prefer to introduce agreements relating to ABM only after the START II ratification by the Russian parliament. At the same time, Russian State Duma sees compliance with the ABM treaty as a prerequisite for START II ratification. That's why Senate consent is very difficult to get, although the Clinton administration is ready to take decisive measures for that purpose.

The preparatory process of the Treaty ratification was commenced in China. China tends to keep pace with other *nuclear club* members and *threshold* states, especially India. Hence, the Chinese try not to boost ratification, following the events in South Asia and developments in other *nuclear five* parliaments. However, on March 26, 1999 President Jiang Zemin stated that the Chinese Government would soon submit the Treaty for consideration of the National People's Congress.

CTBT will fulfill its task only if it manages to preserve its universal character. First of all, it is necessary to have CTBT signed by all *threshold* countries. In this context, the intentions of India and Pakistan to sign the Treaty are most welcome.

Analysis**FIRST STRIKE CONCEPT AS AN
IMPORTANT COMPONENT OF
MODERN NUCLEAR POLICY****by Igor Nikolaichuk,
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Translation into English. Abridged version

After the end of the Cold War, opinions on the nature and purpose of the first nuclear strike in the form of a sudden nuclear missile attack (SNMA) have undergone radical revision.

For the USA, the threat to be subjected to a SNMA (meaning a disarming counter-force strike) has lost its acuteness, since the parameters of nuclear potential of this country compared to the present potential of strategic nuclear forces (SNF) of their hypothetical opponents give the Americans a basis for declaring the *asserted non-destructiveness* of the national nuclear forces¹.

For other countries, the threat to be subjected to SNMA though exists theoretically, in practice has lost any political, military or strategic meaning. On the other hand, their preparation for performing a sudden nuclear missile attack (unless it is not an irrational act of despair) is already impossible for purely political reasons.

We can state the idea of a first sudden massive nuclear missile strike resolving the outcome of a conflict between nuclear superpowers for the benefit of the side managed *to press the pushbutton first*, has already become a part of history even in military theory.

At the same time, as the threat of full-scale nuclear war becomes more and more hypothetical, the gravity center of practical use of nuclear potential of major nuclear powers is moving from military strategy to political area. Simultaneously grows the role of nuclear weapons as a new and fairly specific tool of military diplomacy. It is in

this sphere that we observe a seemingly sudden for the improved international climate expansion of the discussions concerning the same first strike issue.

Still it is necessary to make a reservation. A subject of such discussions is not the classical *first strike* of nuclear confrontation times, but the boundaries of advisability and limits of determination of one of the parties to use available nuclear weapons first during a conflict. It is the "*first use*" case or, on the contrary, "*no-first-use*" that gradually become the central issue in the discussions of nuclear problem and its political aspects.

It is necessary to say that the topic of *non-retaliatory* use of nuclear weapons after US refusal to guarantee against its first use of this weapon, and the Russia's well-known decision to admit the possibility of the first nuclear strike under certain conditions, arouses a lot of interest. Declarations on the possibilities of using or not using nuclear weapons first are widely used in practical diplomacy, which, in view of theoretical underdevelopment of the subject for the post-Cold War conditions, creates lots of ambiguous situations and leaves sensation of short talks, which may destroy confidence in the relations between countries.

First Strike Problem and Declaratory Policy

In the modern conditions of rapidly changing political and military situation, the government bodies responsible for maintenance of national security see their primary task in elaborating new concepts of nuclear policy, which would allow to use with maximum efficiency the existing nuclear potential to achieve a wide range of goals in the field of foreign and, in some cases, internal policy. A solution to the problem can be associated with dynamic change of directions and character of the state nuclear policy, first of all - doctrine directives and officially declared principles of nuclear facilities use.

In practice, *political reconfiguration* of nuclear potential is implemented through preparation and release into circulation of various official declarations and open government documents giving unambiguous

(or, on the contrary, obviously ambiguous) explanation of government's intentions regarding chosen principles of nuclear weapons and other nuclear facilities use in various hypothetical situations. Technical or military operation measures are of secondary importance in this case. Certainly, it is assumed that any activities of the kind take place in the conditions when there is an appropriate external social and political environment capable of adequate response.

Purposeful activities aimed at definition of acceptable principles and scenarios of using nuclear weapons, as well as the activities intended for bringing appropriate information to interested parties and versatile subsequent interpretation of the similar information is now called the declaratory policy.

Declaratory policy should not be rigidly adhered to the issues of strategy and tactics of nuclear forces. It is not of the international legal obligations nature, and actually is the tool of what is called "nuclear diplomacy" nowadays.

Although declaratory policy is closely related to other aspects of state nuclear policy, it is a fairly independent element of this policy, meaning that with all phrasing it does not have to be attached to any large-scale nuclear potential restructuring or build-up programs.

This policy should whenever possible precisely define a set of the circumstances in the course of development of an armed conflict, at which the political and military leadership of a country will be compelled to begin preparation for implementation of the first nuclear strike, down to the level of studying tactical details of the operation. In other words, declaratory policy should mark out for potential or direct opponents the limits of situation development, which the leadership of the particular country considers as absolutely unacceptable and justify the use of nuclear weapons first.

This rather general provision means that a signal about exceeding a tolerable for one of the sides level of conflict development in this case is a pre-determined and inevitable

reaction announced in a contradictory way. Still, the form of such systematic response is shaped only as a first nuclear strike. It is also important that the similar counter-measures, which in fact are only possible (hypothetical), are openly announced as having no alternative.

Forestalling a detailed consideration of the above-mentioned internal contradictions of declaratory policy, it should be specified, that in certain limits it should be realistic and be based on certain guaranteed material basis. An unconditional requirement here is inclusion of the provision about the opportunity of using nuclear weapons first in normative documents on the military structure and in the state's military doctrine and the Supreme Command instructions on military and strategic issues in particular. Certainly, the technical part should also be ensured. As American experts in nuclear strategy D. Gompert, K. Watman and D. Wilkening put it, it is very risky for the USA to threaten with measures for which they are not ready. If the USA fails to carry out their threats, the subsequent threats would be less meaningful².

An important specific feature of declaratory policy is that it carries the mark of its inner discrepancy. Declared within its frames hardness and unambiguousness of intentions to undertake the most radical of all possible political steps, i.e. use nuclear weapons first, as well as the necessity to clearly designate efforts on comprehensive provision of this step, at the same time means that it shall not oblige the declaring country to take any precisely marked particular response actions. Declaratory policy fails if the state associates itself legally or otherwise with *assurances* of the first strike in certain conditions. Actually, the role of declaratory policy should be reduced to unilateral implementation of *the right* for an unlimited military response. At the same time, the question whether this right will be realized or not, or some other form of the response will be found, should always remain open. In this connection, it seems that any attempts to create something like *principles of inevitable nuclear punishments* (the idea some experts in Russia stand up for), especially in the present period,

contradict the essence of declaratory policy not only because of the complexities of preparing scenarios of *pre-emptive nuclear retaliation*, but because of some defects inherent in this policy as such.

The first one of the defects is the following. If we follow the rules of international law, whose primacy over national legislation is admitted by governments of many democratic countries, *the right on appropriation of the right* to use nuclear weapons first can be put under serious doubt. Transparent associations with criminal jurisprudence, eternally discussing the issue of "*exceeding allowable limits of self-defense*" only show that *the right* to use weapons rather poorly regulates the *practice* of its use in real situations³.

From this point of view it is necessary to recognize, that if we abstract from an untypical for the moment task to support strategic stability in bipolar world and military parity conditions, which was earlier solved within the framework of fairly convincing theories of *central* nuclear deterrence, the rational nuclear doctrine should provide either refusal from the use of nuclear weapons in a broad sense (evidently, this alternative can be excluded from consideration), or *nuclear retaliation*, not for the damage caused in the course of conflict, which will be admitted *unacceptable*, but for the sole fact the conflict was unleashed by the opponent, which is considered *unacceptable* for national security of one of the sides involved in this conflict. Probably, this analogy will not seem to be faultless, however, we shall take the risk to say that the stereotype behavior like "*Dallas police first shoots, then thinks*" is the most suitable metaphor for describing the principles of *full-weight* declaratory policy called to ensure initial constraining from probable escalation, or even beginning of acute conflict situations.

In this connection, it is also important to emphasize, that the problem of working out the criteria of *unacceptability of the conflict*, which would be taken into consideration by the opposite side while assessing the consequences of decision-making on destabilization of situation, is nevertheless

easier, than development of criteria of *unacceptability of damage* in conflicts at regional and especially local levels.

The second negative moment complicating formation of adequate declaratory policy in modern conditions is obvious deficiency of rational scenarios of military use of nuclear weapons in general, and first use of the latter in particular. In this context, we can see the aspiration of some experts in military strategic area and military leaders to present the existing tactical and strategic nuclear weapons either as some kind of *a reserve of the Supreme Command*, which can be used in critical military situations in a wide spectrum of conflicts, or as the *technically preferable* weapons. If we put the question in this way we may expect that even in the conflicts of low intensity and in particular in an armed conflict with the opponent possessing supremacy in conventional weapons, but having no nuclear weapons at his disposal, the first strike becomes *absolutely expedient*, and the only thing needed is the necessary field situation or suitable targets selected.

Thus, *the political* component of the nuclear weapons issue in this context contradicts its *military* component, and nuclear weapons seem to tend to turn again from political weapons, ensuring certain self-restraining function, to *the big bomb* of the late 1940s.

The following aspect should also be noted. Earlier, the necessity of *the first strike* was in many respects deduced from diverse variations on a theme of *the necessity of maintaining strategic stability*. For example, many Russian experts considered it expedient to use nuclear weapons first after the opponent would perform gradual destruction of the nuclear systems by means of conventional high-precision weapons, up to the level after which it would be already impossible to deliver the opponent a required (unacceptable) damage. Evidently, the threshold number of the systems *permitted to be destroyed* could be precisely calculated. On the other pole of the opinions concerning the first use of nuclear weapons, are the attempts to represent such use as a component of modern gunboat policy.

To conclude all above said, effective declaratory policy in its modern understanding should go beyond frames of general cautions about the opportunity of using nuclear weapons for *prevention of defeat*. From the theoretical point, the efficiency of such a policy is really guaranteed if the first nuclear strike in the political military meaning turns into a means of achieving *equivalent* reaction. It is clear that in the present conditions of *diffused* and badly structured threats, the field of situations requiring adequate response essentially extends. Besides, in the conditions of overall weakening of military power of a certain country possessing nuclear weapons, one can expect a lower threshold of such a reaction. In this conditions, even more complicated becomes the issue of the opportunity of controlled de-escalation of conflicts, or even their stabilization. For example, if the use of nuclear weapons will not lead to the total destruction of the opponent, its consequence can be a transfer of the conflict to a phase of total war. It is also clear that if the first party to strike will try afterwards to realize the stage of total destruction of the opposing side, this will mean nothing but a pre-planned use of nuclear weapons as a tool of *preliminary frustration of opponent's plans*. Under such conditions, it makes no sense to speak about any *equivalent reaction*. Thus, the rationality of declaratory policy again appears associated with starting mechanisms of restraint (in some new, specific quality), instead of trying to create conditions to settle the conflict.

First Strike and Weakness of Force Paradox

The contradictory problem of *weakness of force* has recently came up in connection with the American nuclear planning experts' attempts to associate the opportunity of using nuclear weapons first with the actual problem of providing regional containment. Upon a closer examination of this issue were revealed numerous complex collisions coming from the necessity to choose the tactics of using nuclear weapons in real conditions.

Today, there is a conceptual vacuum in understanding what really is the first nuclear strike. More often, the task of employing the

first nuclear strike in the context of regional containment is treated as purposeful and to some extent limited use of nuclear weapons of low yield against enemy's targets of strategic importance. First, it is understood that the use of such nuclear weapons allows to abruptly increase fire power of the troops involved in a conflict, which, in turn, allows to achieve a fast and final victory with minimum losses for the party having used nuclear weapons. Secondly, the sole fact of deploying low yield nuclear weapons allows to increase dramatically real containment of average power level countries manifesting aggressiveness (for the USA, such countries are Iran, Iraq, North Korea, etc.) from their use of WMD.

However, having carefully studied this issue, a number of US Air Force analysts state (certainly, their point of view is not official), that the use of *micronukes* in the above situations obviously do not meet the cost-efficiency criterion. It is clear at the very beginning, that the possibility of guaranteed destruction of *the regional strategic targets*, which can actually be such politically unimportant objects as control points, aerodromes, strengthened defense areas, etc. is in no way comparable with *the political price* of the threat of their destruction by nuclear weapons, i.e. those by political costs, which will accompany expansion of tactical nuclear weapons in one or another regional theatre of operations. Certainly, such political costs will be even more for the country using nuclear weapons first. It is also necessary to take into account that the first use of nuclear weapons in a regional conflict against the opponent not possessing nuclear weapons will destroy the now existing fragile informal consensus concerning nuclear weapons ban, even if the conflict is settled from the military point. The world will find itself in a basically novel situation from the point of modified conditions in maintaining international security. For example, one can expect removal *de facto* of all restrictions on proliferation of nuclear weapons or realization of *not civilized* ways of retaliation for the use of nuclear weapons, the humanitarian consequences and economic losses of which it is difficult to predict.

Analysis of the probable scenarios of situation development after a nuclear strike gives grounds for doubting the reasoning about that the value of such strike from the point of reducing possible casualties in strength. Even if we assume that the use of micronukes will help to prevent destruction of a completely surrounded demoralized group of American troops, it does not mean the possibility to keep losses at an acceptable level in subsequent conflicts, which will be most probably carried out with intensive use of nuclear weapons.

In opinion of the US experts, more realistic is the scenario of deploying tactical nuclear weapons for containing potential aggressors from using WMD against US troops located abroad, or preventing attacks of those aggressors on the US allies having the relevant assurance. However, one should bear in mind that the *mass* or *sensitive*, i.e. exceeding a certain level, use of WMD against a large nuclear power having preponderance in conventional forces at the initial stage of a conflict is hardly probable and can be seriously taken into consideration only as an act of despair and retaliation at some advanced stage of the conflict. The *nuclear* party will face a complex problem of principle substantiation of an opportunity of using nuclear weapons to prevent or respond to a chemical or biological attack. This circumstance, being rational from the military point of view, contradicts for example with top-level purposes of US nuclear policy to *widen the gap* between nuclear and conventional weapons (for example, this follows from the nonproliferation policy priority), and not to *narrow* it.

First Strike and the Problem of Restraining Proliferation and Use of Weapons of Mass Destruction

The basic principle of declaratory policy has always been, as already said, the secured right to give an equivalent response to the opponent's use of WMD. In the conditions of bipolar world, a distinct classification of retaliatory strikes was assumed: the opportunity of nuclear retaliation was determined for the USA and the USSR as a means of containing nuclear attack;

biological or chemical retaliation should be used for containing accordingly biological or chemical threats; and the conventional armed forces were supposed to be used for containing conventional attacks.

In the Cold War period, US declaratory policy was actually built on a *total* nuclear intimidation for the purpose of deterrence with the help of nuclear weapons of all possible threats: nuclear, conventional, etc. Evidently, the Americans explained that the threat of unleashing nuclear war was necessary for containing an attack of Soviet conventional armed forces being superior in quantity against NATO allies. The USA persistently rejected to leave the concept of using nuclear weapons first, despite of the pressure offered by the world community.

After the end of the Cold War, in the conditions of the US domination in military power comparing to other countries, it turned out that the United States will have to use only conventional weapons against weak opponents (being not recognized as sufficient for implementation of deterrence effect), and nuclear weapons for containing possible threat of using biological or chemical weapons.

It seems that the following approach to structuring declaratory policy would be logical. Major nuclear powers openly reserve the right for nuclear weapons response to the threat of any WMD attacks, and for the symmetrical response to the threat of any attacks of conventional arms. There are no exclusions for the opponents carrying allied obligations with the states possessing nuclear weapons. However, this policy is mentioned by US government as contradicting the American *negative* assurances of security⁴.

There is an alternative proposal to formulate declaratory policy of the USA and other large nuclear powers in a way to reduce the role of nuclear threat as a deterrence means to the maximum extent and, accordingly, to increase the role of retaliatory strike by means of conventional weapons. It was offered to announce nuclear weapons as the means intended only for prevention of nuclear strikes at the territories of other

nuclear countries, their armed forces abroad, or their allies' territories. This way, the non-nuclear weapon countries signed the Non-Proliferation Treaty (NPT) or similar agreement would get assurances of nuclear non-use. The value of the proposal is that it allows the country having accepted such a declaratory policy to play a major role in restriction of nuclear weapons role, which will be reduced only to the function of containment use of the same weapons.

Theoretically, it is possible to create conditions for the leading nuclear powers (certainly, the United States are the first) to completely rely on their superior conventional weapons in the field of containing all forms of aggression even on the part of the third countries having limited nuclear potential. This doctrine assumes that the leading military powers will abstain from the use of nuclear weapons in any circumstances. Such a declaratory policy would lay in a racecourse of long-term strategy aimed at cancellation of all deliverable types to WMD all over the world.

However, the reality too much differs from these ideal schemes. As it becomes evident that more and more states strive for nuclear weapons, the increasing number of the experts and politicians are inclined to think that it is acceptable to turn the threat of nuclear counterstrike into the *working tool* of regional stability support. Less utopian alternative of the declaratory policy is the one admitting possibility of nuclear counterstrike as a response to a nuclear attack on the territory of a major nuclear power, and using conventional weapons in cases of WMD threats against its troops in other countries, or against its allies.

Theorists of international relations generally object to associating the use of WMD and possible nuclear counterstrike. In the modern conditions, it is necessary or at least desirable, to ensure multi-variant approach to possible response in this situation. Besides, it is pointed to the possibility of intergovernmental contradictions rise even while discussing when the *nuclear* leader of a coalition will use or will not use nuclear weapons. In a similar situation, it seems

expedient to refuse from revision of the existing doctrines of using nuclear weapons first, and respond to growing danger on the part of chemical and biological armaments, like in many other cases, through making *obscure declarations*. Such a policy would simply emphasize the fact that any country applying WMD against a nuclear power or its allies *will suffer from serious consequences*, without mentioning particular means of counterstrike.

It seems that the main drawbacks of such a *blurred* position are the following. First of all, it does not actually allow to use the concept of nuclear deterrence that has proved its political efficiency properly and, secondly, it does not lead to a *break-through to a post-polar world*, as it admits the opportunity of the first use of nuclear weapons for the purposes of containing conventional armed forces attack. Thus, the first strike using WMD is indirectly legitimated and, accordingly, the ability of basic nuclear countries to contain biological or chemical attacks is undermined.

In foreign experts' opinion, this *indistinct*, blurred policy does not actually provide an effective deterrence. A perfect declaratory policy would be the one, which is ultimately concrete on the one hand, and does not limit the opportunity of *definite counterstrikes* on the other hand.

Here, it is necessary to keep in mind the following apparent circumstance. Basically, the ability of basic nuclear powers to use nuclear weapons after their opponent has made an attack is beyond any doubt. The question is, can we trust these powers declarations that they will make these steps against a weaker, though aggressive opponent, who has not used nuclear weapons first.

With this respect, the following solution is offered. An opponent's realizing the determination of a nuclear country to respond with a nuclear strike most reliably manifests through distinctive understanding of priority of the threatened nuclear country national interests which at the moment are put at stake. The threat of a nuclear response seems quite real when vital interests are

affected, irrespective of whether the opponent has used nuclear weapons first. In a simplified variant, it is obvious that if a large city was attacked with the use of biological or chemical weapon resulting in millions of victims among civilians, the attacked nuclear country, can response with a nuclear counterstrike. In this connection the potential victim is interested in preliminarily announcing its readiness to *strike back* with a nuclear attack first, and thus to try to prevent this attack.

Modern Declaratory Policy of Major Nuclear States

American politicians and top ranking military men keep repeating that the central question of the US taking or non-taking the commitments not to use nuclear weapons first is the question of influence of the doctrine of non-using nuclear weapons on containing parameters. Usually, this problem is analyzed from the point of the impact of the doctrine on three levels of deterrence: strategic (central), regional and conventional.

According to existing opinions, preservation of modern efficient and combat-ready globally containing strategic nuclear forces in the structure of the US Armed Forces is a top priority of American defense policy. However, it is also emphasized, that the strategic deterrence is considered by American officials only as a defensive measure, and a full-scale nuclear war is excluded from the list of the ways to achieve the purposes of national security.

American military science has come to conclusion that under the present conditions there are no rational scenarios of combat operations justified from the military strategic point of view, in the course of which it would be necessary to make first (even very limited in terms of scale and objectives) nuclear strike. There are also justified data proving that from the point of public opinion such a strike would be completely unacceptable. Thus, serious problems with its political legitimization emerge.

At the same time, it is believed that assuming obligations not to use nuclear weapons first would not have any influence on a regime of

maintaining strategic stability in the conditions of so called *central* deterrence, including containing full-scale first nuclear strike against basic nuclear powers. On the other hand, long-term consequences of taking such obligations are believed to be rather uncertain and even negative, as there is a very wide range of possible further development scenarios. In this connection, the majority of experts believe that in view of the problem of central deterrence, the declaratory policy based on acceptance of one-sided obligation not to use nuclear weapons first is of no serious importance.

Coming over to the issue of interdependence of declaratory policy and regional containment, one should not forget that the classical approaches to realization of containment at a regional level have their roots in the era when NATO adopted a flexible response strategy. At that time, the basic purpose of declaratory policy on the part of the West consisted in creation of the situation of strategic uncertainty of the results in case the Soviet Union would take decision to attack NATO countries. For the basic variables in this *equation with many unknowns* were taken such factors as the defensive potential of conventional NATO forces, ability and readiness of NATO to make nuclear strike first, the opportunity for the USA, the UK or France to take independent decisions regarding nuclear planning, including *uncoordinated* nuclear strike by national nuclear forces. Under such conditions, adoption of the single-sided obligations not to use nuclear weapons first was considered absolutely unjustified, as it reduced the *level of uncertainty* for the probable opponent in conditions of crash of conventional NATO defense. It is also important to take into account that Western countries used to carry out the policy of rejecting their readiness deliberately to perform their international public obligations in nuclear area even if they had accepted obligations of not using nuclear weapons first. This kind of policy was considered justified, since it created one more *direction of uncertainty* for the USSR. And in this connection the gradual strengthening of conventional defensive NATO forces in Europe, which would be considered as some

kind of alternative declaratory policy, was declared to be the main direction of political and military development.

In addition, the second basic argument for the benefit of refusal to undertake such commitments was also mentioned. It concerns the strengthening of the so-called unity of the Alliance. Opponents of this kind of obligations usually reasoned that this approach could destroy trust among Europeans (especially in Germany), in the strength of Euro-American union, which was the core of entire NATO and strategic security of Western Europe. At the same time, there were ideas about the necessity of strengthening the alliance at the expense of gradual decrease of the role of nuclear weapons in achieving *reasonable proportions* of the conventional and nuclear weapons combination.

Despite the radical changes in the international situation, the arguments of this kind are still widely used both in scientific discussions of the format of new declaratory policy of the USA, and in the Clinton administration official documents. And the situation in Europe at the beginning of 1980s is taken as a model for developing modern approaches to realization of regional containment both in its *cleared* theoretical appearance, and as a universal method of deterrence applicable to different regions of the globe⁵.

The problem of assuming obligations not to use nuclear weapons cannot be reduced to the comprehensive separate analysis of its political, military and regional containment aspects. In this connection, it is rather indicative that military theorists of the USA while unconditionally recognizing the suppressing military superiority of the USA in conventional armaments, specially emphasize the thesis that the core US interests even in the regional context, can not be reliably protected without the opportunity of using nuclear weapons.

This rather vulnerable from the point of common sense statement is based on the justification which sounds more like exaggeration. The problem of regional

nuclear deterrence in Europe is announced by the American side to be continuing to preserve its importance in post-Cold War era, because, from the political and military point of view, there is some uncertainty in progress of political and economic reforms in Russia. Under these conditions, it is directly stated that in case Russia becomes an expansionist dictatorial state, the potential value of nuclear weapons of the Western countries intended to protect their national security and the European security will immediately increase and become of key importance. In this connection, US nuclear forces in Europe act as the *factor of precaution and securing* against any threat on the part of Russia.

The attitude of European countries to the idea of refusal from the first nuclear strike is also quite univocal. For example, Malcolm Rifkind, the former defense secretary of Great Britain, being in office, expressed *deep skepticism* concerning the value of the appropriate declaration. In his opinion, such declaration would mean that the conventional war is dangerously admitted as a safe solution⁶. Such conclusions are made even though Russia has completely lost its superiority in conventional armed forces and has neither economic resources, nor political will of the national leadership to restore this superiority in the foreseeable future.

European experts are also rather concerned about the US assuming obligation not to use nuclear weapons first, because it will inevitably result in removal of US nuclear weapons from Europe. This, in turn, will result in emphasis on maintaining regional containment based on NATO strategic nuclear forces and conventional armed forces, which means heavy economic expenses.

The US sharing risk and responsibility for Europe through giving the Europeans American nuclear guarantees is considered to be the core of the alliance. Withdrawal of America from the NATO deterrence structure would mean collapse of the entire system. That is why European experts in military strategy continuously emphasize the fact that the US decision to take obligation not to use nuclear weapons first will

inevitably undermine the unity of the alliance and cast on the NATO ability to contain aggression. Those who criticize this opinion mention, however, that these reasons are applicable only to the nearest future. In the long run, taking this kind of commitments by the Americans may result in a complete removal of the US nuclear weapons from Europe either based on voluntary basis, or as a result of coordinated demands of European countries. Instead, the USA could reconsider their assurances, linking them with the new configuration of deterrence to confirm their participation in the system of European security. Another long-term result is that such a step could be considered a poorly disguised attempt of the USA to leave Europe in a racecourse of its gearing up tendency of American neo-isolationism. This can lead to joint efforts of Britain and France to compensate for the weak NATO nuclear potential by means of developing purely European nuclear doctrine. It is also possible that such a step will stimulate German leadership in development of nuclear weapons to ensure national security.

American politicians are inclined to think that this is the reason why the so-called *European nuclear doctrine* was put forward in January 1992 by Francois Mitterand, the former French president. They have also noticed that Great Britain, though not supporting entirely the idea of the French president, still approved the *initial framework, in which it is necessary to carry out this dialogue*. It is necessary to keep in mind that the problem of an acceptability of *European nuclear umbrella* is an extremely painful theme for Germany.

What, in opinion of American experts, are the long-term consequences of committing not to use nuclear weapons first, with relation to the problem of maintaining the deterrence regime in Europe? According to common opinion, such policy will undermine the strength of Alliance and, as a consequence, weaken the regime of deterrence. Then will follow a serious restructuring of all European security system. The state of instability in Europe may in turn present a threat to US national security. If America accepts

obligations of not using nuclear weapons first, the regional containment will become inefficient against a whole range of countries having nuclear weapons, and even against different *non-nuclear* regional aggressors. So, the presence of American nuclear forces in Europe together with the US possibility to deploy cruise missiles with nuclear warheads on submarines and surface ships may, American experts believe, ensure acceptable stability level and (in ultimate case) prevent Russia from trying to break regional stability by force in case of its transformation to an aggressive power.

As to the problem of conventional containment, the Gulf War has demonstrated to the whole world the suppressing superiority of American conventional armed forces. It is assumed that the similar preponderance provides sufficient level of containment against the use of conventional weapons and (with certain reservations) even against a limited use of WMD, including a limited nuclear attack.

The impact of this kind of declarations on the efficiency of deterrence against *more than limited* use of chemical and biological weapons is a separate issue. Although many experts for different reasons suggest to refuse from using nuclear weapons for preventing chemical and biological attacks, the acting political circles are nevertheless feel inclined to use the this threat for containing from application of non-nuclear kinds of WMD. It is obvious that the acceptance of the declaration will weaken reliability of the deterrence, and damage, as it is believed, the objectives of American practical diplomacy.

It is necessary to consider the issue of possible reaction of the nuclear NATO allies of the USA in case the United States will assume obligations not to use nuclear weapons first as a separate case. Now it is perfectly clear that Great Britain (even when the Labor Government) will refuse to follow the US example. As distinct from the rest of major nuclear countries featuring anti-nuclear mood, the British politicians continue to believe that nuclear weapons make important contribution to maintenance of peace and stability. Actually, this opinion is

backed because of the necessity to spend significant financial assets on British nuclear forces development and preservation of the great power status⁷.

With this respect, analytical services of the USA state that any divergences in positions of Great Britain and the USA concerning the principles of their declaratory policy can have far-reaching consequences for the United States, may to some extent make the USA dependent on its *special ally*. In the first place, Great Britain and France can draw together and establish European nuclear forces under the pretext of the necessity to maintain national security of Great Britain and reduce the German concern about not having nuclear weapons. Secondly, the value of British nuclear forces for NATO in this case will be called in question, and there will be a shift of accents towards purely national character of such forces. Since under present conditions Great Britain will not be able to *do things on its own*, it will start an active search of forms of Europe-compatible (not obviously *joint* in the Atlantic sense) security, which can result in a change in the total balance of power in Europe.

Position of France concerning the possibility of the US declaration about not using nuclear weapons first can be predicted as obviously negative⁸. So, there will be differences between the USA and their basic European allies, which will threaten the existence of NATO.

It is known that one of corner stones of NATO existence was announced to be the realization of the so-called expanded deterrence, i.e. giving nuclear security assurances to non-nuclear NATO members on the part of the nuclear countries of this organization. During the years of the Organization existence, this thesis was never called in question and was always considered to be a consolidating factor. On the other hand, it is no longer impossible to take into account the statement, that the so-called NATO solidarity is a pure myth, since the NATO binding force is the necessity to observe separate countries' interests, and the Organization meets these requirements.

The most complicated relations are with Germany, whose defense system depends totally on NATO, and especially on its *nuclear umbrella*. There are well-grounded

fears that Germany will think that the US declarations of non-use were caused by the desire to limit the nuclear conflict to the territory of Europe. Germany may demand that the USA should give it special *vital* nuclear guarantees. It would entail withdrawal of American nuclear forces from the German territory in exchange to the bilateral agreement on nuclear security assurances⁹.

One of the most important problems in development of the US declaratory policy for Europe is associated with Germany, which will hardly agree to become the subject of nuclear guarantees of Great Britain and France, or even the party in whose interests the above mentioned countries will exercise deterrence. In fact, Germany sees the problem in the following way: either it relies on the US nuclear weapons in Europe, or on its own. Therefore, acceptance of unilateral guaranties of not using nuclear weapons first by the USA may disturb the nuclear weapons nonproliferation regime in Europe and, probably, in the zone of so-called *virtual proliferants* including Taiwan, Japan and South Korea¹⁰.

The US declaratory policy with respect to the countries of the third world can be considered least explicit. On the one hand, it is believed that the refusal of leading nuclear powers to accept the principle of not using nuclear weapons first would lay additional stress on the fact that the nuclear weapons continue to remain a major means of military policy and international diplomacy. This may cause certain friction with less developed countries, which may find this position unacceptable, and, possibly, push them towards infringement of the nonproliferation regime. On the other hand, there are no proofs that the acceptance of the declaration will somehow influence the decision of these countries on whether to get nuclear weapons or not. Nonproliferation regime will greatly depend on such steps as giving safety assurances to the countries being threatened by aggressors, or what can be called *erosion of special prerogatives image of nuclear powers*. There are offers to make the US declaratory policy more flexible, in particular, - to provide the possibility of giving assurances

of not using nuclear weapons to the countries that signed the NPT, and emphatically declare an opportunity of the first use against countries non-participating in or breaking the aforesaid treaty.

The Russian Federation Current Declaratory Policy

Declaratory policy of Russia is of specific nature. It is a fact that the basic provisions of the new military doctrine of the Russian Federation stating that under certain conditions Russia may first use nuclear weapons did not cause any comments or officially expressed concern in the world. This was partly due to pro-Western trends in the political course of Russia at that time, and partly due to understanding that this provision internationally and politically pursues very limited purposes and reflects the necessity of solving some specific domestic Russian problems. For instance, the reaction of official Washington to recent revival in the discussion of declaratory policy problems among the Russian leadership can be considered as bewilderment with so much attention paid to such a peripheral theme. According to foreign experts in 1997, the confirmation of the provision concerning the possibility of the first nuclear strike can be interpreted in a simple way: in this case the policy of Russia in the area of nuclear weapons completely corresponds to the policy of the United States.

However, it is possible to agree only with a part of this statement. As it was said before, declaratory policy of the USA is lined up in the context of extremely complex and interlaced European policy problems, regional containing from using WMD and other military and technical issues. In contrast to American policy, Russian declaratory policy is considerably integral and tuned. It has solely a military meaning and initially did not try to play the role of an important tool of *big policy*. Its task consisted in indicating the role of nuclear weapons as the *amplifier* of insufficient power of conventional armed forces¹¹.

It's rather indicative that Russian declaratory policy used to explain to world community that the issue of the first strike was considered by Russia not as a way of lining up allied relations or

collective security systems, not as a tool of regional containment or even the means of containing conflicts. It was constantly suggesting that the first strike could be made only at some advanced phase of an armed conflict, in the event of inability to constrain the started aggression using only conventional forces¹². As B. Berezovsky, the former deputy secretary of the Russian Security Council, said, 'we do not speak about using nuclear strike first in order to achieve advantages. Still, should we be cornered and have nothing else to do, we will use nuclear weapons.'¹³. In our opinion, the role of Russian nuclear potential was absolutely adequately designated in the "*Concept of National Security of the Russian Federation*" released half a year after appearance of a series of the mentioned *nuclear* declarations. It reads in the following way: 'Russia reserves the right to use all the available forces and means including the nuclear weapons, if after an unleashed armed aggression there will be a threat to the existence of the Russian Federation as an independent sovereign state.'¹⁴.

This form of Russian declaratory policy was quite adequate both to theory and the real state of the armed forces. Besides, it did not give any grounds for suspicions about Russia having global ambitions, and was even safe since it was understood that Russia would make the first strike not for the achievement of the ultimate victory or dictating its will to the opponent, but for recovery of a *status quo* on the battle field¹⁵.

The ascertaining of the fact that the Russian declaratory policy efficiency would be enough, if it were not for numerous suggestions of reputable Russian experts about transformation of this policy to a certain *symphonic orchestra* of our military diplomacy. This approach represents extreme danger for the process of strengthening of the Russian Federation military security.

First of all, it is necessary to disavow all the official statements of the Russian party concerning association of its refusal not to use nuclear weapons first and the process of NATO expansion. Presently, Russia is not interested in transformation of its nuclear weapons into the tool to be used for solving regional problems, especially in Europe.

It is necessary dissociate from any declarations that under certain conditions

Russia will be ready to initiate a global nuclear conflict, which follows, for instance, from recommendations of some top-ranking Russian experts: 'If a threat of aggression develops from the phase of regional armed conflict to a large-scale war, Russia can use nuclear weapons first for making a disarming strike to military objects.'¹⁶.

The proposal to use the threat of the first nuclear strike for conventional containment of conflicts in politically turbulent areas can hardly stand up to criticism. The proposals to use tactical nuclear weapons *under certain conditions and with observation of application technology* as a key factor in the local border conflicts along the perimeter of Russian frontiers, ensuring at a definite stage the failure and rejection of aggression were already proclaimed in Russian newspapers. The following words of Lev Rokhlin, the former Chairman of the Defense Committee of the State Duma can be interpreted the same way: 'We need nuclear deterrence weapons, since our huge territories in the Far East are bare.'¹⁷.

Finally, it is unacceptable to *wash out* the regime of central deterrence on the part of the Russian strategic nuclear forces by trying to load them with problems of delivering first limited nuclear strike in regional and local conflicts. The unambiguous recommendation of the Council for External and Defense Policy, saying 'limited nuclear strike can be performed by strategic nuclear forces for de-escalation of armed conflict and prevention of its development into a large-scale war against Russia and its allies' is also worth mentioning. This kind of thesis has many supporters among Russian military, some of them try to make it the basic issue of the new Russian nuclear doctrine. In particular, they affirm that 'the change of geopolitical situation has resulted in creation of many real preconditions for development of local conflicts, which are limited by purposes and opportunities of regional centers of force. Obviously, strategic nuclear forces can not completely replace conventional forces, but they can give a reliable assurance of containing of not only large-scale aggression, but regional threats as well. Earlier, the main SNF task was to contain aggression of nuclear states, and first of all USA. Under the new political and military conditions, the task of deterrence must and can be solved with

respect to other countries bordering Russia (CIS). The purpose should be based on the opportunity to make demonstrative or selective single nuclear strikes or a series of strikes first of all at control post, warehouses with weapons and ammunition, air defense objects, aerodromes and other targets. This expands the nuclear weapons quality requirements. Strategic systems should ensure the delivery of strikes of *surgical accuracy* in a wide range of directions and ranges, within shortest terms and with minimum ecological consequences.'¹⁸
¹⁹.

There are many other examples of this kind. However, it seems that in current situation the best alternative to declaratory policy of Russia would be exact following its basic provisions announced in 1993.

¹ See: *USA in a New World: Limits of Power*, Moscow, 1997, pp. 217-256.

² D. Gompert, K. Watman, D. Wilkening, *US Nuclear Declaratory Policy. The Question of Nuclear First Use*, RAND Corp., 1995, p. 31.

³ *US Targets Nuclear Weapons at "Nonstate Actors"*, Press Release, Berlin Information Center for Transatlantic Security, August 22, 1998.

⁴ D. Gompert, Rethinking the Role of Nuclear Weapons. *Strategic Forum*, No. 14:1, May, 1998.

⁵ See: R. L. Kugler, *US Military Strategy and Force Posture for the 21st Century: Capabilities and Requirements*. National Defense Research Institute, RAND, MR-328-JS, 1998, 228 pp.

⁶ M. Rifkind, *UK Defence Strategy: A Continuing Role for Nuclear Weapons?* Speech given at Center for Defence Studies, King's College, November 16, 1993, p. 7.

⁷ See: R. Johnson, *British Perspectives on the Future of Nuclear Weapons*, Henry L. Stimson Center, October, 1998, 24 pp.

⁸ See: C. Grand, *A French Nuclear Exception?* Henry L. Stimson Center, October, 1998, 17 pp.

⁹ See: Liu Huaqiu, *China's No-First-Use Policy*, Henry L. Stimson Center, October, 1998, 18 pp.

¹⁰ *Nezavisimaya Gazeta*, November 28, 1998.

¹¹ V.M. Dudnik, Strategy and Tactics of Military Reform: What Army Russia Needs. - *Materials of the round table, Grazhdansky mir Association*, Moscow, 1997, 59 pp.

¹² *Nezavisimaya Gazeta*, January 22, 1997.

¹³ Interfax, May 12, 1997.

¹⁴ *Rossiyskaya Gazeta*, December 26, 1997.

¹⁵ W. Pincus, Re-Read His Lips: Reduce Arms Now. *The Washington Post*, October 11, 1998, p. 1.

¹⁶ *Nezavisimaya Gazeta*, February 13, 1997.

¹⁷ *Nezavisimaya Gazeta*, January 25, 1997.

¹⁸ *Nezavisimaya Gazeta*, March 29, 1997.

¹⁹ See: S. Blank, *Russia Armed Forces on the Brink of Reform*, Conflict Studies Research Center, October, 1997, 34 pp.

Interview**YURY SOLOMONOV: US MISSILE DEFENSE? THERE IS STILL A CHANCE FOR DIALOGUE**

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Abridged version

PIR Staff Writer Dmitry Litookin interviews Director and Designer General of the Moscow Institute of Heating Engineering Yury Solomonov, author of the Topol-M ballistic missile system.

Recently the US Congress made the decision to deploy a national missile defense system (NMD). To many Russian experts it meant the US withdrawal from the ABM Treaty of 1972 and the break-up of the strategic balance between the two countries. The major US idea-monger of this program, Director of *Ballistic Missile Defense Organization (BMDO)* Lt.-Gen. Les Lyles, in his report of the Senate hearings, emphasized that a national missile defense system should provide for the protection of US territory from possible missile attacks of terrorist regimes, i.e. Iran, Iraq, North Korea. From his point of view, in the future potential threats to the United States may come from India and Pakistan as well.

YADERNY KONTROL: Yury Semenovich, as a person contributing to decision-making in the area of state security what do you think about the intensification of US efforts to deploy an NMD system? Would it be a real violation of the ABM Treaty?

YURY SOLOMONOV: The opinion of the press and the real state of affairs do not always coincide. In fact, Congress has merely adopted appropriate recommendations to the Clinton administration on developing a limited ballistic missile defense system in the 21st Century.

In general, as the program draft states, the number of interceptor missile launchers is limited to one hundred, which should ensure the interception of a limited missile attack against the US territory. At the same time, the USA regards as would-be enemies some

rogue regimes, for instance, North Korea, Iraq, Iran, etc. There are rumors about current projects in the way of developing theater missile defense (TMD) systems. These were employed in real warfare during the famous US campaigns in the Middle East and we know their efficiency. The development of the TMD system with improved capabilities focuses on two major components of the weapon: information capabilities and firepower.

Q.: Don't you think that the USA can pose an adequate threat to Iran not with a missile defense system but by targeting ballistic missiles at this country? Or would the United States prefer to follow the Yugoslavian and Iraqi scenario: to send the warships and to use cruise missiles against a guilty state?

A.: Any missile defense system is a passive means of defense. Moreover, it's not mobile. Nowadays the USA uses active forms of defense. If you develop a system of such class you, above all, tend to defend your territory and you don't care where ballistic missiles come from or to whom they belong. This attempt at security has nothing to do with Russia, which possesses missile technologies to reach US territory. The number of such states is rather small: France, Great Britain, and China. Which of them will attack the United States? France and Britain will hardly do that. Russia has declared the USA to be its strategic partner. Would China be a menace? Perhaps, but it's a matter of the US and China's relationship. That's why, due to political motives, the USA doesn't name these countries in the list of potential aggressors, disposing of the need for missile technologies at such a level. But, in my opinion, it's unwise to explain the NMD deployment by the threat from *rogue* states, which will have nothing of that kind in the foreseeable future. The United States is well aware of this fact but nonetheless, its leadership argues that this is the main reason for missile defense deployment.

Q.: Though the USA doesn't link its NMD deployment with a hypothetical threat from Russia, it's understood that it has no other adversary, except Russia. North Korean ballistic missiles can't hit US territory. The

same applies to Iran. In the course of his recent meeting with Yevgeny Primakov, Israeli Prime Minister Benjamin Netanyahu admitted that his country had no information on Iranian missiles' ability to reach Israel. Iraq is far from developing ballistic missile systems. Then what threat could the US missile defense pose to Russia?

A.: If we consider the problem of missile defense deployment on the whole, we can say that it's a double-sided issue. On the one hand, it is positive from a moral standpoint; it is aimed at the protection of one's own territory. And, to be frank, it is difficult to blame somebody for a natural desire to seek security. However, on the other hand, despite its defensive character, the system is developed to prevent a strategic arms offensive. Hence, if it accomplishes tasks of strategic defense it may trigger a certain counteraction. This implies that NMD deployment has a serious underlying factor of instability. Moreover, it can't be confined in the framework of bilateral or multilateral relations, and it may result in global instability since at present many states possess strategic arms.

Were there such precedents in the past? Yes indeed. On March 23, 1983 US President Ronald Reagan put forward the "Star Wars" project, based on General Abrahams' concept. We know this story and its ending. The USA, after a large amount of work on improving and developing advanced technologies, made their rival (the USSR) spend immense material resources on finding an adequate response to the initiatives that were proposed to the international community.

There is no doubt that the concept of a counter strike has been formed under the strong influence of the state political organization. We have to admit that some steps of the Soviet Union were taken without consideration for real economic capabilities, without an analysis of the potential cost-effectiveness of certain decisions. And looking back, I must say that some of the tasks could have been accomplished in a different manner, at less expense, without simply wasting massive resources.

Sometimes I myself had to face similar situations concerning the implementation of missile systems development programs.

Q.: Could you give some examples of the irrational, from the present-day viewpoint, use of financial means to develop a Soviet missile defense system?

A.: Let's do without any examples for it's still a confidential subject. If we speak about experiments we were doing, they were carried out regardless of the true capacity to realize this or that innovation. The same was true with regard to the SDI program. I'll tell you why. Evidently the initiative itself had political character only at the final stage when it was declared. And, obviously, it was inspired by US military-political leadership, which followed the will of the military and defense industries interested in the expansion of production.

Our military industrial complex is not very different from its US counterpart and it has never been very different; although now we have to make allowances for the current amount of resources we have at our disposal. Naturally, in the Soviet era and at present the military industrial complex has been interested in the maximum use of resources, accomplishing, in fact, a noble mission.

So, to describe the situation I can cite some suggested decisions, which were under discussion on American TV and in the press. Twenty years ago space-based components were proposed as missile defense elements while chemical and X-ray lasers were regarded as means of destruction to counteract enemy attacks. As you can imagine, it was completely unrealistic taking into account the level of technical development at that time. And somehow this was reflected in plans that were discussed and that served as a basis decision-making on adequate response measures.

The current state of affairs, as far as we know, is similar to the aforesaid situation. The only difference is that in a number of cases there are no longer any absurd ideas concerning components of a new US missile defense system. Today it's more pragmatic. The estimated costs of NMD deployment until the year 2005 will amount to \$ 6 billion. In this regard, the question presents itself: will it be more efficient to create an analogous system in Russia or to counteract the US NMD? There is

no doubt that it will be cheaper, easier and more cost-effective to take measures to counteract an NMD system rather than to implement similar programs.

Q.: You mean that it is possible to produce more efficient offensive means to penetrate any missile defense?

A.: I would put it in a slightly different manner. If offensive means are designated to cause irreparable damage to the enemy then this task can be accomplished with lower expenses than those that would be used for defense. That's why when we speak about the criteria for solving this problem we should bear in mind the future characteristics of a defense system, the characteristics of the available and potential means of offense, and the current level of scientific and technical development. We are well aware of this level and the US realizes it as well. The USA makes no secret about the testing and demo launching of interceptors at Kwajalein.

Therefore, to sum it up, the level of world technical development allows me to state unequivocally that the development and implementation of countermeasures to a national defense initiative will require fewer resources and be more cost-effective. Nevertheless, there will be a need for some additional spending, although we should strive for a minimization of costs. So, the main criterion would be to surmount missile defense system capabilities with minimum financial costs. It's a serious task and it requires a great deal of work from designers. But I'm sure that eventually the problem will be solved, though we'll have to spend money on weapons instead of investing them in the economy.

Q.: How much would it cost to deploy a Russian NMD system? And would we be able to make an adequate response if the US Senate reviewed the ABM Treaty?

A.: At present it is too early to assess the cost of an adequate Russian response as there is no clear understanding of what the US missile defense will be. Anyway, scientific research of this kind should get the approval of the Russian political leadership in the form of appropriate directives and orders.

All this time we have been trying to take a detached view of the problem as a person who understands everything very well but doesn't rush to final conclusions. However, we'll have to make this conclusion. US NMD deployment is possible, what's more it's absolutely real, taking into account the cost-effectiveness of the program and today's approach. The USA has the financial means to spend on this program.

Q.: Some newspapers condemn you for numerous press statements in which you argue that the Topol-M missile is able to penetrate US missile defense. And, allegedly, it has become an indirect reason for the USA to employ their right to withdraw from the ABM Treaty. Is it true that US missile defense is vulnerable to Topol-M and that the ABM Treaty is not that important for the United States?

A.: The authors of these accusations should be more attentive to reading what I say. That's why, frankly speaking, I see no need to explain or deny anything. I have never said anything like this. I've always been saying that in general, missile defense counteraction can take two major forms. The first is when you see the plan and provide for certain peculiarities of design enabling the missile to penetrate missile defense. You have to pay for it, up-grade the missile, etc... On the other hand, you can do without it. After all you can do it later as a measure of improvement or modernization...

That's what I mean when I dwell on technical decisions incorporated in Topol-M design. It enables us to move easily from a situation when the enemy has no missile defense to the opposite situation. And all initial costs of modernization have already been included earlier in the process of missile design and production.

It has a certain advantage from the point of developing a brand new system designated for use in various conditions. Missile defense deployment is just one of the examples of countermeasures against our weapons. There are other systems capable of performing similar functions. For instance, conducting nuclear explosions at a certain flight stage. You have two options. You can either leave everything as it is without any potential for further improvements or you can enhance combat

capabilities at the very beginning to ensure the protection of the missile.

That's what we did with the Topol-M system, initially providing for some technical decisions that would facilitate employment of this weapon in case the USA deployed its missile defense system. Have we done everything we can? No, of course, not. Under START treaties, it can't be armed with MIRVs. But it is evident that one warhead is more vulnerable to missile defense than several warheads. Can Topol-M carry several warheads? Yes, certainly, as any other missile. At present, this has yet to be realized. But with money and the political will of the state leadership we can accomplish this task.

As to the allegation that with Topol-M we force the USA to take assertive actions, I would like to give you a simple example, which relates to a situation with the Minuteman III ballistic missile system. Its characteristics are out-of-date and the USA is in the process of replacing these missiles. Their scheme of replacement is different from ours but a new missile will have an upgraded engine of the new generation, and will possess an advanced control system. The United States performs the same routine activities in the area of material replacement. We have a similar situation. Any technical system has a certain guaranteed period of operation. Its life can be extended but we can't do it endlessly. After all, it affects the reliability of the system. Anyway this or that system becomes no longer viable and safe and we have to replace it. This applies to Topol-M, too. The first regiments were armed with the *Topol* series 20 years ago. Naturally, their life expectancies have expired and have been extended many times. On the other hand, it's understood that the development of such a system takes many years, at least 8-10 years. And we can't wait for the situation when the older system is due for decommissioning and a new one hasn't appeared yet. That's why Topol-M is just a logical continuation of the process of maintaining our nuclear missile capabilities in compliance with the international treaties of the Russian Federation.

However, the task is not only to work out and produce such a system but to build up the arsenal. There should be not single samples but dozens of missiles at a minimum. If we take into account the general obsolescence of the strategic missile arsenal, the ballistic Russian

missile group Topol-M could become the core of land-based strategic nuclear forces no sooner than the year 2010, when there will be hundreds of such missiles. It's clear that you can't produce this number of weapons in one or two years, bearing in mind the poor economic situation in our country. Hence, our switch to the new ballistic missile system poses no real threat to the USA.

Q.: The other reason for US concerns about Topol-M is its reported ability to penetrate missile defense, thanks to mobile warheads.

A.: Some journalists have a rich imagination. I won't comment on these statements since it will force me to speak about specific characteristics of the missile. On the other hand, the permanent improvement of missile technologies, the development of new systems and the upgrading of older ones is a vital necessity. In this regard, a matter of specific importance is the increasing accuracy and effectiveness of the missile warhead. This would allow us to reduce the number of nuclear warheads and to use non-nuclear warheads, which will make the missile multifunctional.

A further increase in accuracy will depend on the development of missile technologies, on the level of control equipment. Fast computers with enhanced memory and a small size enable us to use precise algorithms of guidance and control. It will eventually let us create guided and self-guided warheads. And it's not a matter of the distant future. In the future the use of such warheads may result in a refusal to employ nuclear weapons. But it's a matter for the future.

Q.: Yury Semenovich, in your opinion, should Russia struggle for the preservation of the ABM Treaty in its initial form? Perhaps, if our nuclear forces are armed with Topol-M system we have nothing to worry about? It will be up to the USA to spend extra money on missile defense modernization.

A.: This is a two-pronged question. If our opinion is important then the USA will take into account that we have to do our best in the political sense to preserve as is the commitments of the ABM Treaty of 1972 as

amended by the Helsinki and New York agreements. In my opinion, this approach to the problem would serve to stabilize bilateral relations in this sphere. If we presume that the US side won't listen to our objections (it is quite possible, taking into consideration current developments in the world) we'll have to develop an adequate response to it. Nowadays due to the financial and economic situation it is unclear what measures can be taken. Anyway they should be minimized not to be a burden on the budget.

Then, the task of adequate response is very complicated not only technically but politically, for it is absolutely unacceptable to come down to mutual threats. We can't respond to their actions of violating the international practice of normal bilateral relations with flat challenges and defiant steps. That's not the way out. Many bilateral decisions can be found and they will be an absolutely adequate and efficient means to continue the dialogue and search for political and military compromises.

Q.: What are these decisions?

A.: I don't want to address this topic for my answer may have negative undertones. But we should by all means do our best to preserve the relationship and the dialogue. Confrontation is the easiest way, especially if it doesn't depend on the actions of the opposite side. But you have to concentrate your will and work out proposals to find a wise solution to the problem.

Q.: Still there is always a line beyond which words mean nothing.

A.: Certainly, there is such a line and we are not going to cross it in order to continue the chances for dialogue. In my opinion, that's the most important thing. If we return to confrontation in our relationship, obviously, it would mean going back to another Cold War. It would affect the successful solution of the problems in the START framework, it would negate all of the US-Russian achievements in this area over the last 25 years. Moreover, due to thoughtless decisions in this sphere we could not only return to the Cold War situation but to a new

stage of the arms race, taking into account the tremendous technological progress in this area. And Russia is the one to prevent it. Since we have limited economic and financial resources any new development in the arms race will be suicide for the Russian economy. As a result, we'll once again become a country with super-modern technologies and a starving population.

Q.: Then, can we regard NMD deployment as the pressure of the industrial lobby on the US administration and the Senate?

A.: In my opinion, this is the major reason and I stressed it in the very beginning. The idea of missile defense development and deployment was put forward and promoted by the US military industrial complex, companies relating to missile technologies, software and information support in particular. All corporations competing for defense contracts are interested in long and guaranteed budgetary financing. It's understood and I envy them but we can't expect similar steps in Russia. Our country can't bear this burden again and there is no need for it, as we have a cheaper and no less efficient means of adequate response to US NMD deployment.

Q.: Yury Semenovich, my last question is not directly connected with the topic of our conversation. What will happen with the Topol missiles? Is there any hope that in 1999 we'll have the second regiment of these missiles?

A.: There are reasons for hope, although it's too early to draw any conclusions. Nonetheless, Defense Minister Marshal Igor Sergeyev has several times reiterated his commitment to fulfil *the mission of the year* - to implement the second regiment of Topol-M missiles. It's a rather difficult task, above all for our industry. The schedule and amount of funding provided for in the budget and the plans of the Finance Ministry is not overseen by the Ministry of Defense. If the current situation lasts for another month the accomplishment of this task will be doubtful. If the money is allocated we'll do our best to carry out the program and eventually we'll mark the beginning of the 21st century with the formal commissioning of the weapon system for the Armed Forces.

Interview**VALENTIN YEVSIGNEYEV ON
ISSUES, RELATING TO RUSSIAN
BIOLOGICAL WEAPONS**

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Abridged version

On April 5, 1999 the New York Times published an interview with a former Soviet military scientist Kanatyan Alibekov, the author of Biological Threat, which was to be published soon by Random House publishing house. In his work Mr. Alibekov, an active participant in the Soviet biological weapons' development program from 1975 to 1991, argues that Soviet scientists tried to convert HIV into a weapon. Moreover, it allegedly happened when the Soviet President Mikhail Gorbachev was trying to resume peaceful contacts with the West while at the same time making the order to expand research on converting lethal bacteria and viruses into WMD. According to Mr. Alibekov, the USSR several times employed biological weapons in Afghanistan, attacking rebels' positions with glanders viruses and developing biological warheads for cruise missiles. What is more, the Soviet Union managed to acquire gene rearrangement technology, providing for decreased vulnerability of pathogenic microbes to the external environment and medical treatment.

Despite the sensational potential of the book in the USA, the New York Times really doubts the trustworthiness of mentioned facts. To this end, the newspaper cites its own sources of information in the CIA, who have had contact with Alibekov since 1992, immediately after his defection to the United States. The newspaper emphasizes that although they consider him a reliable source of first-hand information, when it comes to political and military issues of which he only has second-hand knowledge, he is less reliable.

To dot all the "i's", PIR Staff Writer Dmitry Litovkin met Lt.-Gen. Valentin Yevstigneyev, Deputy Chief of the Ministry of Defense's Radiological, Chemical and Biological Defense Forces. Gen. Yevstigneyev also heads the MOD Biological Defense Department, hence he is considered the most reliable source of first-hand information on the Soviet germ warfare program and of the activities to prevent this type of war.

YADERNY KONTROL: Valentin Ivanovich, chemical and biological weapons (BW) have been outlawed. International agreements prohibit these kinds of weapons and Russia has made similar commitments. This year we'll begin the destruction of 40 thousand tons of chemical weapons but there is no information about a similar process for the elimination of BW. The Biological Defense Forces (BDF), which you are heading, are left without any changes in the MOD structure. What is their mission today?

VALENTIN YEVSIGNEYEV: I would like to start by clarifying some terms. "Biological defense" appeared in 1992 after the first stage of military reform. My department was established on the authority of the 15th MOD Directorate, which in the Soviet era was in charge of developing a means of protection from BW and undertook projects to adequately respond to foreign BW development programs. In March 1992, President Yeltsin declared that Russia would give up its biological offensive programs and the 15th Directorate was disbanded. A new structure included only a small part of the former Directorate staff, who made up the core of the Biological Defense Department within the Radiological, Chemical and Biological Defense Forces. I would like to point out that all officers in the new BDF have always worked solely on the development of BW defense systems. For instance, I'm an expert on various plague vaccines.

In comparison with past years, nowadays our department is very small. Its staff includes 30 officers, of which only 8 are biologists, while others have engineering backgrounds and work on the creation of technical methods of medical defense. These are chiefly diagnostic systems to detect infectious disease agents and toxins, means of emergency and specialized prophylaxis of these diseases, gammaglobulins, new antibiotics, chemical substances, disinfectants, and disinsectants. All of these tasks are the focus of activities of the MOD Scientific Research Institute of Microbiology in Kirov. The Institute's structure includes two scientific centers: the Yekaterinburg Center for Military Technical Problems of

Antibacterial Defense and the Sergiev Posad Virology Center. Only these three institutions are engaged in MOD biological programs.

Q.: However, foreign mass media often argue that the Russian MOD has some civilian academic subcontractors. For instance, the *New York Times* has recently published an article implicating a number of Russian civil facilities in the carrying out of biological offensive programs, the Moscow Institute of Bio-organic Chemistry (IBKh) in particular.

A.: We have gotten used to such allegations. However, I have to admit that there were such contacts in Soviet times. At present, due to the low funding of biological programs in the MOD framework and the limited scope of projects, we have practically discontinued all contact with civil academic institutions as we cannot pay for the accomplishment of certain tasks. And, in fact, nowadays there aren't any problems that we can't solve ourselves. Of course, some projects are still being carried out, but their scope is so paltry that they don't even approach the substantial share of the Department's activities aimed at the development of biological defense systems.

Q.: Could you name specific civil institutions collaborating with the Biological Defense Department and the tasks they are fulfilling?

A.: We cooperate with Novosibirsk NPO *Vektor* based in Kaltsovo. The Director General of this scientific research center, Lev Sandakhchiev, is helping us to create a recombinant vaccine against Hepatitis B. This virus is transmitted through the use of unsterilized medical equipment and tools. This problem concerns blood transfusions, dental procedures, etc. As a result of infection, the patient may suffer from cancer or cirrhosis of the liver. The remedy is called *Revaks* and is currently undergoing pre-clinical testing.

As for our other contacts with civil facilities, we have signed a contract with Moscow State Scientific Antibiotics Center, which is creating a new antibiotic - fluorquinolone, or pefloxacin. However, the success of this joint project depends on financing. If we get

enough funding, the Army will receive this multipurpose antibiotic by the year 2000. It's a good antibiotic, although it is not the latest nor the most effective. But, in our opinion, it will meet the Army's entire demand for a means of protection against infectious diseases.

As to our military subsidiaries, the Yekaterinburg Center has been designated for technical and design projects relating to development of a technical means of BW defense. It also undertakes technological activities to provide for the production of some vaccines, and develops new antibiotics. In Sergiev Posad they are working on vaccines against the most widespread viral diseases.

As I have already said, the MOD military biological program is aimed at developing general and medical means of defense. General purpose means of defense include vehicles and devices for biological intelligence, biological situation estimates, forecasts of the epidemiological situation, and the elimination of the effects of BW warfare and natural outbreaks of infectious diseases. This issue is the most urgent for us since the Russian Armed Forces are equipped with obsolete biological intelligence systems. For instance, current automatic biological attack indicators have already been in operation for more than 30 years.

Nowadays our institutes are working on a new modification of this device in close cooperation with the Institute of Biological Instrument Making, a strictly civilian institution. The device is at the stage of regular official testing. It provides for the application of new physical principles of the system, new elements, and modern computers. Unfortunately, low financing has delayed the progress of its development. The experiments have been already conducted for eight years, and even if we complete them this year or the next, there will be problems with its delivery to the end-user. The Defense Ministry lacks the money to order such equipment for the Armed Forces.

Q.: Defense industries in the past were unlikely to perform the entire range of

design activities. Huge consortiums of various scientific research institutes were set up and each of them solved its limited number of problems within a general framework. We can presume that the lack of financial means today forces MOD to work independently in developing methods of BW defense. Is that correct?

A.: I must say that even in the past we had to follow the principle of self-reliance. This is accounted for by the fact that our institutes were the only holders of the State collection of microorganisms, which were potential BW agents. Now, we are the owners of these pathogenic organisms and we have to create vaccines and means of defense against them. It's a standard collection registered with the State, and we use the microorganisms to verify the efficiency of our defense mechanisms.

We have more than 100 different cultures of anthrax in our collection. In addition, we possess cultures of plague, glanders, brucellosis, tularemia, cholera, botulism, Ebola and Lassa hemorrhagic fevers, spotted fever, etc. These are different cultures with different characteristics; that's why I find it difficult to estimate the number of viral species. To do so, we must fetch the head of our museum and check his files against the number of ampoules containing each kind of biological substance. The collection is rich but not large: from one to five ampoules of each agent.

If there is a need to work with any of the agents it is extracted from the collection to multiply and use. Thus, we not only solve our routine problems, but enlarge the collection. The quantity of stored biological substances is no more than one gram but if we take into consideration nutrient medium it would be about one kilo of materia.. There is no need to have an amount larger than that.

To make a reliable antidote for each virus we have to test a number of methods to enable us to detect it in an external environment. We have to take a sample of the substance and find out its nature (bacteria, viruses, or rickettsia) and type in accordance with its classification.

If we succeed in defining the substance the next stage would be emergency prophylaxis. In the case of plague it would be an additional specific vaccination and prophylaxis. That's why we create various vaccines. If biological agents are

found in the external environment (on a uniform, on other objects or in the air) there is an urgent need for disinfection. If the agent transmission comes from insects (ticks, fleas, louses, or mosquitoes) the primary task will be to destroy them with disinsection. Or the pathogenic organism could be found in rodents, who are plague carriers.

In the course of these activities we have to monitor the individual and collective protection of personnel. We have to know how safe our means of protection are (i.e. L-1, OZK), and how well they protect the skin from various aerosol mixtures of infectious pathogens. Then we should know the ability of a standard gas mask to protect personnel from various aerosols. We have to inspect all containers for material and military equipment in order to prevent the penetration of these aerosols inside a tank, an armored personnel carrier or any other combat vehicle, closed fortification or bomb shelter.

In addition, all individual and collective protection should be adapted to sustain a possible biological attack and to ensure personnel's protection from infectious diseases. We need to select the correct means of disinfection so that indoor treatment would not impair the normal functioning of electronic devices. What's more these means should produce no corrosion, should be safe and personnel-friendly. To avoid the inhalation of chlorine, we need to create special compounds to disintegrate admixtures.

Q.: You said that one of the missions of the 15th Directorate was the development of adequate offensive weapons. What does that mean? At present we are speaking about weapons we are going to defend ourselves from. But your words imply that we had our own offensive systems. What was the Soviet Union producing?

A.: The thing is that based on numerous sources (they are really numerous), we created a special list of biological weapons we should be afraid of. This list of biological agents was compiled from intelligence data we got from the KGB and GRU [Main Intelligence Directorate, Russian military intelligence - Ed.]. We also used popular books on biological warfare as well as the results of SIPRI research. Hence, we managed to create an extensive index of biological agents, containing about 37

pathogenic organisms of various diseases. They become the basis for development of means of protection. The most dangerous are agents causing plague, tularemia, anthrax, brucellosis, melioidosis, smallpox, encephalitis, spotted fever, cholera, yellow fever, botulism toxins, and enterotoxin B.

To develop means of protection it was necessary to make a copy, a model of offensive methods. That's why we had to learn to cultivate pathogens, to augment the technology of its accumulation, to create some stabilizing nutrient medium to make it stable in an external environment. The next step was to create BW delivery systems, to produce vaccines, to check our biological intelligence equipment, and to determine the density of dispersion necessary in the use of such weapons. This cycle was the offensive part of the MOD program of adequate response, and in 1992 it was banned and eliminated.

Q.: These facts prove that the USSR disposed of at least 37 kinds of real BW prototypes. Today we face the problems of CW destruction and arms reduction but this does not concern biological munitions since they don't exist. How did it happen that the USSR didn't start the mass production of such weapons, although it had all necessary prerequisites?

A.: Right you are. Till 1992, thanks to our foreign intelligence, which procured real specimens of US biological munitions and their technical drawings, we could design real munitions: one-, two-, three-, and four-pound air bombs. We even made individual models in our laboratories, conducted natural tests on animals at a special test range on Vozrozhdeniya Island on the Aral Sea. But after 1992 these activities were forbidden, and now we infect animals only with inoculations, and monitor the efficiency of our means of protection in the same manner. If we need to test biological intelligence equipment we have to do it not outdoors but in laboratory conditions with the help of modeling and simulators, i.e. vaccine cultures or non-pathogenic microorganisms.

As to your question about mass production, there is only one explanation. Biological weapons differ from chemical weapons since they contain bio-organisms, which cannot be

stored for a long time. That's why they were not stockpiled, because there were no strategic reserves, except those for toxins. The Soviet leadership had no ideological basis for such experiments and tests; hence, the program was of a minor scale in comparison with nuclear and chemical weapons production and development. All experiments were conducted just *to be on the safe side*. To a certain extent it was a mere bluff on the part of our leadership. There was an order to create such weapons but they were never taken seriously as a real offensive means and there were no plans for their use.

Q.: But you mentioned real BW tests, including human beings, at a certain testing facility, didn't you?

A.: Yes, there was such an experiment. But in the entire history of the 15th Directorate it was the only one. It involved 15 men and some animals. However, the main objective was to test the reliability of gas masks and protective suits and not BW effectiveness on the offensive side.

We could certainly have produced a biological arsenal of toxins but we didn't stockpile them because there were no political instructions on the matter. That's why the USSR didn't possess BW stockpiles and why now we have nothing to destroy. We had only one problem: to dismantle laboratory and testing equipment that could cause suspicions of continuing biological experiments and a readiness to produce a large amount of biological agents. That's why this equipment was destroyed at the outset of *perestroika*, before 1989, in compliance with Gorbachev's order.

It was the time of beginning trilateral negotiations between Great Britain, Russia and the USA regarding on-site inspections at BW development and production facilities. We visited the suspected US and British biological facilities. As for Russia, the then CPSU Secretary General Mikhail Gorbachev decided to dismantle all devices and equipment that could raise doubts about our intentions. Together with the equipment we destroyed retorts with biological ferments (about five liters). Thanks to this prudent

political move, we pose no threat to anyone and there are no traces of our BW offensive program. We can be suspected solely on the basis of intention.

Q.: What do you mean by 'intention'?

A.: We still have no final agreement with the West on what to call biological weapons, what equipment and technology should be regarded as potentially capable of BW production, or what should be banned under future Conventions. As to the level of information transparency about current activities of our laboratories required by foreign inspectors, no solution has been found yet. And it's not a matter of Russia maintaining an uncompromising position or Russia's unwillingness to make concessions. I would denounce the US position as they are the ones who haven't agreed to many proposals that could substantially contribute to a mutual understanding between the countries and provide for strict control over activities of scientific laboratories.

After the collapse of the Soviet Union we closed our only biological testing facility on the Aral Sea, as it became the property of Kazakhstan and there was no need for its further use. When we closed this test range we had to conduct a complete disinfection of the territory. We exterminated all test animals and buried them in special burial grounds. Some scientific equipment was moved to Russia. We monitored the entire territory of the island where we had conducted natural testing of biological weapons. So, in terms of environmental protection, we left Kazakhstan an absolutely normal island.

As soon as we left Vozrozhdeniya Island, it was overcrowded with US biologists who were to find out the essence and details of Russian activities. Americans dug up our burial grounds, analyzed animals' tissues and made the conclusion that we had tested technologies of anthrax for use in combat. This fact speaks for itself. Unless we have agreements, specifying the classification of "biological weapons", we'll never trust each other sincere intentions.

That's why we urgently need to elaborate on the code of international agreements to control BW development, to set up an international verification mechanism and to determine the list of documents that should be submitted. Unless it is done, the USA and other states may suspect us of bad intentions. Nevertheless, I can take the responsibility for stating that we developed offensive biological weapons but we didn't have mass production. In 1989 we started to destroy them and in 1992 we stopped all laboratory research activities relating to development of biological weapons of mass destruction.

Q.: You said that there had been attempts to imitate US biological munitions. Does that mean that the USA had a specific mass production sample of a BW carrier?

A.: You are absolutely right.

Q.: We must have had an opportunity to examine German and Japanese captured munitions?

A.: Perhaps. During the Soviet military operation in Manchuria in 1945 there were captured samples of Japanese biological weapons. These facts are kept in archives, there is evidence from witnesses. All this was loaded on a ship and should have been transported to the USSR. It may seem strange but the ship vanished. In my opinion, it might have become a victim of the Japanese Navy or been sunk by Soviet sailors. Unfortunately, history remains silent about this fact. Hence, we received nothing from the Japanese in terms of biological weapons.

Americans, on the contrary, captured the commander of the Japanese BW development squadron and continued fruitful work with him after the war. And the International Tribunal convicted only rank and file participants in the program. As for German biological weapons, there isn't any specific data on them. There were rumors that German scientists did experiments on prisoners of war. However, the Third Reich biological program didn't leave behind scientific laboratories due to the fact that Hitler was a bacteriophobe and was afraid of catching a virus. That's why we have so little

knowledge of the German biological program.

As a result, Soviet BW became a completely indigenous product of Russian scientists. We didn't have to steal viruses or cultures somewhere; we had enough of them. Most of the 37 biological agents listed in the index of offensive BW methods are endemic diseases in Russia. Our biologists have been studying them since long before the revolution of 1917.

Q.: What else, besides the political will of state leadership, impaired the mass production of biological munitions?

A.: We acquired US bombs in the early 1950's and we used them till early 1980's. It was enough to create and improve our means of defense and to develop our offensive technologies in theory. What's more, in my opinion, there was a certain competition between various types of WMD. The attention was focussed on nuclear arms development since they were the most efficient means to ensure unacceptable damage for the enemy. We were the first to test hydrogen bomb, before the USA. That's why all our financial and scientific resources were used in this direction. The successful development of CW led to 40 thousand tons of stockpiled weapons. And BW were hard to store, difficult to employ and had a contradictory effect: by attacking the enemy, you could later infect your own troops with your own viruses. All these factors prevented the construction of a real BW carrier and impeded the development of its theoretical employment. And in order to bluff, it was enough to have the scientific potential and to imitate at least some actions in this area.

In fact, this is the current strategy of Iran and Iraq. These states have a real modern biological industry, whose foundation was created by the USA itself with supplies of technological equipment and personnel training. Now the USA and NATO member states are apprehensive of the use of biological weapons on the part of these *rogue* regimes, although they themselves contributed to BW development. I can assess this situation as a typical bluff aimed at blackmailing the international community. It

is most likely that Iran and Iraq do not have any biological weapons but their political hierarchy is well aware of the benefits of making a stir about this issue.

Q.: We said that the USSR had had no reason to create real models of biological weapons. But let's imagine that such a necessity emerged. How long would it take to start mass production of biological weapons?

A.: Thanks to geneticists, it became possible to change the characteristics of a pathogen with a help of genetic manipulations and to obtain a biological agent that would be less vulnerable to external conditions and more efficient in making its way through the human immune system. In the early 1970's the Government issued a decree on the expansion of genetic research and a serious study of bio-technologies. Biological weapons, with all their tactical drawbacks, are the cheapest kind of WMD in terms of production. The introduction of these technologies promised a tangible economic effect with minimal investment. That's why *Bioprom* was established as a special ministry to explore these opportunities and to advance our scientific technical achievements to the level of possible mass production.

Later *Bioprom* was given a new name - the Ministry of Medical Industry. And in cooperation with our institutes a number of scientific research institutes were set up in Obolensk (Moscow region), in Serpukhov (Institute of Immunology), and in Kaltsovo (Novosibirsk NPO *Vektor* or Institute of Viral Rickettsia). The possibility of creating an industrial structure for the production of offensive biological agents and their carriers was considered, but this program didn't reach its fruition.

The reason for that was political situation in the country. If it hadn't been for Gorbachev and his advisors we would have had some industrial enterprises capable of initiating mass production of BW components. We can only be relieved by the fact that this program was discontinued and wasn't fully implemented. And RAO *Biopreparat*, which was established later on the authority of the

Ministry of Medical Industry and received enormous state funding, has become the most advanced pharmacological civil facility in Russia, solving solely non-military medical problems.

This turn of events is welcome, although I somehow feel sorry for our military institutions, which as always have given impetus to the development of civil industry and are now without modern equipment and appropriate funding.

Q.: When we speak about biological offensive means, you mention aerosols, liquids and powders. But from my childhood I remember the most famous poster on civil defense, showing a man with a broom who was sweeping away bugs and cockroaches. Why have the researchers chosen liquid aerosol BW forms?

A.: You know any weapon designer wants to get a quick effect from its use. In our opinion, the most reliable means of the dispersion of pathogens was aerosol, each particle of which contained a pathogenic organism. A person, inhaling such air, would be immediately infected. You can use disease carriers but the probability of desirable effect will be much lower. The carrier may die or may not find a soldier. Moreover, a sting is always less dangerous than the inhalation of contaminated air. Japan used to employ plague-infected fleas in its projectiles, and I presume that's the reason why these insects are associated with biological weapons.

There is another reason. You disperse a powder or a liquid and it will become airborne. And since louses are heavy, they won't fly in the air. It's difficult to cover the area with mosquitoes and louses. You can disperse them but they will fall somewhere and the zone of damage will be small. However, we do have suspicions about the mass emergence of Colorado beetles in Russia, a species known for damaging potatoes.

Last year in the Saratovskaya region, we fought against locusts and managed to save the harvest, nearly destroyed by these insects. When we started to determine the type of these insects, it turned out that they originated on the Apennine peninsula (a very distant place from the Volga). So, it's up to you to decide whether it was a *gift of nature* or a secret form of

diversion, especially with regard to recent developments in Cuba. The USA was accused of dropping a container with insects destroying sugarcane on Cuba. Cuba even appealed to the UN for an investigation. Sometimes carriers of diseases may be used as a diversionary tactic but they aren't suitable for large-scale germ warfare.

Q.: But, in my opinion, even in the era of global confrontation no one seriously considered the possibility of launching a large-scale biological war...

A.: I agree. It is more likely that the possibilities of demonstrative diversion were considered. That's why nowadays the problems of biological defense have a different meaning than several decades ago, at the outset of these experiments. Modern laboratory equipment enables you to produce the most dangerous pathogens even in the most maladjusted conditions. And the result is a growing risk of biological terrorism.

For instance, in the USA several groups of biological terrorists have been detected. One group inserted Salmonella into the food at a small roadside cafe. As a consequence, about 200 people were hospitalized. One *lunatic* was caught in his attempts to buy plague pathogens. Anyway, even in Russia one of the Chechen warlords threatened to use biological weapons, and we can't underestimate this menace.

Q.: In your opinion, what is the most probable development of this scenario? How would such a terrorist act be performed?

A.: It wouldn't be a big problem for a biologist who is a real specialist. You only have to possess some specific traits of character. It's not difficult to procure a biological agent for a weapon and then to act. For instance, let's take the case of the 201st division in Tajikistan. A warlord from Afghanistan (I don't remember well but he might have been trained in Pakistan) got acquainted with a nurse in a hospital. She collected the urine of a patient suffering from hepatitis for him. The urine was used to wash melons and watermelons; sometimes it was put inside the fruit with a syringe. Then the infected melons were sold at

a very low price to divisions of marching Russian soldiers. Our soldiers of course bought the fruit with pleasure and, as a result, were infected with hepatitis. It all happened in 1995, but it may be regarded as a classical example of biological terrorism.

Now let's take another situation. Who can prevent a terrorist from coming to an agreement with the staff of hazardous laboratories engaged in work with pathogens? It would be enough to procure one gram of the biological agent, multiply it in a nutrient medium and the weapon is ready. The thing is that even beef broth may serve as a nutrient medium. And then when you have a multiplied agent, you can use it in public places, on fruit and stationery, on door handles or you can spray it into the ventilation system. This would be terrorism.

Q.: If this is really so, then there must be a list of the most probable biological threats for the Russian population? Especially if we take into account that at present your potential is little used in the Armed Forces. What are your primary responsibilities?

A.: First of all, we are preparing to defend against such terrorist attacks. We are not pioneers in this area, we study corresponding foreign literature, translate articles on possible economic damage to the country in the case of terrorist BW employment. The USA has calculated and modeled the use of biological weapons against a town with a population of 100,000 people. Americans did these calculations to assess the amount of insurance fees on creating a stock of BW defense mechanisms. They understood that it would be more cost-efficient to have stocks of vaccines (which could be annually replaced with fresh ones) than to conduct liquidation activities later, trying to localize the consequences of a terrorist act. After studying this work we came to the same conclusion and decided that it would be reasonable to take similar precautions. And we are capable of solving this problem since we have already developed methods of detection, identification and protection from biological weapons in the Armed Forces.

Q.: What will be the core of this program?

A.: It is comprised of components similar to those we have just discussed.

Q.: But we live in Russia!...

A.: I must say here that the USSR started a special program. Its implementation involved 15 ministries and agencies and about 100 scientific research institutes. And all of these organizations developed means of defense. Today we don't have such a state program. We are required to report to the UN that this program is underway and we have reported that we have it. But, in fact, only one military institute carries out such a program.

Civilian institutes are working on such banal infections as flu, tuberculosis, and AIDS. But if someone uses a pathogen in combat, the only hope will be the military. And we'll find the means to defend people. We are the only facility exclusively working with pathogens of hemorrhagic fevers (Ebola, Lassa, Marburg). Anthrax can be also added to this list since the civilian institutes work with it but the vaccine is produced only in Yekaterinburg by our military institute. We supply the Russian Federation with all necessary means and even export some medicines abroad.

Q.: That is very interesting. As far as I know when we were creating a vaccine from the Ebola virus, we didn't have infected blood samples and the USA (failing to gain the victory over this disease for many years) refused to help us. How did you solve this problem and manage to create a vaccine and even export it?

A.: To be frank, we developed not a vaccine but a gammaglobulin. The thing is that in recent years migration has significantly increased and it concerns our population as well. And now Africa is visited not only by diplomats and tourists but by a number of specialists who work there on a permanent basis. That's why the threat of infection and transmission of exotic diseases like hemorrhagic fevers (Ebola, Dengue, Marburg) has grown several times in comparison to the Soviet era. Our direct responsibility is to know how to detect and classify these diseases. We must be sure that a person has Ebola fever and not the flu. At the

same time, these diseases and their symptoms should be familiar to civil physicians and not only to the military, which is already well aware of such diseases.

In 1997 we had such a case. Two pilots came from Zaire to Stariy Oskol and fell ill with an unknown fever. Local doctors had a suspicion that it was Ebola fever for at that time Africa was suffering from its epidemic. When they started to look for a specialist capable of curing such an exotic disease, it turned out that we had them only in the Army. Major-General Alexander Makhlai, head of the Sergiev Posad virology center (by the way, also a Hero of Russia for his invention of the gammaglobulin against Ebola fever), and another institute employee went to Stariy Oskol. They diagnosed the patients and found out that the pilots had malaria. In addition, they had the chance to train personnel in the infectious diseases department to work in the emergency department of hazardous viral diseases. And when they came back we decided to take measures to prevent such cases in the future, bearing in mind that we had the Ebola culture.

Q.: Where did you get it? The pilots had malaria and the USA refused to give you the Ebola culture?

A.: Right you are. The Ebola culture came to us from confidential sources...

Q.: That means that our foreign intelligence gets the job done, doesn't it?

A.: In a way I would agree... So, we had the Ebola pathogenic organism and decided to make a gammaglobulin. But we had to start from the very beginning because we didn't know what sort of pathogen it was, how to work with it and what precautions should be taken, what its nutrient medium was. Then we completed the cycle of these dangerous activities. To test the efficiency we had to vaccinate horses with the virus. It is difficult to describe working with a horse infected with Ebola. Under normal conditions this animal is difficult to manage and we had to work in special protective gear. One false step, one torn glove and the consequences would be grave. One of our employees died in the course of experiments. She tore her protective gloves but concealed it from the leadership since it happened just before the New Year holidays.

As a result, by the time she turned to a doctor for help it was too late.

Later we got the blood of Ebola-infected horses, sterilized it and singled out the gammaglobulin. Then we learned to make the immunoglobulin not from a pure virus but from immune systems. First we tested this medicine on animals, then on volunteers, made sure that it had normal pharmacokinetics and could protect not only monkeys and small laboratory animals from the fever. In the end, we decided to present our invention as a full-fledged pharmaceutical. When in Africa there was a new outbreak of Ebola fever we offered 150 doses of our drug to the World Health Organization. It shared our medicine with the USA and the latter confirmed that it was a real gammaglobulin possessing all necessary characteristics for prophylaxis but not capable of curing the disease. The thing is that when the fever has developed it is useless. However, at the initial stage when the possibility of infection is suspected it can fully protect a person from the lethal Ebola virus.

Q.: Your department finds itself in such a gloomy financial state with so many promising achievements! In my opinion, it's a paradox. I remember how before "Desert Storm" the US Army command turned to you with a request to sell them all of your anthrax vaccine. I guess there are some other proposals...

A.: Yes, there are but we cannot complete all of them.

Q.: You denied the USA the anthrax vaccine?

A.: It's a rather usual thing. The USA was our potential enemy during the Cold War and the issue of supplying them with samples of our military vaccines was long decided by various state structures. As a result, the USA, having a clear deadline for beginning "Desert Storm", purchased the vaccine in China. However, in my opinion, the main reason was not bureaucratic obstacles but an unwillingness of the state to share its military secrets in such a sensitive area as biological weapons development for the state has a great future. And, frankly speaking, the 37 aforesaid items of the biological list are just the first generation of biological weapons. Today in many parts of the world the development of the third generation is underway...

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