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Status and Perspectives for Nuclear Power in Russia in a Fast-developing World

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Distinguished ladies and gentlemen,

I am pleased to address you at the Annual Symposium of the World Nuclear Association - the organization I have the greatest respect for.

Today we witness a challenging period in the development of the nuclear power industry. On the one hand, a pronounced interest in nuclear power is discernible in rapidly developing countries; on the other hand, nuclear energy naysayers still hold their positions. In these circumstances the activity of the World Nuclear Association is of particular importance; it allows for wider and tighter contacts between international nuclear market players in order to exchange opinions and constructive ideas and arrive at mutually advantageous decisions.

Today we witness an acceleration of positive tendencies in the Russian nuclear industry, which I deem is the consequence of positive shifts in Russia's economy as a whole. During a volatile period of transition to the market economy, Russia was able to preserve its nuclear industry, and today we eagerly discuss avenues of its further development. I would like to focus on this question during my contribution and, mindful of the audience present here, put emphasis on international cooperation. In this respect our strategic goal is to preserve and enlarge our positions in the world nuclear industry and to ensure further development of our domestic industry on the basis of extensive and mutually beneficial cooperation with foreign partners.

The goal of heightening the role of Russian nuclear power industry in the energy budget of Russia is a cornerstone of such development.

An improvement of nuclear generating capacities in the Russian power sector seems to be conditioned by the following objective reasons:

- A sustainable growth of the Russian economy in recent years and its drive towards doubling the GDP in the next 10 years;

- The role of nuclear power as a factor of conservation of other valuable energies: gas and oil, given the environment of rapid growth of world oil and gas prices;
- A set of reforms in the Russian power engineering targeted at higher economic attractiveness of its nuclear power component.

Recent industry indicators show a positive trend of development of the domestic nuclear power industry. In 2003 in total 148.6 billion kWh of electric power were produced by Russian nuclear power plants, which considerably exceeds planned values. Just to compare, only 5 years ago, in 1998, the total output was 104 billion kWh only. A gain in energy production compared to the level of 2002 was rather substantial and constituted 8.8 billion kWh, or 6.3%.

In the year 1998 the plant capacity factor averaged at 55.6%, while in 2003 – at 76.3%.

Special attention is now given to safety improvements in existing nuclear power plants.

Our further objectives envisage an annual 4% growth of nuclear power generation. At the same time, nuclear electric power generation should reach 200 and 300 billion kWh in 2010 and 2020 respectively, and the installed total electric capacity of Russian nuclear plants should reach 28 GW in 2010 and 40 GW in 2020. This objective will be met by increasing the plant capacity factor up to 85% and constructing new power units. By the year 2011 we plan to complete and put into operation at least 3 nuclear units of high readiness – Unit 3 in Kalinin plant, Unit 2 in Volgodonsk plant, and Unit 5 in Balakovo plant.

Now let me refer to the **nuclear fuel cycle**.

As for its key element – uranium enrichment – Russia holds leading positions both in technological and production aspects. With regard to technology, it is known that we use the most cost-effective centrifugal method of uranium isotope separation and continuously upgrade it. In the intervening years there were 7 generations of centrifuges designed and implemented, while capacity, reliability and endurance properties were appreciably improved. With regard to production capacities, our capacities today amount to some 45% of the world level.

Russian nuclear industry holds strong positions in the sphere of nuclear fuel production.

The production of nuclear fuels and improvement of its operational parameters has been a priority task of the industry. It has been implemented on the basis of modern advances in science and technology. Russian enterprises persistently enjoy a considerable share in the world nuclear fuel market – 17% of the total power reactor needs – and meet deliveries to 13 countries, including European nations. An active work is underway to improve and develop new types of fuel, including fuel for the western type pressurized water reactors (PWRs).

With regard to nuclear reactor industry, as it was mentioned earlier, we plan to commission at least 3 nuclear power plants in Russia, based on VVER-1000 reactors.

We also participate in nuclear power plant construction abroad. Two units on the basis of VVER-1000 reactor are being constructed in India, two in China and one in Iran. We have been and will be holding an active position in this respect and plan to participate in nuclear plant construction tenders in these and other countries.

I would like to emphasize once again that we share entirely an approach of making our work for the construction of nuclear plants abroad an economically sound business, while understanding that it represents an activity in the sphere of sensitive technologies at the same time. In this respect, our task and obligation is to ensure a firm commitment to the non-proliferation of nuclear arms, which has been repeatedly confirmed by Russian delegates on different levels. Nuclear Weapons Non-Proliferation Treaty is a cornerstone of world stability and a basis for international cooperation in peaceful use of nuclear energy. We have always attached utmost importance to the non-proliferation regime and will invest all necessary effort for its enhancement.

In the future our commercial proposals for the construction of nuclear plants in non-nuclear countries will include proposals for turn-key nuclear plant deliveries, assuming obligations for nuclear fuel supply during the whole period of service. Such a package will also include obligations for the return of spent fuel. Therefore, a country that schedules no plans for the creation of its own nuclear industry will be offered a guaranteed possibility of employing peaceful nuclear power on very attractive economic terms.

With reference to future reactors, I would like to note that project VVER-1500 is close to completion. The new reactor is designed on the basis of its predecessor - VVER-1000, which is characteristic of proven and duly standardized technological solutions, and has one and a half as much of its capacity. The project will be finalized in the near future.

The problem of resource supply in the long-term outlook and the need to utilize accumulated plutonium reserves justify a keen attention to fast neutron energy.

We are working in this direction as well – one can refer to the promising project of BN-800 reactor with primary sodium, which would be put on commercial service at Beloyarsk plant in the foreseeable future, and the project of a fast reactor with lead-bismuth coolant.

We explore a possibility of transforming BN-800 into an international project, whose participants would have an equal access to the fast neutron reactor technology, and are ready to discuss the matter with the interested parties. This also includes the fast neutron lead-bismuth reactor.

Priority tasks of Rosatom also encompass the retrofitting of RT-1 spent fuel recycling plant at “Mayak” Production Association in order to expand spent fuel back-end capacities and settle a number of ecological issues, including those

related to the rehabilitation of contaminated territories, continuation of nuclear submarine decommissioning programs, etc.

In my opinion, strong positions of Russian nuclear industry in the world nuclear market will be playing a prominent role in ensuring world strategic stability. It is a safe bet to say, I believe, that the future development of nuclear power, or the destiny of atomic engineering in a broad sense, will hinge upon the development of international cooperation.

A seemingly stable parity at the world market of nuclear fuel cycle products and services is in fact fragile and may be easily shattered. The last year clearly demonstrated that. The world nuclear fuel cycle industry has a deal of so-called "bottlenecks" that normally do not become too much apparent, but in case of a slightest imbalance one becomes aware of its real impact and destabilizing role.

Such bottlenecks might be and must be eliminated by an extensive development of international cooperation.

Moreover, international cooperation fits well into the operations of the world nuclear industry that is essentially based on it and cannot develop in a different way. In fact, nowadays uranium-producing countries are usually devoid of an advanced nuclear power sector. Countries that run advanced nuclear power industries, on the other hand, usually lack domestic uranium resources. More examples can be drawn to support the thesis, although there are exceptions as well.

At the same time, stressing the importance of international cooperation and the role of Russia, I would like to address issues going beyond nuclear industry, in a broader sense - in the context of its influence on the world energy supply and economy as a whole. The following example may be of interest here.

The world public mind has built an image of Russia as of a country that exerts enormous influence on the meeting of world energy requirements by supplying huge volumes of oil and natural gas. At the first glance, the role of nuclear export is more than modest. Actually, its monetary values are considerably inferior to those of organic energy sources. However, if one compares the energy potential that eventually is to define the impact on the world energy balance, one is going to see a totally different picture.

If one calculates the energy equivalent of annual volumes of Russian low-enriched uranium, oil and natural gas supplied to the international market, it will become evident that in these terms uranium supplies make about 85% of the recent level of oil exports and 115% of natural gas exports.

This is to underscore the role of Russian uranium products export as a pivotal factor to ensure the world nuclear industry operations and to meet the world energy needs as a whole.

On the other hand, this is also to demonstrate the important role the Russian nuclear industry plays in the system of Russian power complex. Against the background of current aggravation of world economy in terms of energy supplies,

international cooperation in this sphere should be untrammelled of trade barriers and restrictions. Any trade restrictions in the sphere of energy resources make no sense and first of all undermine national economies of the countries that introduce such restrictions.

Unfortunately, in respect of existing international trade barriers, uranium products are a deplorable exception in its way if compared to other energy carriers. In Russia, we can feel this impact to the full extent. The issue of restrictions on Russian uranium in the US and European countries has unfortunately become a traditional one and has been raised over a period of ten years. As far as the Agreement Suspending the Antidumping Investigation on Uranium from the Russian Federation is concerned, I would like to note that we are utterly unhappy with the situation where Russian suppliers have no opportunity for developing direct contacts with American energy companies, and this fact significantly depreciates the Agreement in our opinion.

The fact that EU and Russia, in spite of a series of talks on the record, have been unable to reach a compromise decision in respect of nuclear commerce, notwithstanding its utmost importance for our nations, also gives rise to concern, given the dimensions of such commerce and an active development of cooperation in other energy carriers. It is good news that this year we managed to reach a compromise in respect of nuclear commerce involving our supplies to new EU Member States of Eastern Europe. We hope for a similar positive dialogue in discussing the issue of commerce as a whole, keeping in view traditional EU Member States.

For my part, I can guarantee that the Federal Atomic Energy Agency will pursue a policy oriented at making Russian nuclear product and services exporters do international business in compliance with all business standards existing in the world market and become reliable providers of high-quality products and services that fully conform to international standards.

I would like to expand particularly on the HEU-LEU Agreement. I think it is important not only for Russia, though it is really important for Russia, but also for other world market players. The HEU-LEU Agreement, as it was repeatedly emphasized, is a unique historical example of approaching nuclear disarmament not in a hang-the-expense manner, but in an economically sound and mutually advantageous way. Let me use this opportunity to assure you once again: Russia shall faithfully execute the Agreement throughout all its currency. All our steps made in 2003 and 2004 were aimed at fulfilling this objective, including a number of steps to regulate the selling of natural components of LEU supplied in the framework of the HEU-LEU Agreement.

Referring to a more long-term outlook, we should note that Rosatom is now considering all possible variants for the period beyond 2013 and is elaborating corresponding strategies both for the international and the home market. In particular, we are going to study once again the program of modernization of separation capacities, especially for the period beyond 2010, to ensure that capacities committed to serving foreign consumers fully cover our market share and adequately fit the expected demand.

Also I would like to touch upon some issues of reforming Russia's nuclear industry.

By virtue of the Presidential Decree dated March 9, 2004, Federal Atomic Energy Agency was created on the basis of the extinct Ministry of Atomic Energy of the Russian Federation. A separate Presidential Decree broadened the mandate of the Agency.

What are the implications of this reform? A fundamental distinction is that a federal Ministry is closer to political matters, while a Federal Agency - to economic matters. The head of the Federal Agency is not a political figure, but rather a technical manager. The Agency, in its turn, is a competent authority accountable directly to the Government of the Russian Federation and acting as a government contracting authority in respect of target programs, while supervising nuclear submarine decommissioning, fuel transportation, etc. The Agency can submit legislative proposals to the Government of the Russian Federation thus enhancing legal aspects of its competence. Therefore, in spite of the fact the emphasis now is mainly put on the economic aspects, the Agency is a Federal Executive Authority to pursue government policy in the sphere of atomic energy.

As a result of scheduled changes, in the short term the system of Rosatom enterprises would undergo through a radical change of economic and property relations. In the first place, changes should concern the legislation to facilitate normal interaction between the state and enterprises and in-house processes based on market relations. Such legislative changes may also encompass the form of nuclear materials ownership.

The changes should optimize the manageability of the nuclear sector as a whole, including nuclear power, fuel cycle and defense industry. As far as foreign economic activity is concerned, I am convinced that our changes conform to the standards of modern economy and organically fit into the international economic process.

This is particularly important in the light of Russia's future accession to the WTO, when our foreign trade, including nuclear commerce, will be governed by GATT principles. This means that we expect Russian nuclear exports to continue on a non-discriminatory basis, mindful of equitable trade principles.

Russian nuclear industry is on the dynamic pace now, and if our mutual understanding with foreign partners shows the same dynamics, this will mean mutual advantages and stronger positions of all stakeholders. Moreover, a better economic mutual transparency, in my opinion, will help to achieve another not less important result – to improve the stability of world fuel cycle system and thus make an appreciable contribution to the drive towards progressive advance of nuclear power.

Thank you for your time.