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## 1. New Legislation, Concepts, Programs, Reforming

### **"Rosatom" has become "Atomenergoprom" sole owner**

RF Premier Vladimir Putin has made "Rosatom" a sole owner of JSC "Atomenergoprom" holding company by signing an order providing for transfer of nearly 7.7 million shares of the holding company to the nuclear state corporation.

According to the order dated December 1, 2009 "the shares of open joint stock company "Atomic Energy and Industrial Complex" in federal ownership (7696092 pieces) shall be transferred to State Atomic Energy Corporation "Rosatom" at their nominal price as a pecuniary contribution of the RF".

The order was issued in pursuance of the RF Presidential Decree dated March 13, 2009 on JSC "Atomenergoprom" stock transfer to "Rosatom".

The "Atomenergoprom" shareholding was divided between "Rosatom" and the Russian Federation by the Federal Agency for State Property Management "Rosimushchestvo" in the course of nuclear enterprises (FSUE) corporatization and their further transfer to "Atomenergoprom" ownership.

### **A draft law envisaging elimination of the state corporations may be brought in the parliament in the next year – Dvorkovich**

Draft laws on state corporations transformation into joint stock companies will be submitted to the State Duma in 2010, though the status of "Rosatom" and Vnesheconombank (VEB) state corporations will remain valid over the entire 2010, as reported by the RF presidential aide Arkady Dvorkovich.

The presidential aide explained that the state corporation commitments, inclusive of external financial consequences, i.e. amount and availability of the necessary resources, as well as possible legal risks, will be taken into consideration in the process of decision-making.

Dvorkovich emphasized that the transformation procedure could not be accomplished within a few weeks. "According to our preliminary estimates the draft laws concerning the corporations transformation into joint stock companies can be brought in to the parliament in the next year", he said. Meanwhile, the presidential aide pointed out that "bringing of

draft laws at most is envisaged for "Rosatom" and Vnesheconombank".

### **The RF Government approved Energy Strategy of Russia for the period through 2030**

The Government of the Russian Federation has approved the Energy Strategy of Russia for the period through 2030. Chairman of the RF Government Vladimir Putin signed the relevant order No. 1715-r dated November 13, 2009. Admittedly, the validity of Energy Strategy for the period through 2020 approved in 2003 has expired. The main objective of the new strategy consists in "creation of innovative and efficient energy sector of the country adequate both to the demand of expanding economy for energy resources and to foreign-economic interests of Russia, providing for the required contribution into socially oriented innovation development of the country". The document envisages that the state will render direct assistance to the nuclear power development.

The Strategy provides for increase in NPP installed capacity up to 28-33 GW by 2013-2015 (the first stage of the Strategy implementation), up to 37-41 GW by 2020-2022 (the second stage), up to 52-62 GW by year 2030 (the third stage). Accordingly, it is expected that the share of NPP in total electric power output in the country will amount to 17.6-18.3% at the first stage, 18.2-18.3% at the second one, and 19.7-19.8% at the third one. The capital investments required for nuclear power development will make up \$100-139 bln by year 2030 (in the 2007 year prices), i.e.: \$29-30 bln at the first stage, \$13-28 bln at the second one, \$58-81 bln at the third one. Nuclear power plants will be mainly constructed in the European part of Russia. Series-produced nuclear power plants equipped with fast neutron reactors and the relevant closed NFC enterprises will be provided along with continued construction of NPP with thermal neutron reactors.

It is anticipated that the prospected and potential natural uranium resources, the accumulated reprocessed uranium stock, as well as the available and expanded capacities of the nuclear fuel cycle will provide for the predicted parameters of the nuclear power development. Based on the data contained in the Strategy probable uranium resources referred to categories P1 and P2 amount to 830 thous. tons, 60% of them being concentrated in Siberian federal district. Uranium reserves in Russia fit for development in the context of the

current economic situation amounted to 547.8 thous. tons as of January 1, 2008, those referred to categories A+B+C1 account for 216.2 thous. tons, category C2 – 331.6 thous. tons. Their major part (95%) is concentrated in Siberian and Far East federal districts.

Meanwhile, it is mentioned in the Strategy that the potentialities of natural uranium mining and production available in Russia do not meet total demand for it on the part of nuclear power enterprises. It is planned that the difference between annual production of natural uranium and its overall predicted consumption will be compensated by uranium stockpiles and fuel recycling with simultaneous gradual transfer to nuclear fuel breeding in fast reactors, as well as by purchase and production of uranium in NIS and at joint deposits. By the end of the first stage of the Strategy implementation total uranium output shall be provided at a level of no less than 6 thous. tons per year, and by the end of the second stage - 17 thous. tons per year. "Rosatom" is instructed to submit annually the reports on implementation of measures envisaged by the Strategy to the RF Government in the first quarter.

#### **Ministry of Fuel and Energy of Ukraine developed the program on development of nuclear energy in Ukraine to 2020**

On February 25, 2009 a concept of State Targeted Energy Program (STEP) "Nuclear Fuel of Ukraine" was approved, as a consequence, on September 23, 2009 the STEP "Nuclear Fuel of Ukraine" as such was approved by Ukrainian Cabinet Council Resolution No. 1004. The Program objective consists in providing for development of uranium and zirconium production in Ukraine and construction of capacities for nuclear fuel and its components production. The document envisages: increase in natural uranium concentrate production up to 1880 tons per year; construction of a complete cycle of zirconium production yielding rolled zirconium metal in the amount of 170 tons per year; setup of manufacture of fuel assembly components, its output 620 complete sets per year; setup of nuclear fuel production and construction of the first phase of the fuel assembly fabrication plant, its output 220 tons of enriched uranium annually. The program embraces the period of 2009 - 2013. Total funds necessary for its implementation amount to 13550 mln. hryvnas (~\$1.bl.).

Based on the approved STEP "Nuclear Fuel of Ukraine" it is believed that incremental output of natural uranium concentrate, so as to meet completely the demand of fuel assembly fabrication for nuclear power plants of Ukraine, will be provided at the expense of:

- maintenance and development of capacities in the operating mines;
- increase in output of uranium ore mining due to development of the Novokonstantinovskoe and other new uranium deposits;
- increase in the output of uranium ore hydrometallurgical processing;
- development of new uranium deposits, making use of borehole underground leaching inclusive.

In the period up to 2013 it is envisaged that the operating mines capacities will be maintained and developed, a start-up complex of the enterprise will be placed into operation on the basis of Novokonstantinovskoe deposit, development of the Severinskoe and Tsentralnoe (Western zone) deposits, using traditional methods, and of the Safonovskoe deposit based on the borehole underground leaching technology will be started.

#### **"Rosatom" will set up a fuel company on TVEL basis**

State Corporation "Rosatom" has approved the decision to set up a Fuel Company based on JSC "TVEL" (a JSC "Atomenergoprom" subsidiary). At the first stage Corporation "TVEL" will receive shares of JSC "Joint Company "Separation-Sublimate Complex" (JC "SSC"), which in its turn will consolidate 100% shareholding of four separation enterprises, i.e. "Angarsk Electrolyzing Chemical Combine", "Electrochemical Plant", "Ural Electrochemical Combine" and "Siberian Chemical Combine".

Besides, a 100% shareholding of JSC "Engineering Center "Russian Gas Centrifuge" (EC "RGC"), integrating enterprises engaged in the development and manufacture of gas centrifuges and auxiliary equipment for separation enterprises - JSC "Vladimir Production Association "Tochmash", JSC "Kovrov Mechanical Plant", CJSC "PDB-Nizhny Novgorod", CJSC "Tsentrotekh-SPb", "Novouralsk Research and Design Center" Ltd., "Novouralsk Instrument-Making Plant" Ltd., "Ural Gas Centrifuge Plant" Ltd, will be transferred to JSC "TVEL".

It is contemplated that all the necessary "corporate actions" aimed at setting up the Fuel Company will be accomplished within 2010. According to the top-priority planning of measures aimed at setting up the Fuel Company, JSC "TVEL" up to the end of 2009 will have to work out a draft concept of the Fuel

Company development and submit it for concurrence to SC "Rosatom" and JSC "Atomenergoprom".

**"Techsnabexport" will get a license permitting uranium export to EU, USA and Korea by 2012**

The RF Government directed that Federal Service for Technical and Export Control (FSTEC of Russia) shall issue general licenses according to the established procedure for "Techsnabexport" permitting uranium export from Russia as metal, alloys and chemical compounds, their enrichment in terms of uranium-235 5% at most, to Great Britain, France, Germany, Netherlands, USA and Republic of Korea. Chairman of the RF Government Vladimir Putin signed the relevant order No. 1421-r dated October 2, 2009. The licenses validity period will expire on March 26, 2012.

**Atomenergoprom assets consolidation period is extended to December 1, 2010**

The period for transfer to JSC "Atomenergoprom" of nuclear sector state enterprises transformed from FSUE to joint stock companies has been extended up to December 1, 2010.

Head of state signed the relevant order on September 27.

Specifically, it was explained at Atomenergoprom that the transformed JSC "Lenatomenergostroy" will soon be integrated into the company.

Incorporation of some other FSUE, which have not completed corporatization process yet, is also planned for a later period. They are "Molniya" and "Krasnaya Zvezda" enterprises, as well as State Research Institute of Graphite-Based Structural Materials "NII Grafit".

It was added at Atomenergoprom that official registering of the rights for real estate property of the companies is underway at present.

**Commencing from 12th November 2009 JSC "Concern EnergoAtom" officially uses the full corporate name of «Russian concern for the production of electricity and heat at nuclear power plants" and if contracted – JSC «Concern Rosenergoatom"**

By direction of Federal Government dated 14.09.2009 No. 1307-P there is agreed to use of the word «Russia» in the name of JSC «Concern Energoatom" (hereinafter — Concern) at its renaming as Joint-Stock Company»

Russia concern for the production of electricity and heat at nuclear power plants « , abbreviated name — JSC „Concern Rosenergoatom“. The sole shareholder of Concern –JSC "Atomenergoprom" has taken decision (dated 05.11.2009 No.5) to make the appropriate amendments to the articles of association of the Concern. The interregional Inspectorate of the Federal Tax Service No. 46 in Moscow on 12.11.2009 registered the corresponding changes in the articles of association of the Concern. Created under the status of Federal State Unitary Enterprise on 7th September 1992, in 2001 the Concern „Rosenergoatom“ was transformed into a generating company, and in the course of 2008 there was a reorganization of the Federal State Unitary Enterprise to Joint Stock Company „Concern for the production of electricity and heat at nuclear power plants" (JSC «Concern Energoatom «). Currently, 100% shares of Concern "Energoatom" are owned by "Atomenergoprom". The Concern incorporates all 10 nuclear power plants of Russia which have the status of the Concern branches, as well as the companies which provide activity of the generating company. In total at the 10 nuclear power stations of Russia there are operated 31 power units with nominal capacity of 23 242 MW, 15 pcs of which pressurized water reactors — 9 VVER-1000, 6 pcs — VVER-440, 15 pcs channel boiling water reactors — 11 RBMK-1000 and 4 EGP -6, 1 fast reactor. The share of electricity generated by nuclear power plants in Russia amounts to 16%. 100% shares of JSC "Concern ENERGOATOM" belong to JSC "Atomenergoprom".

**Early in 2010 Atomenergoprom will undergo restructuring entailing essential staff reduction**

JSC "Atomenergoprom" at the beginning of 2010 will be restructured for curtailing its redundant functions in relation to State Corporation "Rosatom", as reported by a source in "Rosatom".

The state corporation Supervisory Board may discuss the issue before the end of 2010.

The layoffs are planned both at "Atomenergoprom" and the State Corporation. On the average the managerial staff will be reduced by 20-25%, which implies layoffs for approximately 200 employees. "Anyway, the highly qualified specialists will not be gone", the source pointed out.

"Atomenergoprom" has performed its function, having aligned the management system coordination, there are no reasons for complaint", - the source said. According to him

the company will continue its activities but rather in the form of a “certain corporate structure”.

At this point there is redundancy of corporate procedures in the nuclear power sector management system, “the concurrence procedure should be rendered simpler and “Atomenergoprom” very frequently becomes an unnecessary link”, the source mentioned.

“We'll try to have time (for restructuring startup) by January 1 or at least in the first quarter of 2010”, - the source said in conclusion.

### **Atomenergoprom will consolidate industry design institutes on the basis of JSC “GSPI”**

Within the framework of the sole shareholder represented by JSC “Atomenergoprom” there will be carried out restructuring of JSC «Novosibirsk» VNIPIET «, JSC Ural FDI» VNIPIET «, JSC» Krasnoyarsk FDI «VNIPIET» in the form of joining to JSC «GSPI» (State Specialized Design Institute, Moscow).

These corporate changes are carried out as a part of restructuring the Nuclear Power Industry in order to improve its efficiency. Amalgamation of the design institutes on the basis of JSC «GSPI» is carried out in order to develop the area of design objects of the nuclear weapons complex, nuclear fuel cycle, nuclear radiation safety and industrial science, as well as the development of new competencies and strengthening the position of outside design market. Formation of the new company shall begin in November 2009. As Kirill Komarov, executive director of JSC “Atomenergoprom” noted — « the associate society subject to creation will improve controlling system in the field of survey and design, develop new activities, enter new markets, expand the current portfolio. At that there will be retained all unique experience of individual enterprises, their skilled personnel.

JSC „The State Specialized Design Institute“ (JSC „GSPI“) a 100% subsidiary of JSC “Atomenergoprom” established in 1948 for development of the project of production of metal plutonium and its products, items made of enriched uranium, designing of tritium production. As per the projects of the Institute there were commissioned enterprises produced uranium and its compounds, ones of calcium, beryllium, zirconium, lithium and its compounds. Designing of enterprises produced fuel rods and fuel assemblies in Elektrostal and Novosibirsk. Designing and calibration of gyroscopic navigation control systems of BR. Designing medical factories producing medicines.

Designing of industrial research centers, including the Kurchatov Institute, JINR in Dubna, IHEP (Protvino) FEI (Obninsk) INR (Troitsk) and others. JSC “Novosibirsk Design and Research Institute „VNIPIET“ (JSC „Novosibirsk“ VNIPIET „) a 100% subsidiary of JSC “Atomenergoprom” founded in 1955 as Siberian branch of GSPI. The Institute has designed the chemical-metallurgical plant in Krasnoyarsk, the objects in the Novosibirsk Chemical Concentrates Plant, provides design for development of the plant for production of uranium hexafluoride at the SKhK, construction of a similar plant in the AEKhK, reconstruction of the uranium plant in Ust-Kamenogorsk. It had designed hydrometallurgical plant for processing uranium ore at Tselinny GKhK (Kazakhstan), was engaged in development of the Novosibirsk plant “Himapparat”, of facilities for decontamination and disposal of radioactive waste at Kursk, Chernobyl and Ignalina NPP. It designed objects of Siberian Branch of the AS of USSR, East-Siberian branch of AS of USSR Academy of Sciences, Scientific Center, Siberian Branch of the Academy of Agricultural Sciences. JSC “Ural Design and Research Institute „VNIPIET“ (JSC „UPII“ VNIPIET „) a 100% subsidiary of JSC “Atomenergoprom” established in 1947 for the implementation of design and survey works on construction of the PA“ Mayak „. It was the general designer of CATU Ozersk, Snezhinsk, Novouralsk, Forest, Trekhgorny. Main areas of design — objects and enterprises of nuclear fuel cycle (Federal State Unitary Enterprise PA „Mayak“, Federal State Unitary Enterprise „UEIP“, Federal State Unitary Enterprise „Radon“), objects and structures of YaOK (Federal State Unitary Enterprise „Mayak“, Federal State Unitary Enterprise RFNC, Federal State Unitary Enterprise „Elektrokhimpribor, Federal State Unitary Enterprise“ Instrument-making plant „), JSC“ Krasnoyarsk Design and Research Institute „VNIPIET“ (JSC „KPII“ VNIPIET) a 100% subsidiary of JSC “Atomenergoprom”. It was established in 1952 as a branch of the Leningrad State Planning Institute for the design of plant-type «D» and some chemical plants, as well as an integrated design for industrial construction projects located in areas of central Siberia. As per the projects of the Institute it were constructed CATU Zheleznogorsk and Zelenogorsk, nizhnyaya Tura, a number of unique objects at the FSUE GKhK and the Federal State Unitary Enterprise Production Association «Electrochemical Plant”.

## 2. New Appointments in Nuclear Industry

### **The head of the “Russian Centrifuge”, manufacturing equipment for uranium enrichment, is discharged from his office**

Pavel Romanov, Director General of JSC “Russian Gas Centrifuges”, engaged in design and manufacture of centrifuges for uranium enrichment, is dismissed in line with the decision made by “Techsnabexport” Board of Directors.

"The RGC head was dismissed for failure to comply with key performance indicators", - a source explained.

Victor G. Nazarenko has been appointed acting Director General. Prior to his new appointment, V.G. Nazarenko held the office of the first Deputy Director General at JSC “EC RGC”.

### **Boris Kovalchuk, Rosatom Deputy Head, has taken charge of “Inter RAO”**

“Inter RAO EES” Board of Directors at a meeting held on November 25 elected Boris Kovalchuk, Deputy Director General of the State Corporation “Rosatom”, the acting Chairman of the Board.

B. Kovalchuk was appointed Deputy Head of the state corporation for development in April 2009. In “Rosatom”, he supervised over projects related to the development of non-core activities, including traditional energy and nuclear medicine. B. Kovalchuk is also a

member of the “Inter RAO” Board of Directors. The former “Inter RAO” Head Evgeny Dod, on November 23 headed JSC “RusHydro” (integrating most of the Russian hydroelectric power plants and being under the state control), taking the place of Vasily Zubakin, then the acting Chairman of the Board. The staff reshuffle was dictated, among other things, by the accident at the Sayan-Shushenskaya hydroelectric power plant on August 17.

B. Kovalchuk, a son of Yury Kovalchuk, a shareholder of the “Rossia” bank, before taking his position at Rosatom, held the office of the Head of Top-priority National Projects Department in the RF Government.

Later, on December 10, Anton Badenkov, the former Head of “TVEL”, was appointed adviser to the Head of “Inter RAO EES”.

Anton Badenkov in 2006-2007 was the acting president of JSC “TVEL” Nuclear Corporation.

The terms of reference for the new adviser to the Head of “Inter RAO” are still under discussion.

## 3. Industry News

### Uranium Mining & Processing

#### **Hearings on the Berezovoe deposit development in Transbaikalia have been arranged**

Public hearings of the Memorandum of Intentions on developing the Berezovoe deposit took place on December 21, 2009 in Ulety settlement of the Uletovsky area in Transbaikalia.

In the course of the public hearings, attended by Uletovsky area residents and journalists, representatives of "Gornoe" uranium-mining company, JSC "Atomredmetzoloto" and JSC "VNIPpromtechnologies" (the deposit development project designer) narrated about the plans of the enterprise development and socioeconomic significance of the project for the area in future. All the opinions voiced by public representatives were heard out. Most of Leninsky settlement inhabitants residing in close proximity to the deposit approved the project.

E.V. Vishnyakov, Deputy Prime Minister of the Trans-Baikal Territory, who took part in the hearings noted that the Berezovoe deposit development project is supported by the Territory Administration, while the Uletovskoe area residents can make their own proposals for reducing the adverse environmental impact produced by the enterprise.

As a result of the public hearings the Uletovskoe district administration has signed the protocol, which takes into account all comments and suggestions aimed at the project ecological safety improvement.

"Gornoe" uranium-mining company, a subsidiary of Uranium Holding "ARMZ" is engaged in the Berezovoe deposit development. After the plant is brought to its design capacity by year 2014, it will annually produce up to 100 tons of uranium. Today "Gornoe" UMC undertakes pre-project studies to determine the economic viability of the project.

#### **Kazatomprom anticipates a 58% increase in uranium mining in Kazakhstan in 2009**

It is expected that uranium mining in Kazakhstan in 2009 will reach 13.5 thous. tons, which is 58% in excess of the relevant index in 2008, as reported by the national atomic

company "Kazatomprom" with reference to the company head Vladimir Shkolnik.

Consolidated revenues from sales of products (work, services) of "Kazatomprom" in 2009 may exceed the 2008 level by 53%.

#### **Ukrainian VostGOK will not export uranium to the end of 2009**

State Enterprise "Eastern Mining and Processing Plant" ("VostGOK, Zheltye Vody, Dnepropetrovsk region of Ukraine) will not resume supplies of uranium concentrate to the end of 2009.

According to the press secretary of the Ukrainian Ministry of Fuel and Energy, Fent Di, in spite of the fact, negotiations are conducted with prospective contractors and exports may be resumed in 2010. Meanwhile, F. Di has not specified the companies concerned.

As previously reported, the head of Fuel and Energy Ministry, Yury Prodan, in the middle of November 2009 reported that the Ministry assumed that VostGOK would resume uranium concentrate supplies before the end of 2009. The minister pointed out the need for economic viability of such export.

"VostGOK" from the second quarter of 2008 refrains from exports of natural uranium concentrate because of a fall in prices for the source material in the world markets.

VostGOK exported uranium concentrate solely against spot contracts and after the fall of prices such operations became unprofitable for the company due to high production net costs of the source material.

NAEC "Energoatom" and "VostGOK" in June 2008 entered into a long-term contract on natural uranium concentrate supplies. The terms of the Contract provide for supply of entire uranium concentrate produced by "VostGOK" in the period of 2008-2018 with a view of its further use by "Energoatom" as a source material in the manufacture of nuclear fuel for Ukrainian NPP.

It is planned that in 2009 "Energoatom" will purchase 367.3 tons of uranium concentrate from "VostGOK" to the amount of 450 mln



hryvnas for providing a stockpile of nuclear fuel and nuclear materials.

### **The “Lunnoe” uranium deposit (in the Elkon uranium ore area) development project was supported by residents of Republic Sakha (Yakutia)**

The “Lunnoe” uranium deposit (in the Elkon uranium ore area) development project was supported by residents of Republic Sakha (Yakutia) in November, 2009. "Public hearings of the Memorandum of Intentions on developing the Lunnoe deposit were held in the town of Aldan in Republic Sakha (Yakutia) on November 20. The project met with complete approval of local residents and supervisory bodies in industrial and environmental safety", - is pointed out in a press release.

Representatives of CJSC “Lunnoe”, JSC “Atomredmetzoloto” and JSC “Zoloto Seligdara” (Seligdar Gold) in the course of the hearings dwelled on the plans for the deposit development and on socioeconomic significance of the project. Special attention was paid to the environmental safety issues.

It was stated in the press release that "In the course of the next stage of the project development CJSC “Lunnoe” will develop and present for public hearings in 2010 the environmental impact assessment (OVOS) report and plan of measures aimed at environmental impact minimization.

CJSC “Lunnoe” set up on parity basis by uranium holding “ARMZ” and JSC “Zoloto Seligdara” will be engaged in developing the “Lunnoe” deposit, its resources being estimated as 800 tons of uranium and 13 tons of gold. On reaching its design capacity by 2016, the enterprise will annually produce up to 100 tons of uranium and up to 1 ton of gold.

### **ARMZ can gain control of large uranium deposits in Mongolia through the purchase of Khan Resources**

In the end of November, 2009 ARMZ announced the purchase of no less than two thirds of shareholding in Canadian Khan Resources Inc. mining company from its shareholders.

ARMZ interest towards Khan Resources Co. is explained by the company share in the development of the Dornod uranium deposit in Mongolia. The Canadian company share in the deposit is 58%, 21% belong to Mongolia, the rest 21% - to ARMZ.

The company plans to purchase the shares at the expense of owned funds.

Capital costs to be incurred for startup of an enterprise in the Dornod uranium deposit can amount to over \$200 mln.

The total resources of the deposit make up 22 thous. tons. Capital outlays for systematic startup of the enterprises will exceed \$200 mln. over a period of four-five years.

It became known that "Atomredmetzoloto" made an offer to purchase to Khan Resources Inc., the amount of the transaction is estimated to be \$32 mln., it is planned that the payment will be made in money.

"Atomredmetzoloto" announced that it is going to pay 65 Canadian cents per each Khan Resources share, their total number is 53.96 mln. pieces.

### **In 2010 “Atomredmedzoloto” plans to increase uranium production by 17%**

In 2010 JSC “Atomredmedzoloto” (ARMZ) figures on a 17% increase in uranium production, i.e. up to 5.5 thous. tons, said the ARMZ Head Vadim Zhivov.

According to him, the output by the results of year 2009 will amount to 4.7 thous. tons, the share of Russia accounts for 3.6 thous. tons.

Previously, it was reported that the company planned to mine 4.5 thous. tons of uranium in 2009, which is a quarter higher than in 2008.

### **ARMZ plans to complete the design of Elkon MMC in 2011**

ARMZ intends to develop the Elkon uranium deposit in Yakutia in several stages. At the first one, in the period of 2010-2011, it plans to develop the relevant documentation, while the enterprise will attain its design capacity in 2031. Based on the plan, the construction and placing into operation of the uranium production enterprise are contemplated in 2012-2019, in 2014-2016 the enterprise will be placed into plot-industrial operation, and it will be brought to design capacity in the period from 2017 to 2031. On reaching the design capacity, ARMZ plans to mine 5 thous. tons of uranium and 1.5 tons of gold based on the Elkon MMC.

### **“Rosatom” and “Kazatomprom” signed a cooperation agreement for uranium production**

The agreement was signed on November 20, 2009 in the presence of heads of governments of Russia and Kazakhstan, Vladimir Putin and Karim Masimov.

A "roadmap" of additional measures to implement a comprehensive program of the Russian-Kazakh cooperation in atomic energy

for peaceful applications in reference to joint implementation projects on natural and enriched uranium production, as well as on designing and construction of nuclear power facilities in the territory of Kazakhstan, was signed by Alexander Lokshin, "Rosatom" Deputy Head, and Vladimir Shkolnik, Chairman of the National Atomic Company "Kazatomprom".

### **In the period of 9 months Kazakhstan increased uranium production by 61%, i.e. to 9.5 thousand tons**

In January-September 2009 total uranium production in Kazakhstan increased to 9.535 thous. tons, i.e. by 61% compared to the same period in 2008. By the results of this year the national company "Kazatomprom" expects to receive net income of about 49 bln tenge (\$326.6 mln), as reported by the press service of the company.

"Consolidated net income of the National Atomic Company "Kazatomprom" made up 29 bln tenge (\$193.3 mln) in the 9 months of 2009, the targeted indices were exceeded by 27%, the growth was 55% versus the comparable period in 2008," – is pointed out in the report.

### **ARMZ set up a subsidiary in Great Britain for financing uranium projects**

It is stated in the 2008 ARMZ report under IFRS that the Russian Uranium Holding JSC "Atomredmedzoloto" (ARMZ) established a subsidiary, i.e. Vostok Power Resources Limited (VPRL) in the UK for extrabudgetary funding of uranium mining projects.

ARMZ is among the five largest uranium mining companies in the world, being the second in terms of uranium reserves, which amounted to more than 538 thous. tons on January 1, 2009.

VPRL was established "to implement "Atomredmedzoloto" international projects, to carry out "Atomredmedzoloto" missions for extra-budgetary funding of uranium projects, to arrange interface with potential investors and international advisers / consultants," the report said.

The authorized capital of the company is 214.2 thous. pounds sterling.

### **Rosatom is ready to cooperate with Tajikistan in the development of uranium deposits**

The Russian State Corporation "Rosatom" opens detailed negotiations on the development of uranium deposits in Tajikistan, as reported by

Nikolai Spassky, the Corporation Deputy Head, on November 13 in Dushanbe.

"There is information about new uranium deposits in Tajikistan. There is a need for elaborate studies. We are ready for the work, interested in it, and we now proceed to practical cooperation," - he said behind the scenes of the fifth meeting of the Council for Cooperation in peaceful use of atomic energy under the Integration Committee of Eurasian Economic Community (EurAsEC).

Uranium deposits in Tajikistan are located in the north - in the Sogd region near the borders with Kyrgyzstan and Uzbekistan.

In the course of the meeting, Abdujabbar Salomov, Director of the Agency for Nuclear and Radiation Safety under Academy of Sciences of Tajikistan, in his turn, noted that, Tajikistan and Kyrgyzstan were natural uranium suppliers for many years, which entailed large quantities of radioactive waste, most of which was placed in the tailings storage facilities.

According to him, Tajikistan has accumulated about 55 mln tons of the waste. Dushanbe and Bishkek are planning to apply to the Eurasian Development Bank requesting the funds needed for the waste neutralization.

"The exact amount is not yet known, but monitoring and research alone necessitate over \$10 mln", - A. Salome said.

As reported, "Rosatom" is responsible for drawing up a draft program of remediation of hazardous tailings storage facilities in Kyrgyzstan and Tajikistan elaborated within EurAsEC to reduce the risks stemming from radioactive burial grounds. The draft remediation program of two hazardous tailings storage facilities in these republics is designed for 6 years, and if approved by the Governments, it will be implemented in 2011 - 2016. The program total budget may amount to 1 bln rubles.

### **Rosatom is ready to buy low-cost uranium deposits in case of favorable market conditions**

Rosatom State Nuclear Energy Corporation is ready to buy low-cost uranium deposits in case of favorable market conditions, a source from Rosatom told.

Russia has enough uranium for the moment and can meet its demand for 100 years ahead.

At the same time, today it is a good moment for the country to enlarge its influence on the uranium market. A number of foreign companies have fallen in price by 10 times. "We want to

buy these assets as long as we can do it," the source said.

The source said that there are three cost categories for uranium assets: \$40 per 1 kg, \$60–80 per 1 kg and over \$80 per 1 kg.

In Russia the cost of uranium assets ranges within \$60 per 1 kg.

"We believe that we must urgently buy deposits with uranium production cost less than \$40 per 1 kg or a bit more," the source said.

Regarding Elkon uranium deposit in Yakutia, the source said: "We do not need uranium from that deposit for the time being but we must start it up. We are successfully negotiating this project with potential investors."

As was reported earlier, Elkon Mining Combine in Yakutia is supposed to reach full capacity in 2015–2016 with almost 2bln RUR to be invested in this project in 2009–2010. 51% of the company's shares will belong to the Russian Government. Investors will be involved in individual projects.

Director General of Rosatom State Nuclear Energy Corporation Sergey Kiriyeenko said that among the potential investors are Mitsui, EDF, Korean and Japanese companies. Elkon Mining Complex is being built by Atomredmetzoloto OJSC, the uranium mining division of Atomenergoprom. As soon as set at full capacity, the combine will produce up to of uranium to be used by the nuclear industry.

The uranium reserves of Yakutia total 319,000 tons (6% of the world's reserves). Elkon uranium district is one of the biggest in the world (5.3% of the global uranium production).

#### **Coordination Board for considering the issues of sulfuric acid production and supplies was set up in October, 2009**

Based on the NAC "Kazatomprom" approved program aimed at incremental uranium production up to 15 thousand tons by year 2010, the consumption volumes of sulfuric acid, as the main component used for uranium production by the borehole underground leaching, will increase, as well. In 2015 sulfuric acid consumption at the Company enterprises will increase nearly four-fold, compared to the relevant volume in 2006.

At this point in Kazakhstan sulfuric acid is produced by two companies, i.e. "Kazakhmys" and "Kazzinc". Maintaining its strategic partnership, JSC "NAC "Kazatomprom" for meeting the incremental demand undertook

construction of its own sulfuric acid production plant in Zhanakorgansk district of Kyzylorda region, its annual capacity 500 thous. tons. A capsule was embedded into the foundation of the new sulfuric acid plant on August 31, 2009.

Kazatomprom also plans to start up sulfuric acid production in Stepnogorsk. Construction of two similar plants additionally is contemplated by uranium mining JV "Inkaj" and "Katko".

Coordination Board will regulate the issues of sulfuric acid production and supplies. Besides, the Board will identify the funds required for construction and expansion of logistics capacities at "Trading and Transport Company" Limited Partnership (motor roads, storing and transshipment capacities). It will also consider potential tariff reduction for sulfuric acid shipment by the railways.

The Coordination Board will include "Mining Company" Ltd., JSC "Kazzinc", Corporation "Kazakhmys" Ltd. and JSC "Kazakhstan Temir Zholy" (Kazakh Railways).

#### **ARMZ expects that Rosnedra in the first or second quarter of 2010 will announce a tender on licenses permitting development of two uranium deposits in the RF**

JSC "Atomredmetzoloto" (ARMZ) figures on a tender to be announced by Rosnedra in the first or second quarter of 2010 on licenses permitting development of two uranium deposits in Russia: Khokhlovsky and Vershinnoe, as reported by Aleksandr Bojtsov, ARMZ Deputy Head.

According to him, the licensing of uranium deposits in Russia was discontinued more than a year ago following the approval of the law granting access of investors to strategic industries. However, in September a meeting was held at the Ministry of Natural Resources on uranium licenses issues. "We discussed these problems and came to understanding that we got things moving," - he said.

All the documents have been prepared, submitted, and we are in a wait state", - he added.

The Khokhlovsky deposit is a short-range reserve of "Dalur" holding company operating enterprise, its reserves being estimated at 7-8 thous. tons of uranium. The "Dalur" volume of production amounts to about 500 tons. "If we get the license (note – Khokhlovsky deposit is implied), we'll bring the output to 700-750 tons within 2 years", - A. Bojtsov added.

The Vershinnoe deposit reserves are approximately comparable, i.e. about 7 thous. tons, as well. It is adjacent to "Khiagda"

enterprise, the Deputy Director General pointed out.

### **ARMZ expects ¼ increase in uranium production in 2009**

Atomrednetzoloto OJSC (ARMZ) has reconsidered its uranium production forecast for 2009 and expects increase as compared with 2008, Vice President of ARMZ Alexander Boytsov said in Moscow on 1 October.

In 2008 ARMZ (with its Kazakhstan-based assets inclusive) mined 3,687 tons of uranium. This year it is planning to mine 27.3% more – 4,693 tons. The revision is response to the changes Kazakhstan has made in its production plans. According to the last forecast, Kazakhstan may produce 12,000 tons this year.

The growth in the output is due to Kazakhstan-based Karatau JV (700 tons) and Akbastau JV (150 tons). Zarechny JV is expected to produce 232 tons against 166 tons in 2008. Russia-based Dalur and Khiagda are planning to mine 460 tons and 151 tons, respectively against respective 410 tons and 61 tons in 2008.

Earlier, ARMZ forecasted 12% growth in uranium production in 2009.

### **ARMZ and Cameco are negotiating joint projects in Australia and Africa**

Atomredmetzoloto (ARMZ) and Cameco (Canada) are negotiating joint uranium prospecting projects in Australia and Africa, Vice

President of ARMZ Alexander Boytsov said in Moscow on 1 October.

The companies have set up two prospecting JVs in Canada and Russia but the Russian JV (Karhu) has failed to start up because of licensing obstacles. "Now Cameco is offering joint projects in other countries," Boytsov said.

However, ARMZ is not going to give up the Karhu project. "We will search for other possibilities. Today, ARMZ and Cameco have outlined their priorities – Australia and Africa. But we are not going to participate in existing enterprises. We are negotiating prospecting projects," Boytsov said.

He said that ARMZ had a uranium prospecting project in Namibia and the company was negotiating with local companies about other possibilities. "We are considering the possibility of participating in big companies (in Namibia) that are at stages close to mining: when there are four or less years left before the start of mining activities."

ARMZ is also negotiating an asset exchange deal with Uranium One. ARMZ hopes to get an almost 20% stake in that company. Boytsov confirmed that the company was planning to finalize the deal by mid Dec 2009. "We need a number of permissions – particularly, by the Canadian and Kazakh authorities as both parties have assets in Kazakhstan. We hope to get the permissions even earlier than planned," Boytsov said.

## Uranium Enrichment & Conversion

### **"Electrochemical Plant" has launched the first in Russia commercial plant for uranium hexafluoride processing**

JSC "PA Electrochemical Plant" (ECP, Krasnoyarsk Territory) put into operation the first in Russia commercial plant for depleted uranium hexafluoride (DUHF) processing, as reported by JSC "Atomenergoprom" press service.

Production in the "W-ECP" facility is based on depleted uranium conversion technology developed by Areva NC (France). Triuranium octoxide ( $U_3O_8$ ), the product yielded by conversion, can then be used for nuclear fuel fabrication for fast breeder reactors. The contract on DUHF facility construction on the ECP industrial site was signed in March 2005, by JSC "Techsnabexport" / ECP and French Areva NC / Societe General pour les Techniques Nouvelles (engineering company SGN, integrated into Areva group).

The plant design capacity is 10 thous. tons per year.

Under the contract Areva NC and SGN provide for design, manufacture, supply and installation of the equipment. Areva NC has transferred to ECP the exclusive right to reproduce the main equipment of the plant and its design documentation, which will permit manufacture of equipment for similar facilities at the Russian enterprises.

### **"Rosatom" appointed "Composite" a sole executive office of "Khimpromengineering"**

State Corporation "Rosatom" designated the "Composite" holding company a sole executive office of RPC "Khimpromengineering" and its subsidiaries for arrangement of the full manufacture cycle of items made of composite materials, is said in a "Rosatom" report.

State Corporation "Rosatom" designated "Composite Holding Company" a sole executive authority at the enterprise engaged in production of carbon fiber, i.e. JSC "SPC Khimpromengineering" (Moscow) and its subsidiaries: "Nitronic Synthetic Fibers" Ltd., (Saratov), "Argon" Ltd. (Balakovo, Saratov region), "Carbon and Composite Materials Plant" (Chelyabinsk). Forecasted sales revenues of these enterprises in 2009 will amount to 2.2 bln rubles,"- the report says.

This decision was made within program of cooperation between "Rosatom", State Corporation "Rostekhnologii" and "Composite"

company, aimed at uniting the efforts of the parties to create a modern competitive production of polyacrylonitrile and carbon fibers, as well as composite materials. Increase in "Rosatom" assets value by renovation and upgrading of the technological base, reducing the costs, expanding the product line, as well as increasing the sales volumes, can be stated as the main objective of "Composite" in 2010 in respect to the assets.

"Composite" Holding Company was set up in 2009 to form the composite materials market in Russia.

RPC "Khimpromengineering" is Russia's largest producer of artificial and synthetic fibers, through its subsidiaries. The company is a member of the federal and sectoral programs aimed at creating commercial production of a wide range of carbon fibers in Russia.

### **Rosatom reaffirmed its intention not to extend the contract with Urenco and Eurodif on uranium additional enrichment**

State Corporation "Rosatom" will not extend contracts with European companies, i.e. Urenco and Eurodif, on depleted uranium hexafluoride additional enrichment after year 2010, said Sergey Novikov, "Rosatom" spokesman. High Committee for Transparency and Information on Nuclear Security (France) discussed the depleted uranium hexafluoride (DUHF) treatment issues, including the Russian-French cooperation in this field, in Paris on November 20.

"With the domestic large-scale program of nuclear power development in Russia, "Rosatom" does not intend to extend or renew contracts with European companies Urenco and Eurodif on European DUHF additional enrichment, while its enrichment plants will focus on natural uranium enrichment rather than recycled one" – S. Novikov said, closing the meeting.

He recalled that the current contracts would expire in 2010, and "Rosatom" made the decision to refrain from the contracts prolongation in 2006. The plans remain in force. "Rosatom" acts in line with the decision. The existing contracts will expire in 2010, they will not be extended and no new contracts will be concluded,"- Novikov emphasized.

### **A new production line of gas centrifuges for uranium enrichment made operational at the Angarsk Electrolyzing Chemical Combine**

A new production line of gas centrifuges for uranium enrichment was put into service at the Angarsk Electrolyzing Chemical Combine. This was reported by the enterprise directorate.

"The newest of the Russian commercialized generations of centrifuges has been placed into service. The new equipment introduction will provide for increased capacity of the existing separation capacities of the Combine,"- the directorate specified.

The plans of increasing the AECC capacity by a factor of approximately 1.5, i.e. from 2.6 to 4 mln separation work units, were stated by the State Corporation "Rosatom" management in connection with setting up International Uranium Enrichment Center on the Combine basis. Under the IAEA supervision the Center is authorized to form orders for uranium enrichment services from the participating countries that have no own capacities and to place the orders at the AECC facilities, concluding the relevant contracts with AECC.

In particular, the decision has been made to provide a guaranteed reserve of low-enriched uranium in Angarsk, that will be enough for operation of two 1000 MW NPP units during a year.

Besides the capacity increase project of AECC as such, a joint Russian-Kazakh uranium enrichment plant will be deployed on the free floors of the separation plant. It is scheduled that the plant first phase, i.e. 1 mln SWU, will be launched in 2011, and the plant will be brought to full capacity of 5 mln SWU in 2017.

#### **"Rosatom", "Rostekhnologii" and "Composite" holding company set up a joint venture for composite materials production**

State Corporation "Rosatom" and "Rostekhnologii" conjointly with "Composite" holding company have established an enterprise to be engaged in production of polyacrylonitrile and carbon fibers, i.e. "New Composite Materials" Ltd., by appointing Leonid Melamed, now the "Composite" Head, the company Director General, as reported by "Rosatom" press service.

"Rosatom" and "Rostekhnologii" received 45% of the new company share capital, "Composite" - 10%. The company authorized capital is 15 mln RUR.

"As a result of the project implementation in Russia a modern production will be arranged of polyacrylonitrile and a wide range of carbon fibers, which are the source material base for a

new generation of polymer composite materials and the relevant items, permitting enhancement of the domestic materials competitiveness and significant expansion of their industrial applications", the report says.

In future, the company plans to involve "Rosnano" and a strategic investor to the project implementation, the press service pointed out.

"Composite" Holding Company was established in 2009 to form a composite materials market in Russia.

#### **Kazakhstan expects to occupy 7% of the world enrichment capacity by year 2020**

By 2020, Kazakhstan's share in the world uranium enrichment capacity may reach 7%. It was announced by Sauat Mynbayev, Minister of Energy and Mineral Resources of Kazakhstan, on October 8 meeting of the Government of Kazakhstan. The meeting dealt with the strategic vision of energy development of the Republic of Kazakhstan up to 2020, is stated in the report of the Government of the Republic of Kazakhstan. According to the Minister of Energy and Mineral Resources, in 2020 Kazakhstan can take up 14% of the world market of nuclear fuel production for NPP. He also noted that by 2020 Kazakhstan intends to be responsible for 16% of the world uranium conversion capacity, while Kazakhstan's share in enrichment facilities can reach 7%.

Its share in fuel pellets fabrication will also grow essentially, i.e. up to 12%. Besides, Kazakhstan intends to make operational at least one nuclear power plant in the territory of the republic by year 2020. Creation of a vertically integrated company encompassing all the cycles of nuclear fuel production, rather than uranium mining alone, is the main purpose of the nuclear sector in Kazakhstan. Specific steps have been made in this direction already. In particular, a Russian-Kazakh venture CJSC "Uranium Enrichment Center" has been set up in Angarsk, a Kazakh-Canadian enterprise "Ulba Conversion", to be engaged in construction of a uranium hexafluoride plant, was established, an agreement with the French AREVA on setting up a joint venture for nuclear fuel fabrication on the basis of Ulba Metallurgical Plant was signed.

#### **Rosatom has signed \$3bln worth contracts for uranium supply to Japan and France**

Rosatom State Nuclear Energy Corporation has signed \$3bln worth contracts for supply of uranium to Japan and France, reports the press service of Atomenergoprom.

"Rosatom has concluded long-term contracts for the supply of low enriched uranium to Japan

and the EU (France) for a total sum of over \$3bln. By the end of this year the Corporation may conclude more contracts worth up to \$2bln," says the source.

The direct contracts between TENEX and Japanese nuclear operators are the result of Rosatom's successful negotiations with the Japan Atomic Energy Agency and the signing of an agreement for cooperation in the field of peaceful use of nuclear energy.

The press service of TENEX reports that the amendment to the Suspension Agreement signed by Rosatom State Atomic Energy Corporation and the US Department of Commerce in 2008 concerning Russian uranium products suppliers enabled JSC TENEX (100% affiliate of JSC Atomenergoprom) to enter into direct contracts with North American companies

to deliver uranium enrichment services for 3m USD in total.

Therefore in accordance with the Amendment to the Russia-USA Agreement, JSC TENEX entered into six first long-term business contracts in 2009 to supply low enriched uranium (LEU) with the following utilities: AMEREN, Pacific Gas & Energy, Constellation, and Exelon. These contracts are evidence of high reputation of Russian uranium products at the US market, and demonstrate practically the high potential of long term trading cooperation in front end between US customers and JSC TENEX. It is therefore a breakthrough of Russian high-technology products to the largest nuclear market worldwide.

## Nuclear Fuel & Fuel Assemblies Fabrication

### **TVEL and Ukrainian Energoatom agreed on nuclear fuel supplies in 2010**

Yuri Olenin, President of JSC "TVEL", and Yuri Nedashkovsky, Head of the Ukrainian National Nuclear Energy Generating Company "Energoatom" signed an additional agreement to the existing long-term contract on nuclear fuel supplies to nuclear power plants of Ukraine in 2010.

Thus, 14 fuel supplies will be made by Russia for scheduled refueling of the Ukrainian NPP with fresh nuclear fuel in 2010.

During the negotiations preceding the signing of the additional agreement, the parties agreed on the cost of fuel, delivery schedules and payments. As noted in the communication, the fuel price is formed on the basis of the existing pricing methods resting on the global prices principles.

During the meeting the parties reaffirmed their intention to strengthen and develop the Russian-Ukrainian cooperation in NFC (nuclear fuel cycle).

### **"TVEL" is ready to begin the licensing of "TVS-Square" in 2010-2011**

JSC "TVEL" confirms its intention to begin the licensing and qualification procedure for fuel fabrication of its own design, i.e. "TVS-Square", for Western-design reactors in 2010-2011.

The "TVS-Square" project aimed at development of own design of the fuel assemblies for Western-design PWR type reactors was initiated in "TVEL" in 2002. The Russian design of fuel for the PWR reactors has a stable geometry, it is not subject to damage and it features a higher burnup.

"In 2009 the "TVS-Square" design adaptation for the PWR-900 reactors was completed, corrosion testing of structural alloys in the PWR water chemistry conditions were continued, a complex of analytical and experimental work substantiating the "TVS-Square" design was performed, mechanical, hydraulic and life tests of the "TVS-Square" full-scale test model were conducted, the initial phase of placing the "TVS-Square" into production was accomplished. The licensing and qualification of the "TVS-Square" fabrication process in conformity with requirements of specific customers will begin in 2010-2011.

Earlier it was reported that "TVEL" plans to load

the "TVS-Square" for conducting life tests in the MIR reactor (at the Research Institute of Atomic Reactors (NIAR) in Dimitrovgrad, Ulyanovsk region) before the end of 2009. Uranium dioxide fuel, its enrichment up to 5% in U235 with addition of gadolinium, is used in the "TVS-Square" design for the PWR reactors.

### **"TVEL" intends to expand cooperation with Areva NP in 2010**

In 2010 JSC TVEL intends to expand cooperation with the Areva NP on new projects and negotiates increase in co-operation with Indian partners.

The two thousandth fuel assembly for Western-type reactors according to the Areva NP specifications was made in May 2009 at "Mechanical Engineering Plant" (a "TVEL" subsidiary).

"In the period of our cooperation no claims of quality were made to the Russian fuel fabricator. By the results of the TVEL - Areva top management meetings and talks in 2009 they agreed to expand cooperation within a number of new and promising projects, their practical implementation will begin in the next year," - is said in the report.

### **Early in 2010 TVEL will sign another contract on fuel supplies for NPP in Slovakia**

JSC "TVEL" at the beginning of next year expects to sign another contract on nuclear fuel supply for NPP in Slovakia, the company press service reported.

The decision was made by the Slovak nuclear power plant operator, i.e. Slovenske Elektrarne Company, the commercial contract has been prepared for signing. The contract envisages supply of fuel for Mochovce NPP, units 3 and 4 currently under construction (General Contractor - Czech Skoda, integrated into the Russian "Joint Machine-Building Plants" holding company, and engaged in NPP construction based on the Russian project).

In 2009, TVEL also started nuclear fuel supplies for the Temelin NPP, unit 1 (CEZ being its owner) for early refueling, as decided by the plant operator. In 2010 the corporation plans to sign contracts on fuel supplies adequate for full load of the unit.

Moreover, in the previous year the company supplied experimental fuel assemblies of a new generation with improved performance attributes to the Hungarian Paks NPP. Following the



results of pilot operation, the approval of the Hungarian supervisory authority to transfer all the plant units to the new TVEL fuel since 2010 was received.

### **Russian NPP with the RBMK reactors will use a new fuel**

A new type of nuclear fuel with a higher enrichment of uranium will be used at nuclear power plants of Russia with the RBMK-type reactors in the near future, as reported by "Rosenergoatom".

"Rosenergoatom" made the statement at the field session of NPP Nuclear Safety Council, held at the Leningrad NPP (LNPP).

"The first experimental batch of two hundred ETVS (uranium-erbium fuel assemblies), fabricated based on the technology will arrive to LNPP before the end of this year and it will be tested at LNPP, unit 2", - it was said in the statement.

According to Konstantin Kudryavtsev, the LNPP chief engineer, Rostekhnadzor has already given its permission for using the new assemblies.

As pointed out by Anatoly Yegorov, Chairman of the Council and Deputy Director of the Channel and Fast Reactor Plant Operation Department of "Rosenergoatom", such fuel assemblies are more perfect in terms of safety and economic efficiency indices.

Uranium-erbium fuel with 2.4% enrichment in U-235 was initially used at the RBMK-1000 units in 1996. At that time the service life of the fuel assemblies was four years. Since that period uranium enrichment in the fuel assembly increased to 2.8%, while the time of FA "life" in the reactor core increased by a factor of 1.5.

"Thus, the use of a fuel with a higher enrichment improved the fuel use efficiency up to 60%" - the press service cited Egorov.

Currently, uranium-erbium fuel with the same enrichment in U-235 is used over the entire height of the fuel assembly at the RBMK power plants.

"The new fuel will have profiled enrichment: 3.2% in the center and 2.5% in the top and bottom parts, that is, on average, the enrichment will be 3%. This will save about 6% of the valuable fuel, i.e. U-235, without reducing the fuel use efficiency, entailing increase in the ETVS service life up to 8-10 years", - he said.

After careful analysis of service properties of the new type of fuel experts will decide on its further putting into service at other reactors of the RBMK-1000 power units.

### **AREVA and Kazatomprom sign a Fuel marketing joint venture agreement**

AREVA CEO Anne Lauvergeon and KAZATOMPROM President Vladimir Shkolnik signed today an agreement to create a Fuel Marketing Joint Venture named IFASTAR. The signing took place during an official visit by French President Nicolas Sarkozy to Astana (Kazakhstan).

This agreement follows the signature of a Framework Agreement in September 2009, and reinforce the partnership between both companies in the front-end cycle. It confirms AREVA and Kazatomprom strategy to develop their positions in Asia, producing together the most important uranium production in the world: almost 30% produced in 2008 came from both companies.

Under the terms of the agreement, the newly created Paris-based IFASTAR will be owned jointly by AREVA (51%) and KAZATOMPROM (49%).

The mission of IFASTAR is to perform a Feasibility Study consisting of two parts:

The assessment of the Asian market in view of selling integrated fuel packages (including all front-end segments and combining KAZATOMPROM's uranium resources and AREVA's fuel technology) to electric utilities operating in Asia

The assessment of the technical and economical feasibility of the construction of a dedicated fuel manufacturing line (400 tU/year) located at KAZATOMPROM's Ulba Metallurgical Plant (UMP) site in Ust-Kamenogorsk (Kazakhstan).

Depending on the results of the assessment, and after decision of the partners, IFASTAR would run the sales of the products from this line while the fuel manufacturing itself would be performed by another joint venture, owned jointly by KAZATOMPROM (51%) and AREVA (49%).

"The signing comes as a further result of a constructive long term relationship between KAZATOMPROM and AREVA and is, for us a further milestone in establishing a vertically integrated company, producing a value added product – fuel assemblies," Vladimir Shkolnik said.

Anne Lauvergeon commented: "This agreement reinforces the strategic partnership between AREVA and KAZATOMPROM. It will contribute to the diversification and security of our supplies by increasing available Uranium resources for our customers."

**TVEL and Exelon are discussing cooperation on nuclear fuel**

TVEL OJSC and Exelon (US) are discussing the prospects of cooperation on nuclear fuel, a source from the nuclear industry told journalists on Thursday.

Exelon wants to cooperate with TVEL on TVS-Kvadrat technology and is ready to provide the Russian company with all technical data on its reactors.

Meanwhile, TVEL has confirmed its plans to complete the qualification of TVS-Kvadrat, a fuel assembly designed for western reactors, and to load it into at least one reactor in Europe and the United States by 2015.

## 4. Nuclear Materials Supplies

### Deliveries of natural uranium to Russia in the third quarter of 2009.

Supplier	Recipient	Chemical form	Amount of U, kg U	Declared uranium price, \$/kgU <sup>1</sup>
Kazatomprom (Ulba Plant)	AECC	U <sub>3</sub> O <sub>8</sub>	100,500	23.5
AREVA NC	ECP	UF <sub>6</sub>	261,027	127.7
Kazatomprom (Ulba Plant)	AECC	U <sub>3</sub> O <sub>8</sub>	220,005	88
USEC	UEIP	UF <sub>6</sub>	616,932	30.2

### Russian import of depleted uranium (tails) in the third quarter of 2009

In the third quarter of 2009, a number of deliveries of depleted uranium as UF<sub>6</sub> (tails) to Russia were made by both AREVA NC and Urenco. The table below presents volumes and recipients.

Supplier	Recipient	Weigh of U, kg	Enrichment, %
AREVA NC	UEIP	448,411	0.395-0.402
AREVA NC	UEIP	158,260	0.396-0.403
AREVA NC	ECP	290,589	0.4
AREVA NC	ECP	189,414	0.4
Urenco (GB)	UEIP	58,709	0.315-0.317
Urenco (NL)	UEIP	1,189,833	0.274-0.331
Urenco (NL)	UEIP	710,092	0.270-0.335
Urenco (NL)	UEIP	536,788	0,260-0,319

<sup>1</sup> For information about prices please contact IBR Corp.

## Russian export of fuel assemblies in the third quarter of 2009.

Customer / Reactor	Manufacturer	Qv. of FAs	Weigh of LEU, kg <sup>2*</sup>	Average enrichment, <sup>235</sup> U, %	Declared price for one FA, USD <sup>3</sup>
Mohovice NPP (Slovakia)/VVER-440	MBP	78	9,805	-	159,229
Institute for Nuclear Research Rzheshh (Czech Republic)/ LWR-15	NCCP	10	17.6	19.75	173,764
RWE Power (Germany)/ Gundremmingen-B NPP (via AREVA NP GmbH)	MBP	72	20,016*	-	249,454
Kudankulam NPP (India) VVER-1000	NCCP	20	8,700*	-	433,715
Armenian NPP (Armenia) / VVER-440	MBP	12	1,448	3.6	209,524
Kudankulam NPP (India) VVER-1000	NCCP	20	8,700*	-	407,641
Armenian NPP (Armenia) / VVER-440	MBP	66	7,974	3.82	253,080
Hmelnitskaya NPP (Ukraine) / VVER-1000	MBP	48	20,880*	3.99-4.38	831,654
Tyanvan NPP (China) / VVER-1000	NCCP	48	20,692	3.92	522,917
KFKI Atomic Energy Research Institute(Hungary)/ VVR-M	NCCP	270	101	19.7	40,202
Kudankulam NPP (India) VVER-1000	NCCP	20	8,669	2.3	353,451
Kudankulam NPP (India) VVER-1000	NCCP	20	8,660	3.1	461,242
Kudankulam NPP (India) VVER-1000	NCCP	20	8,658	3.62	522,668
Kozloduy NPP (Bulgaria)VVER-1000	NCCP	44	19,163	4.2	1,239,546
Uzhnoukrainskaya (South Ukrainian) NPP/VVER-1000	MBP	48	20,881	3.59-4.38	756,487

Russian export of tablets (UO<sub>2</sub>) in the third quarter of 2009.

Supplier	Recipient	Weigh of U, kg	Enrichment, %
MBP	Department of atomic energy of India	28,975	0.71
MBP	Department of atomic energy of India	30,469	0.71
MBP	Department of atomic energy of India	29,443	1.6 - 2.66

<sup>2</sup> These data were calculated on the basis of known technical specifications or similar deliveries in the past.

<sup>3</sup> For information about prices please contact IBR Corp.

**Ukrainian export of natural uranium in the third quarter of 2009**

There is no export of natural uranium into this period.

## 5. Economy

### **“Atomenergoprom” will pay dividends for 9 months in the amount of 1.9 bln rubles**

“Atomenergoprom” will pay dividends for the nine months of 2009 amounting to 1.893 bln rubles at the rate of 3.505 rubles per share, the company reported.

The sole shareholder of “Atomenergoprom”, i.e. State Corporation “Rosatom” made the relevant decision on December 25.

As noted in the report, “Atomenergoprom” has made dividend payments to the amount of 393.207 mln rubles by December 31. The company plans to pay the remaining 1.5 bln rubles of dividends by February 5, 2010.

As reported, “Atomenergoprom” paid dividends by the results of year 2007 amounting to 139.4 mln rubles, for the nine months of 2008 – 960.6 mln rubles. “Atomenergoprom” net profit in 2008 totaled 27 bln rubles.

### **“Atomenergoproject” overpaid 600 mln rubles for procurement, the guilty are fired**

“Rosatom” estimates the damage resulting from several transactions made by engineering company JSC “Atomenergoproject” (AEP, Moscow) at 600 mln, a number of AEP senior managers were dismissed,” - said Alexander Loktev, director of the internal control and audit department - Chief Inspector of “Rosatom”.

The breach was revealed in the course of scheduled inspections of “Rosatom” enterprises in the past year.

“As to inspection of engineering companies specifically, we have found violations of procurement activities, e.g. at “Atomenergoproject” Moscow office, which stemmed, first of all, from the lack of control over the validity of the declared initial prices for the products and services in the company. This has led to conclusion of a number of overpriced contracts. The damage incurred by several transactions is estimated at 600 million rubles. By the results of the audit Deputy Director General in charge of financial and economic issues and Chairman of the Tender Committee were released from their positions,” - he said.

According to Loktev, the materials of the audits were forwarded to the Ministry of Internal Affairs for ascertaining “whether there was evidence of stakeholders collusion that may entail criminal responsibility”.

He noted that the audits permitted precluding a

damage amounting to over two billion rubles.

“Based on the results of the audits 103 orders by the State Corporation Director General were made aimed at elimination of the violations. Meanwhile, 14 managers and responsible executors of the enterprises were relieved of their duties,” - said the “Rosatom” Chief Inspector.

### **“Techsnabexport” anticipates conclusion of direct contracts to the amount of at least \$1 bln in 2010**

JSC “Techsnabexport” figures on conclusion of at least three direct contracts on uranium products supply, their total value approximately \$1 bln, in 2010, as reported by JSC “Atomenergoprom”.

In 2009, “Techsnabexport” concluded six direct contracts with US companies worth of approximately \$3 bln.

Specifically, long-term contracts were concluded with Constellation Energy Nuclear Group (for the period from 2015 to 2025) and Exelon Generation Company LLC (2014-2020).

At the end of 2009 the portfolio of export orders of the Russian uranium production company for a five-year period (exclusive of deliveries under the HEU-LEU Agreement) amounted to over \$8 bln, the entire stock of orders exceeding \$15 bln.

In 2010 “Techsnabexport” figures on increasing the stock of orders up to \$20 bln.

### **Federal Financial Markets Service registered a 130 bln rubles follow-on offering by SSC uranium enrichment enterprise**

The Federal Financial Markets Service (FFMS) registered an additional issue of equities of uranium enrichment enterprise JSC “Joint Company “Separation-Sublimate Complex” (SSC, Moscow), amounting to 130 bln rubles, placed through closed subscription, as reported by the office press service.

Thus, based on the decision on the additional issue of securities 130 bln shares, each worth of 1 ruble, are offered. The state registration number 1-01-13383-A-001D has been assigned to the additional issue.

State Corporation “Rosatom” in November decided to establish a fuel company on the basis of JSC “TVEL” (a 100 per cent subsidiary of JSC “Atomenergoprom”). To this end, SSC shares will be given to TVEL, besides, a 100%

shareholding of the "Russian Gas Centrifuges" will also be transferred to TVEL.

### **FFMS has registered a 300 bln rubles follow-on offering by "Rosenergoatom"**

The Federal Financial Markets Service (FFMS) has registered the 300 bln rubles additional issue of equities in JSC "Russian Concern for the Production of Electrical and Thermal Energy at Nuclear Power Plants ("Rosenergoatom" Concern), managing all of the Russian NPP, placed through closed subscription, as stated by the regulator press service.

As noted in the communication, "Rosenergoatom" intends to place 300 bln shares each worth of 1 ruble. State registration number 1-01-55417-E-002D has been assigned to the additional issue.

As explained in the press-service of "Atomenergoprom" owing a 100% shareholding of "Rosenergoatom", the additional emission is made in favor of "Atomenergoprom". It is expected that payment for the shares will be made partly in cash (governmental programs of funding new nuclear power plant projects and projects of upgrading the existing ones), partly by assets. Three joint-stock companies from the nuclear sector, including "Atomenergoremont", which is an enterprise engaged in repair of nuclear power plants, can be mentioned among the assets.

Referring to the extent of emission, "Atomenergoprom" emphasized that the 300 bln rubles is "a limiting value, a lower emission may be offered.

In 2008 the RF transferred a 100% shareholding of "Energatom" Concern to the balance of State Holding Company JSC "Atomenergoprom" (in November 2009 the company changed its name to "Rosenergoatom").

### **Rosatom changed the ownership structure of ARMZ**

Firstly ARMZ received the first tranche of payment in the amount of RUR16.9 billion in pursuance of the government order on July 30, 2009 and Rosatom became direct owner of 51.83% in ARMZ. On November 27, 2009 ARMZ received a tranche of payment of 33.1 billion roubles from SC Rosatom which has subsequently increased the State Corporation's interest in ARMZ Uranium Holding Co. to 76.097% from the previous 51.83%. The rest is still owned by JSC TVEL. The funds were disbursed in pursuance of Order 909-R dated July 11, 2009 of the government of the Russian Federation providing for a subsidy of 50 billion roubles from the federal budget to SC Rosatom

for the purpose of purchasing equity of ARMZ. On December 19, 2009 Prime Minister Putin in accordance with law "On federal budget in 2009 and in planned period 2010-11" signed another order (No. 1998-r) that put another great sum, this time 14.2 billion roubles of state money, into ARMZ by purchasing its shares. The head of SC Rosatom S. Kirienko commented that that sum had been given to ARMZ to allow the company to buy uranium assets abroad. He added that current low uranium price makes possible purchasing of valuable and relatively cheap assets abroad. A source in ARMZ mentioned a number of African countries (Namibia, Mozambique, Botswana, Tanzania) as the places where such assets might be bought he also added that "but nothing hinders us on other continents".

### **Atomenergoprom has become a direct owner of "Atomenergomash" controlling stock**

Nuclear holding JSC "Atomenergoprom" has become a direct owner of power engineering holding company JSC "Atomenergomash" controlling stock by acquiring the additional issue of its shares, as reported by "Atomenergoprom" press-service.

Earlier "Atomenergoprom" controlled "Atomenergomash" through its subsidiary JSC "TVEL".

According to the "Atomenergoprom" records, now it is the direct owner of 64% shareholding of "Atomenergomash".

Besides monetary funds, shares of 10 affiliated companies – JSC "Central Machine-Building Design Bureau" (TSKBM, 100%), JSC "Nizhnyaya Tura Mechanical Engineering Works "Venta" (74.84%), JSC "Sverdlovsk Research Institute of Chemical Machine Building" ("SverdNIIkhimmash, 49%), JSC "Protvino Pilot Plant "Progress" (49%), JSC Production Association "Instrument-Making Plant "Signal" (30%), JSC "Perlovsky Power Equipment Plant (25.5%), JSC "E4-Tsentroenergomontazh" (25.5%), JSC "Sevkavenergomontazh" (25.5%), JSC "Research, Design and Technological Institute of Electronic Controls and Devices" (NII "Controlpribor", 25.5%) and JSC "Kaluga Turbine Works" (25.1%), belonging to "Atomenergoprom", were transferred as a payment for the "Atomenergomash" additional issue.

"The transaction, which permitted consolidation of the core mechanical engineering assets on the basis of JSC "Atomenergomash", is made in the framework of the Russian Nuclear Power and Industry Complex restructuring to enhance its operation efficiency. This is another step in

the development of JSC "Atomenergomash" as a major machine-building holding company, which has the potential to become the largest in the country,"- are the words of Kirill Komarov "Atomenergoprom" executive director and Chairman of "Atomenergomash" Board of Directors, quoted by his press office.

According to Vladimir Kashchenko, "Atomenergomash" Director General, the company is targeted at further effective consolidation of assets for ensuring steady development of both "Atomenergomash" as such and the industry as a whole.

### **NCCP revenues from nuclear fuel production in the nine months amounted to 3.5 bln rubles**

Net assets value of JSC "Novosibirsk Chemical Concentrates Plant" in the 9 months of 2009 increased by 1.634 bln rubles compared to the same period in 2008 and amounted to 13.44 bln rubles. Revenues from the nuclear fuel production for NPP increased by 396.1 mln rubles and amounted to 3 bln 499.4 mln rubles. The figures are provided in NCCP quarterly report (3<sup>rd</sup> quarter of 2009), disclosed last week. The increase in proceeds from core business activities in the 9 months of 2009 amounted to 12.76% compared to the same period in 2008. This is due to increased production of nuclear fuel, the report said.

The share of the revenues from nuclear fuel production in total output of marketable products in 9 months of 2009 amounted to 72.08% versus 69.01% in the same period of the previous year. Besides nuclear fuel for power and research reactors, NCCP produces lithium and its compounds, chemicals for industrial and domestic applications, equipment, tools and implements. JSC "NCCP" total revenue by the results of the first 9 months of 2009 grew by 8% to 4.9 bln rubles, net profit – by 27% to 1.5 bln rubles.

It is predicted that up to year 2012 the market of NPP fuel supplies for the fuel fabricated by NCCP, will remain stable, i.e. 800-1000 FA per year (according to JSC "TVEL" data).

### **Kazatomprom in January-September increased its net profit by a factor of 1.5**

National Atomic Company of Kazakhstan, "Kazatomprom", in January-September 2009, received a net profit of \$29 bln 17.8 mln tenge versus 18 bln 714.4 mln tenge in a similar period of 2008, is shown in the company's consolidated financial statements published on November 6, 2009.

Thus, "Kazatomprom" net profit in January-September of 2009 increased by a factor of 1.5 compared to the same period of the previous year.

"Kazatomprom" total revenues in the 9 months of this year reached 122 bln tenge versus 90.5 bln tenge a year earlier (a 34.8% increase). The net cost of the sold products and rendered services amounted to 73 bln tenge (versus 55.3 bln tenge, a 32% increase).

The company's assets at the end of the reporting period increased to 378 bln 344.6 mln tenge from 341 bln 669.8 mln tenge at the beginning of the year, the equity capital - up to 272 bln 404.3 mln tenge from 231 bln tenge. The official exchange rate as of November 6 is 150.82 tenge / \$.

### **FFMS has registered 10 issues of "Atomenergoprom" bonds worth of 195 bln rubles**

The Federal Financial Markets Service (FFMS) has registered issues and offering prospectus of non-convertible interest-bearing documentary bonds payable to bearer from the first through the tenth series of JSC "Nuclear Power and Industrial Complex (Atomenergoprom) worth of 195 bln rubles, as stated in the agency report. In September, the State Corporation "Rosatom" announced its plans to make a bonded loan through its subsidiary "Atomenergoprom" worth of 195 bln rubles. None of the Russian companies had made public offering to such great amount before. "Rosatom" acts as a guarantor for all the bond issues.

It is planned that the issues will be placed by public subscription.

As stated in FSFR report, the bonds series from the first through fifth one include 30 million of bonds, each at thousand rubles par value. The sixth through ninth series consist of 10 million bonds, their face value one thousand rubles. The tenth series consists of 5 million bonds, each with one thousand rubles face value.

The term of the bonds circulation is up to five years. Within a year from the registration date the company intends to place the entire volume of the planned loan, and before the end of this year - the first tranche, amounting to 100 bln rubles.



### **Majilis of Kazakhstan approved the extension of the existing mineral extraction tax rates for 2010 – 2012**

Majilis (Lower House) of Kazakhstan's Parliament on Wednesday at the plenary session approved the draft law "On making amendments and supplements to some legislative acts on taxation" in the second, final, reading.

"The main purpose of the draft law consists in the extension to the years 2010-2012 of the rates of corporate income tax and tax on mineral extraction existing in 2009," – is stated in the opinion letter of the Majilis Committee on Finance and Budget.

The draft law also contains provisions aimed at improving tax administration and precluding different interpretations of the existing Tax Code regulations.

"A number of amendments were made in the tax on excess profits, tax on subsoil users, penalty fee payment period, according to special tax treatment, as well as editorial corrections, in the process of the draft law consideration," – it was said in conclusion.

Earlier, i.e. since January 1, 2009 the law "On Taxes and Other Compulsory Payments to the Budget" (Tax Code) came into force in Kazakhstan. The law enacting the new Tax Code provides for a gradual increase in severance tax rates along with reduced rates of corporate income tax (CIT). Thus, the CIT rate in the current year reduced from 30% to 20%, and phased reduction of CIT rate is planned in 2010 and 2011, to the rate of 17.5% and 15%, respectively.

Meanwhile, payment of royalties, which was earlier in force, being imposed on the extractive

industries, in the new Tax Code is replaced by a tax on mining. The severance tax calculation is made based on the value of the mined subsoil minerals, calculated at world prices. At the same time for subsoil users, developing low-profit, marginal fields, incentive rates are envisaged.

The tax rates on ore mining for ferrous, nonferrous and radioactive metals were defined for the years mentioned in the following amount: chrome ore (concentrate) – 16.2% and 16.8%, manganese and iron-manganese ore – 2.5% and 2.8%; iron ore (concentrate, pellets) – 2.8% and 3.2%, uranium (pregnant solution, mud pit method) - 22% and 23%.

### **NAEC Energoatom attracted a \$50 mln loan for the purchase of NPP fuel**

"Energoatom" Company attracted a loan of 50 mln dollars. It was reported by Yuri Nedashkovsky, the company director. "Energoatom" plans to use the credit for replenishing its floating assets. "Clearly, we'll spend it on fuel, as it is the top-priority need", - Nedashkovsky said.

"We announced the winner in raising the funds to the amount of \$17 mln and \$33 mln, i.e. Alfa-Bank Dutch structure (a subsidiary of the financial institution in the Netherlands - Amsterdam Trade Bank NV)," - he said.

At the same time the state-owned enterprise head assured that "Energoatom" had no debt for NPP fuel supplied by the Russian "TVEL" company.

"The money for two fuel loads have been paid to the Russian partner in advance, though there is a certain backlog in the schedule of payments", - was explained in the Ukrainian company.

## Abbreviations

<b>JSC</b>	Join Stock Company
<b>UEIP</b>	JSC "Urals Electrochemical Integrated Plant" (Russia, Ekaterinburg region, Novouralsk)
<b>AECC</b>	JSC "Angarsk Electrolyzing Chemical Complex" (Russia, Irkutsk region, Angarsk)
<b>ECP</b>	JSC "Electrochemical Plant" (Russia, Krasnoyarsk region, Zelenogorsk)
<b>ChMP</b>	JSC "Chepetsk Mechanical Plant" (Russia, Udmurtia, Glazov)
<b>MBP or MSZ</b>	JSC "Machine Building Plant" (Russia, Elektrostal, Moscow region)
<b>NCCP</b>	JSC "Novosibirsk Chemical Concentrates Plant" (Russia, Novosibirsk)
<b>PM&amp;CC</b>	JSC Priargunsky Mining and Chemical Combine (Russia, Chita region, Krasnokamensk)
<b>UMP</b>	JSC "Ulba Metallurgical Plant" (Kazakhstan, East Kazakhstan region, Ust-Kamenogorsk)
<b>SCC</b>	JSC "Siberian Chemical Combine" (Russia, Tomsk region, Seversk)
<b>VM&amp;PC</b>	Vostochny Mining & Processing Combine (Ukraine, Zhovty Vodi (Zheltye Vody))
<b>NM&amp;SC</b>	Navoi Mining & Smelting Combine (Uzbekistan, Navoi)

## Glossary

**Rosatom State Nuclear Energy Corporation** (SNEC Rosatom) – the state corporation for management of nuclear energy utilization in Russia. Rosatom unifies enterprises involved in the areas of nuclear-weapon and nuclear-energy complexes, fundamental science and radiation security. SNEC Rosatom was established on 1 December 2007 by Federal Law №317-F3 (Dec 1 2007) “On “Rosatom” State Nuclear Energy Corporation,” is full assignee Federal Agency for Atomic Energy (FAAE).

**Atomenergoprom OJSC** is a state holding comprising companies of the civil sector of the nuclear industry. 31 OJSCs and 20 FSUEs reorganized into JSCs have been incorporated into the holding so far, particularly, 100% of TVEL OJSC, Techsnabexport OJSC and Atomredmetzoloto OJSC as well as 25% of Kaluga Turbine Plant. The authorized capital of the holding totals 3.400bln RUR and consists of 3,400,000 ordinary shares 1,000 RUR each. 100% of its shares are owned by the state.

Among the key priorities of Atomenergoprom, its subsidiaries and dependent JSCs is to design, site, construct, operate, maintain, modernize, repair and decommission nuclear power facilities, sources of radiation and facilities for storing nuclear materials and radioactive matters; to carry out research in the field of peaceful use of nuclear energy; to introduce innovative technologies; to build, operate and maintain NPPs abroad; to produce electricity and heat at NPPs; to prospect and mine mineral resources containing nuclear materials and radioactive matters; to enrich uranium and other nuclear materials; to design, produce and sell fuel elements; to export and import products and services related to the use of nuclear energy; to train specialists.

**Atomredmetzoloto OJSC (Uranium Holding ARMZ)** manages all Russian uranium mining assets and is carrying out a number of projects in Kazakhstan. The total reserves of the companies set up by the holding in Russia and Kazakhstan makes up 583,500 tons. 100% of shares of Atomredmetzoloto belong to Atomenergoprom OJSC, which is part of Rosatom State Nuclear Energy Corporation.

**TVEL Corporation** is one of the world’s leading producers of nuclear fuel. 74 industrial (17% of the world market) and 30 research reactors in 14 countries work on the fuel produced by TVEL. The corporation comprises Mashinostoitelny Zavod (Elemash) (Elektrostal, Moscow region), Chepetsk Mechanical Plant

(Glazov, Udmurtia), Novosibirsk Chemical Concentrate Plant (Novosibirsk), Chemical Mining Combine (Krasnoyarsk).

**National Atomic Electro-generating Company Energoatom** (NAEC Energoatom) was established in accordance with decree of the Ukrainian government No 1268 of 17 October 1996 and incorporated all nuclear power plants in Ukraine. In accordance with decree No 1854 of 29 December 2006 NAEC Energoatom was included in the list of enterprises that was to be incorporated in newly established SC Ukratomprom. The President of NAEC Energoatom is, at the same time, the Head of SC Ukratomprom

**State Concern Ukratomprom (SC Ukratomprom)** – Ukrainian state owned company incorporating enterprises of the nuclear fuel cycle of Ukraine (uranium mining, zirconium production, nuclear energy generation at NPPs, machine building, applied science and R&D organizations). SC Ukratomprom was established by decree of the Ukrainian government No 1854 of 29 December 2006 “On improvements in nuclear industry complex management”. Ukratomprom subordinated to the Ministry of Fuel and Energy.

**National Atomic Company Kazatomprom (NAC Kazatomprom)** – Kazakh state owned holding company incorporating Kazakh enterprises of the nuclear fuel cycle (uranium mining, fuel pellets production, decommissioning, R&D in nuclear technology). Kazatomprom was established by order of the President of Kazakhstan in 1997 from the Kazakh State Corporation of Enterprises of Nuclear Power and Industry (KATEP).

**Joint Venture UkrTVS** was established and registered in the late 2001 in Ukraine. Its founders – in equal shares – are JSC “TVEL” (Russia), NAC “Kazatomprom” (Kazakhstan), and Ukrainian State Property Fund. The JV’s sphere of activity is fabrication of nuclear fuel for VVER-1000 reactors operating at Ukrainian nuclear power plants.

**Navoi Mining & Smelting Combine (NM&SC)** is a division of the Uzbek State Concern “Kyzylkumredmetzoloto” and its base enterprise. The Director General of NM&SC is at the same time the chairman of the State Concern “Kyzylkumredmetzoloto”. Besides uranium mining & processing, NM&SC mines gold and rare-earth metals. The extremely large enterprise includes several other productions not related to mining activities.

## **Supplement 1 Plan of measures by State Corporation “Rosatom” concerning Ukraine**

### **Plan of measures by State Corporation “Rosatom” concerning Ukraine to be put in action after July 15, 2009, if Ukraine fails to sign the long-term contract on fuel supply after year 2010**

Politicization of the issue of Ukrainian NPP provision with nuclear fuel and US interference into internal affairs of Ukraine in all probability will result in another failure as regards the date of signing the long-term contract on nuclear fuel supply for Ukrainian power plants after year 2010.

Transfer of the issue of nuclear fuel supply from the level of economic entity to the level of Ukraine National Security and Defense Council, Presidential Administration and Cabinet Council prevented final concurrence of the long-term contract commercial terms and its official signing.

President of Ukraine V.A. Yushchenko continuously insists on diversification of nuclear fuel supplies and demands that measures are taken aimed at breaking up the monopoly of the Russian suppliers on the Ukrainian market. It has come to the point, where the Russian partner was even accused of attempts to capture the Ukrainian uranium enrichment market, despite the fact that Ukrainian Premier Yu.V. Timoshenko affixed her signature to the Protocol of the fourth meeting of Committee for economic cooperation issues within the Russian-Ukrainian Intergovernmental Commission.

Top management of SE National Atomic Energy Generating Company (SE NAEC) “Energoatom” privately warns that the long-term contract will not be signed before this July and no directives for signing the document will be given before completion of the electioneering campaign in Ukraine on January 17, 2010, while the war of words after the election may entail its further updating. It is unlikely that the efforts aimed at signing the contract will yield results before May-June of the next year.

In spite of the situation in Ukraine, State Corporation “Rosatom” exerted utmost effort for transferring the negotiations into economic domain and for the document concurrence on time. After April 29, this year, six meetings of the task group were arranged on the initiative of the Russian partners. In May a plan of State Corporation “Rosatom” actions aimed at concluding the long-term contract within the specified period was developed. Proposals for settlement of all the discordant issues based on trade-off approaches were advanced. Earnestness of the intentions to take part in the fuel fabrication plant construction project in Ukraine were made clear by developing the project investments substantiation, as well as by offer to arrange a joint Russian-Ukrainian venture in Ukraine to be engaged in compliance with commitments of the parties. State Corporation “Rosatom” has concurred the Ukrainian formulation of the subject of the long-term contract, which, in the opinion of the Ukrainian partner, was the main obstacle to final concurrence of the contract within the period specified by Premiers of Russia and Ukraine.

In the framework of many rounds of negotiations the Russian partner proposed different options of tradeoff decisions for final concurrence of the long-term contract commercial terms. Specifically, speeded up construction of the nuclear fuel production plant in Ukraine was guaranteed on condition of long-term purchase of the Russian fuel assemblies for all fifteen operating Ukrainian power units. JSC “TVEL” did not oppose the localization of fuel powder and pellets production in Ukraine before 2020, if the US fuel supplies are replaced with fuel assemblies fabricated by the plant. The Russian partner was ready to support compliance with commitments pertinent to the plant construction in Ukraine, providing the Russian Federation government guarantees in exchange for Ukrainian commitments to make long-term purchases of the Russian uranium enrichment services.

Instead of addressing the tradeoff proposals, the Ukrainian partner continued enhancing the requirements in reference to JSC “TVEL” commitments within the long-term contract, sometimes upsetting the agreement reached by Premiers of Russian and Ukraine. Having concurred the Ukrainian formulation of the subject of the contract, SE NAEC “Energoatom” still refuses to complete the negotiating process and to sign the contract on time.

Thereupon, the actions to be taken by State Corporation “Rosatom” concerning Ukraine after July 15, 2009 should be aimed at:

1. Ousting of Westinghouse Co. from Ukraine and opposing its return on the VVER fuel market.
2. Restriction of Ukrainian capabilities to provide a nuclear fuel surplus at the expense of supplies in 2010.
3. Imposing the choice of the Russian technologies for nuclear fuel production projects in Ukraine.
4. Signing of a long-term contract up to year 2020 permitting the Russian supplier to secure the Ukrainian nuclear fuel market in the scope of fixed commitments for at least 12 power units.
5. Arrangement of conditions ruling out direct purchase of SWU via JSC "Techsnabexport", i.e. contracting SWU solely within complete supplies of fuel through JSC "TVEL", or spot purchase of SWU within enriched uranium products (EUP) via JSC "IUEC", providing supplies via JSC "Techsnabexport" solely in extreme cases.

The tasks can be addressed promptly and most effectively by envisaging the following:

1. A complex of measures involving political resources of Russia.
2. JSC "TVEL" withdrawal from the negotiations until the issues pertinent to signing the long-term contract are transferred to commercial context and additional pressure put on Ukraine via pro-active cooperation with other foreign partners and global agencies on the nuclear fuel global market.
3. Exerting pressure on the Ukrainian partner via commercial tools, including the issue of Ukrainian-origin natural uranium use for FA fabrication.
4. Coordinated policies of JSC "Atomenergoprom" subsidiaries and subordinate companies on issues of complete fuel and fuel components supplies to Ukraine.
5. Publications and their replication in Ukrainian, Russian and foreign mass media of comments made by experts and politicians about the reasons for failure of the specified date of signing the long-term contract, as well as the document pertinent to setup a nuclear fuel production in Ukraine.

During the Plan implementation special attention should be paid to the following:

The long-term contract and counteraction to construction of a Westinghouse technology-base plant in Ukraine, irrespective of strategy and tactics of further actions, shall remain top-priority tasks for the Russian nuclear sector in Ukraine. The extent of State Corporation "Rosatom" future presence in the Ukrainian and European markets will depend largely on the actions. Otherwise, the situation will permit US Westinghouse to gain strength in Ukraine and will also provide a good springboard for return to Europe, entailing essential loss for the Russian nuclear sector.

Year 2015 is a critical point for State Corporation "Rosatom", when, according to some assumptions, Ukraine will have to make the ultimate decision about further cooperation with the US Company. It is very important to surmount the year staying within the long-term cooperation. The contract period restriction by year 2015 will promote comfort conditions for Westinghouse expansion to the VVER market. It should also be remembered that approximately at the same time attainment of design capacity or, at least startup of the first phases) of new separation enterprises is contemplated in Europe and USA. Surplus of production capacities, supplies in excess of the demand and the absence of a long-term contract on complete supplies may result in diversification of long-term supplies of uranium isotope enrichment services to Ukraine.

For achieving the objectives and for coping with the tasks the following measures are appropriate:

### **Section 1. Measures involving the Russian political resources**

- 1.1. A letter by State Corporation "Rosatom" addressed to the Government of the Russian Federation with a summary of a draft letter by Premier of the Russian Federation V.V. Putin to Premier of Ukraine Yu.V. Timoshenko stating the reasons for the new break of the date of signing the long-term contract, specifically:
  - breach of obligations by the Ukrainian partner stated in the Protocol of the fourth meeting of Committee for economic cooperation issues within the Russian-Ukrainian intergovernmental commission;

- Ukrainian partner refusal to sign the long-term contract even after State Corporation “Rosatom” has concurred the Ukrainian formulation of the subject of contract;
- Unilateral decision on rising the status of document on a plant construction project in Ukraine, i.e. Memorandum of Understanding, to International Interdepartmental Agreement;
- No plant documents concurred by Ukrainian ministries and departments available to the Russian partner;
- Requirement to make the plant operational in 2013 instead of the time required for the fuel production for initial loading of the Khmel'nitskaya NPP, units 3 and 4;
- Politicization of the issue of fuel provision for the Ukrainian NPP.

Besides, Yu.V. Timoshenko should be informed that the entire responsibility for failure to meet the specified date of signing the long-term contract rests with the Ukrainian partner. The Ukrainian partner evasion may result in discontinuance of fuel supplies in 2011, as well as postponement of fuel production plant construction projects in Ukraine. Moreover, Premier of Ukraine Yu.V. Timoshenko will be informed about the right of the Russian Federation to activate the plant negotiating process with East European countries and that the Russian partner will withdraw from the negotiations until the decision is made by the Ukrainian partners on further steps towards interaction.

## **Section 2. Measures relating to JSC “TVEL” withdrawal from the negotiating process**

2.1. After informing the Ukrainian partner about JSC “TVEL” withdrawal from negotiations until the issue of Ukrainian NPP provision with nuclear fuel is transferred to commercial sphere, attention should be focused on negotiations with the Czech partners pertinent to arrangement of a “pilot” regional plant in Czechia, as well as on contacts with other foreign agents on the global nuclear fuel market for creating additional zones of pressure on Ukraine.

**Ukraine runs the following risks:** nonreceipt of fuel in 2011, refusal to involve Ukrainian uranium into FA fabrication until the long-term contract is signed, postponement of commissioning the nuclear fuel production process.

**State Corporation “Rosatom”, JSC “Atomenergoprom” and JSC “TVEL” risks:** no confirmed order for uranium purchase, enrichment and fabrication services, noncompliance with key efficiency indices in reference to stock of export orders for a five-year period, probability of Westinghouse expansion in Ukraine for political reasons, purchase of non-Russian uranium and SWU for at least three power units.

### **Options for creating additional zones of pressure on Ukraine during the break in negotiations**

2.1.1 Continued negotiations with the Czech partners aimed at construction of a nuclear fuel production process in Czechia based on the Russian technologies. Clarification of the wish and potentialities of the Czech partners in terms of arrangement of a FA assembly line on their territory based on the Russian technologies. Discussion of possibility of exerting pressure on Ukraine by the European Union aimed at its acceptance of Czech fabrication as an alternative nuclear fuel fabricator and supplier. Working through the issue of practicability of EU forcing Ukraine towards arranging compulsory tenders on nuclear fuel purchase.

The implementation period is July-August, 2009.

2.1.2 On resuming the negotiating process with Ukraine concerning the long-term contract, the Russian partner, after concurrence with the Czech partner, will inform Ukraine that the lead-time in the negotiations on the part of Ukraine resulted in ultimate choice of Czechia as a site for arranging a fuel fabrication pilot plant based on the Russian technologies. It will be suggested that Ukraine accept the plant as an alternative fuel supplier for Ukrainian NPP. The issue of fuel purchase by Ukraine on a tender basis is to be discussed.

2.1.3 Negotiations with Toshiba/Westinghouse companies on the issue of practicability of cooperation in fuel fabrication shall be conducted. The cooperation between JSC "Atomenergoprom" and Toshiba Co. shall be used for arranging a store of enriched uranium products (EUP) for onset of cooperation with Westinghouse Co. The factor of guaranteed provision of Toshiba/Westinghouse companies with the Russian-origin EUP in exchange for the US Co. withdrawal from the nuclear fuel market of Ukraine shall be made use of.

The implementation period is July-September, 2009.

2.1.4 A meeting with General Electric Co. should be arranged for considering the issue of cooperation in joint business of square-lattice FA advance to the US market. The contracts shall be used as a threat for Westinghouse positions in the USA.

The implementation period is July-August, 2009.

2.1.5 Conduct of negotiations with Siemens Co. and the use of strategic alliance for entering the US market for exerting pressure on Westinghouse shall be contemplated.

The implementation period is July-August, 2009.

2.1.6 Taking advantage of the opportunities offered by cooperation with USEC (USA) company in supply of the Russian uranium enrichment services for exerting pressure on Westinghouse Consideration should be considered.

### **Section 3. Measures aimed at exerting pressure on Ukraine via commercial tools**

3.1 On Ukraine returning to commercial mainstream and on its resuming the negotiating process on the long-term contract and the plant, the discussion of commercial terms of fuel supplies without rebate for components should be continued. The issue of giving a discount for the product at subsequent stages of the negotiating process should be additionally concurred with JSC "TVEL" and JSC "Atomenergoprom".

3.2 After the negotiations are resumed and, providing Ukraine still insists on the requirement to restrict the guaranteed order for the Russian nuclear fuel by year 2015 in the context of the long-term contract validity up to the end of 2020, the pricing for FA supplies should be fixed solely for the period of 2011-2015, to be followed by negotiating process, depending on the volume of FA purchase in future.

3.3 On receiving a final application from SE NAEC "Energoatom" in terms of the amount and range of fuel supplies in 2010, contractual documents shall be prepared with utmost rigid terms for Ukraine, i.e. a 100% prepayment for fuel 150 days before its shipping, refusal to use Ukrainian uranium for FA fabrication in 2010. It is unlikely that in 2010 early prepayment for fuel will permit Ukraine to maintain the Russian FA order size at a level of 14 refueling operations, which will prevent Ukraine from accumulating potential fuel reserves to be used in 2011. This course of events will stimulate speeding up of the long-term contract conclusion.

3.4 Russia should refuse to buy 200 tons of Ukrainian uranium concentrate in 2009 (taking advantage of the situation of systematic nonpayments for fuel in the current year).

The implementation period is October-November, 2009.

### **Section 4. Measures envisaged by JSC "Atomenergoprom" coordinated policies in terms of complete fuel and fuel components supplies to Ukraine**

4.1. A letter is to be sent by JSC "Techsnabexport" to the address of SE NAEC "Energoatom" requesting information about the date and basic terms of signing the long-term contract between JSC "TVEL" and SE NAEC "Energoatom" for complete fuel supplies to Ukraine. The letter should contain arguments for refraining from negotiating process in view of no certainty as to the scope of the Russian enrichment capacities reservation for executing the JSC "TVEL" order within complete fuel supplies.

The implementation period is July, 2009.

4.2. Ukrainian partner should be informed about JSC "IUEC" business model:

- JSC "IUEC" is a non-profit organization rendering services in uranium enrichment based on long-term contracts;

- JSC "IUEC" is a guarantor of providing SWU, though it has no own separation process capacities, but it has certain potentialities within the quotas for execution of annual spot orders.

The implementation period is August, 2009.

- 4.3. After Ukraine joins JSC "IUEC", SE NAEC "Energoatom" will be provided with JSC "IUEC" services in the amount not exceeding the SWU demand of three Ukrainian power units, FA will be fabricated by a non-Russian supplier. Utmost stringent terms for Ukraine in SWU purchase within EUP of JSC "IUEC", i.e. an early application for services to be rendered, world prices for uranium enrichment services, should be devised. Direct supply of SWU within EUP to Ukraine should be made solely through JSC "IUEC" owing to political decision on Ukraine joining the organization. Direct supplies of SWU/EUP by JSC "Techsnabexport" to Ukraine shall be considered as the worst option.
- 4.4. In case of Ukraine non-alignment in JSC "IUEC" or refusal to purchase SWU from the organization, the issue should be specially discussed at a level of JSC "Atomenergoprom", considering the potentialities, terms and periods of contracting and direct supplies of the Russian uranium enrichment services for three power units of Ukrainian NPP, FA for which will be supplied by a non-Russian fabricator via JSC "Techsnabexport".



**Section 5. Measures aimed at PR support of attaining the objectives set and coping with the tasks specified**

- 5.1 Elucidation of the information about the efforts of the Russian partner aimed at signing the long-term contract and plant documents within the specified period, as well as the reasons for upsetting the arrangements made by Premiers of both countries and its replication by Ukrainian, Russian and foreign mass media, should be initiated. Coverage should be provided for the Ukrainian partner risks due to the issue politicization, as well as for all further actions by Russia aimed at concentrating the international activities on other trends in interaction.

President of JSC "TVEL"

Yu.A. Olenin

Deputy Director,  
JSC "Atomenergoprom"

N.I.Korogodin

## Supplement 2 Integrated Fuel Company

The key Russian nuclear fuel cycle enterprises, i.e. enrichment plants, manufacturers of centrifuges for uranium enrichment, research and design centers, up to the end of 2010 will be consolidated within integrated "Fuel Company" to be set up on JSC "TVEL" basis. The relevant order was signed late in October, whereas early in November Atomenergoprom approved a plan of measures aimed at integration. Thus, the production chain of nuclear fuel fabrication, will be basically closed within a single control loop. The only exception is Atomredmetzoloto, engaged in uranium mining, that triggers the cycle. ARMZ is formed as a full-fledged mining holding company and will remain a self-contained structure under Rosatom control.

There is a list of the enterprises transferred to the "Fuel Company":

Joint Company Separation-Sublimate Complex (JC SSC):

- AECC - Angarsk Electrolyzing Chemical Plant
- ECP – Electrochemical Plant
- UECC - Ural Electrochemical Combine
- SCC - Siberian Chemical Combine

EC RGC

- Vladimir Production Association "Tochmash"
- Kovrov Mechanical Plant
- EDB-Nizhny Novgorod
- CJSC "Tsentrotech-SPb"
- "Novouralsk Research and Design Center" Ltd.
- "Novouralsk Instrument-Making Plant" Ltd.
- "Ural Gas Centrifuge Plant" Ltd.

The main objective of the reforms consists in the optimal alignment of the property management system through setting up divisions, formed based on product line or on markets. Thus, the key factor dictating the configuration of consolidation is synergic effect that can be achieved at the expense of external and internal factors.

Hence, establishment of the "Fuel Company" will permit the companies to compete more effectively outside the country, on the world market, besides opening new opportunities for reducing costs, managerial inclusive, as well as to improve production internal efficiency. In the meantime, the enrichment plants are collected under the Joint Company Separation-Sublimate Complex" (JC SSC), and the companies engaged in the

manufacture of centrifuges become a part of the Engineering Center "Russian Gas Centrifuge" (EC RGC). These structures, in their turn, within the next year will be integrated into the "Fuel Company". Atomenergoprom will transfer their shares, and after that SSC and RGC will be abolished, and the "Fuel Company" will become the direct owner of the enterprises. Reforms at Atomenergoprom itself will take place in parallel, its duplicating functions will be gradually delegated to Rosatom. It will permit cutting down the administration costs.

As a result, a two-tier system will be constructed in the "Fuel Company":

- Upper level - "Fuel Company" as such, accountable to Rosatom for achieving specific business goals
- Lower level - production floors.

This model is superior to today's one, where there are at least two administrative staffs from Rosatom to a specific site. The main task set for the "Fuel Company" administration is to become an efficient supplier of the Russian nuclear sector products to the world market at the expense of domestic production optimization. For several years TVEL has been effectively undertaking the activities at its enterprises, that proved quite successful. Rosatom employees are convinced that the acquired and proven techniques and finished off optimization system will not imply the work "from scratch". It is planned that TVEL by the end of this year will elaborate a draft concept of the "Fuel Company" development and submit it to the State Corporation for approval.

Russian supplies of SWU are an important element of the world market. The trust of clients is the main asset in this market. From this viewpoint, retention of successful brands TVEL and TENEX is the key aspect.

According to Kirill Komarov, Atomenergoprom Executive Director, they do not plan to change the pattern of contracting export of enriched uranium product and enrichment services: Techsnabexport, being the national agent of the Russian Federation for implementing bilateral agreements for SWU supply, continues to perform and enter into new contracts. Moreover, by now two transnational companies, i.e. "International Uranium Enrichment Center" (IUEC) and CJSC "Uranium Enrichment Center" (UEC),

have been set up on AECC basis. IUEC mission is to guarantee access to uranium enrichment for civil applications to any country, complying with IAEA requirements, which is a member of the Nuclear Weapons Non Proliferation Treaty (NPT). Russia and Kazakhstan are the center founders, Ukraine and Armenia will soon joined it too. The concept of CJSC "UEC" is the subject of bilateral cooperation between Russia and Kazakhstan. In the case of IUEC, Rosatom is the major shareholder, while the UEC owners are Techsnabexport and Kazatomprom, which will still be engaged in the company development in future, despite setting up the "Fuel Company".

So, in the context of a highly competitive global market, it is very important for the Russian nuclear industry to provide potential clients with all possible lines of products in the best way. Today's share of TVEL in the world is approximately 17%. Strategic objective consists in increasing the presence of the RF in the fuel fabrication global market at least to 25%. In the sphere of uranium enrichment services Russia is currently the world leader, being responsible for a market share of more than 40%.

**Setup of integrated "Fuel Company" commented by Kirill Komarov, CEO, JSC "Atomenergoprom"**

*In November, it was decided to establish a "Fuel Company" on the basis of JSC "TVEL", which was to consolidate enrichment enterprises and centrifuge manufacturers. Would you tell us the reasons for this decision?*

As you know, Atomenergoprom was set up to consolidate the nuclear sector civil assets. Having become owners of shareholding in more than 70 different businesses, we raised a question of providing an effective system of the property management. This is to say, the decision on setting up the "Fuel Company" is not exclusive, it is just one of many decisions that are made to create full-fledged divisions, formed based on the product and market principles.

It is important within the divisions to collect exactly the assets, which yield synergistic effect when integrated. These may include external factors, when the companies can better sell their products, compete more effectively on the global market through consolidation, or domestic factors - when we get the chance to cut costs, managerial inclusive, improve internal efficiency, eliminate

duplication by integrating the companies. Setup of the "Fuel Company" pursues exactly these goals, both external and internal ones.

The "Fuel Company" will be able to meet the demands and wishes of foreign customers in a fuller extent. The Company will be able to offer modern, technologically efficient NFC products.

Simultaneously, the "Fuel Company" will improve the starting positions for entering into global alliances with foreign agents and will set a priority for the development of scientific component aimed at innovative development of the fuel fabrication capacities.

*Why TVEL was defined as the basic corporate structure for setting up this company?*

Why do we combine the nuclear fuel cycle products within a single company in general? For us it is important to offer the entire line of possible products that may be of interest to the customers on the global market. Of course, ideally, our goal is to sell products of the highest processing stages, which is nuclear fuel, in this case. But if we have no such opportunity, it is necessary that the consumer could choose what he needs specifically from the entire line of products: enriched uranium, conversion services, enrichment services and so on. After all, buyers have different logic: someone wants to buy the final product, someone is interested in diversification or prefers to have different vendors for different process stages.

TVEL also demonstrates significant progress in the foreign market. The company has won all the open tenders in various countries, once it submitted a bid.

I think the TVEL management team is able to cope with the assigned tasks. They have approved and tested techniques along with a finished off optimization system.

*Does it mean that the TVEL optimization program will be expanded to other enterprises within the "Fuel Company"?*

Decisions are never the same, there are specific conditions and features everywhere. Each Rosatom plant is unique, each has its own background. Sometimes the plants are located in closed cities (closed autonomous territories), and it implies their own set of problems and additional social responsibilities. Sometimes a company is located in a large town, and then there are its own specific features.

So, again, there will be no typical solutions.

*When, will the targeted structure of the "Fuel Company" be complete, according to your estimates?*

Within the next year we will transfer the shares of "Separation-Sublimate Complex" and "Russian Gas Centrifuges" as a contribution to the TVEL authorized capital stock. This is the same set of assets, which is already being transferred to the TVEL management today.

*Given the setup of the "Fuel Company", a long chain of management is formed over the lower level companies (combines, centrifuge manufacturers).*

*Does this situation somehow affect the enterprises activities, since it is obvious that, at least, now they should have a huge document turnover?*

What we aim at is the structure simplification.

As a result of all the transformations we shall have no duplication of management functions. Thereupon, we will come eventually to the classical structure of management. The State Corporation, dictating the most important strategic approaches and trends in development will be at the upper level. The "Fuel Company" as an operating company

responsible for achieving specific business objectives will be at the second level.

And the production floors will constitute the lower level. We believe that this model will be quite convenient and will entail no problems.

*Is it possible, in your opinion, that in future the enterprises that are included in the "Fuel Company" will entirely merge into TVEL?*

So far, we do not contemplate it in our plans, and I honestly do not see the need to move to a single share. Today TVEL is not the sole shareholder in all of its enterprises, but the fact poses no problems, since the company exerts its control over its assets everywhere.

*Is overseas expansion one of the tasks set for the "Fuel Company"?*

We can go to many countries around the world with our technologies and we can be engaged there in production process localization, in whole or in part. Geographical expansion of the "Fuel Company" is a topic we are considering with enthusiasm.

### Supplement 3 Barter transactions improvement

#### ***State Duma received a bill envisaging improvement of the state regulation of foreign trade barter transactions***

For many years State Corporation "Rosatom" has been supplying enriched uranium to the world market (currently the Russian share of the global market is about 40%). This activity is possible on condition that the Russian currently effective legislation will promote assurance of the Russian exporters interests and not vice versa, creation of unnecessary obstacles.

But the reality suggests that some regulations of the Russian legislation place unreasonable restrictions on the activities of the Russian foreign trade organizations. A similar situation occurred with the approval of Federal Law No. 164-FZ "On Fundamentals of State Regulation of Foreign Trade Activities". In conformity with the law, "Rosatom" organizations, selling enriched uranium, must provide for import to Russia of foreign uranium source material transferred to it by foreign contractors abroad, as partial payment for the Russian enriched uranium, and confirm the fact of uranium import as such.

As this takes place, it seems that the Russian exporters have the opportunity to conduct such a transaction without importing the foreign source materials, if they receive the relevant permission from the RF Government. However, since 2004 and up to the present time no one could obtain the authorization, as the relevant procedure for their granting was not defined.

This created significant problems for the Russian nuclear sector, as increasing number of foreign customers offer to pay money solely for the enrichment service as such, and to transfer the equivalent amount of natural uranium to the Russian partner at foreign conversion enterprises without its physical import to the territory of Russia as a pay for the initial feedstock. However, despite the wishes of foreign customers, "Techsnabexport" (dealing with enriched uranium supplies for over 46 years) can not enter into contracts with them on the terms mentioned, that results in essential reduction of the Russian nuclear sector competitiveness in the global uranium market.

As a result of the work performed it became clear that the problem will not be resolved at the ministerial level and no one will approve the issuance of the permits. There remained

only one, the most complicated way, i.e. to make amendments into Federal Law No. 164-FZ and to eliminate the need for obtaining the permits. During the parliamentary hearings in the State Duma Committee Andrey Shlyakhto, Director of "Techsnabexport" Legal Department, offered a bill abolishing the need for obtaining the permission to the deputies, and substantiated the necessity of its approval.

Besides, the bill envisages making amendments in the RF Tax Code, which will permit "Rosatom" companies ("Techsnabexport", in particular) to confirm the zero rate and to refund the export VAT on the cost of enriched uranium for such transactions.

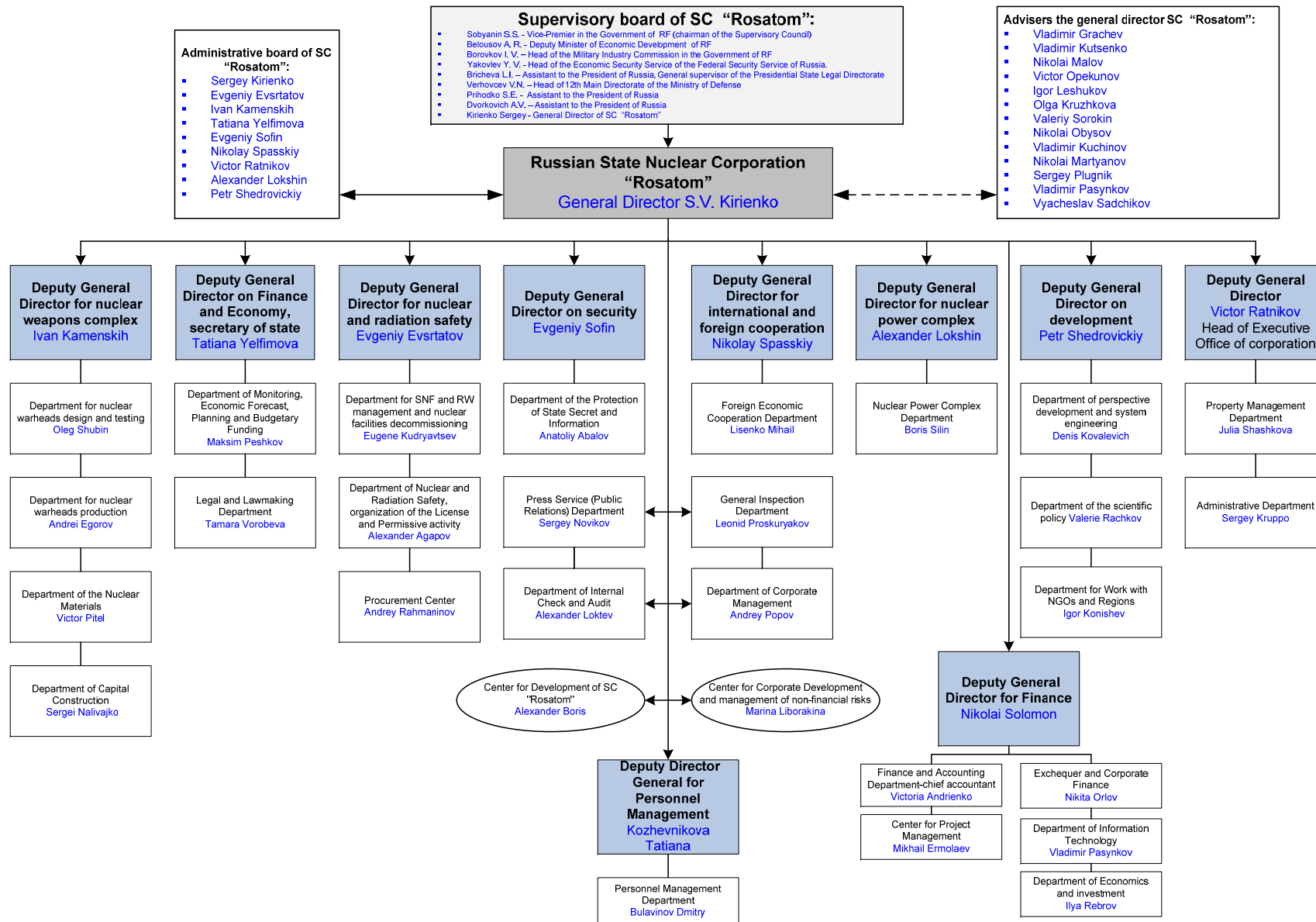
Vice-Chairman of the State Duma Valery Yazev and First Deputy Chairman of the State Duma Committee on Industry, Valery Draganov were not indifferent to the problems of the Russian nuclear sector and submitted the document for concurrence to the RF Government, as the bill envisages amending the Tax Code.

According to Elena Artemova, head of "Techsnabexport" Office for corporate legal work, "the struggle for justice is not easy – it proved very difficult to concur the bill in the Government. There were many talks and meetings at the Federal Customs Service, Ministry of Finance, Ministry of Industry and Trade, Ministry of Economic Development and the Government establishment, the appropriate explanations and justifications were prepared, while there were cases when negative opinions on the bill were given and the relevant work was required, so as the departments changed their position and ultimately supported the bill." The positive conclusion of the Government became possible only after the bill was supported by State Corporation "Rosatom". A letter of support to the bill from Alexander Lokshin, Deputy Director General of State Corporation "Rosatom", was sent to the name of Igor Shuvalov, First Deputy Prime Minister of Russia which played the decisive role in reconciling the document by the Government. "This bill makes amendments in two fundamental legal acts regulating foreign trade. Adoption of the bill is vitally important for the nuclear sector enterprises. We will have the opportunity to make foreign trade barter transactions, which are generally accepted in the global uranium market (the requirements of customers from Japan, Brazil

and other countries). What is particularly important, the law will give the exporter the right to recover VAT on such transactions. Meanwhile, the amount of VAT refunds solely in "Techsnabexport" can reach about \$60 mln a year", - says Elena Artemova. Hopefully, the law will be adopted at the current session of the State Duma, which undoubtedly will be a great victory for the Russian nuclear sector. The adoption of the bill is an example of successful coping with the problems faced by the industry in nuclear materials foreign trade and it will be a contribution to the work aimed at maintaining and increase in the share of the Russian uranium products on the world market

(the breakthrough into the U.S. market, the Russian-Japanese Intergovernmental Agreement, an intergovernmental agreement on separation plant construction in the People's Republic of China and the relevant enriched uranium product contract up to year 2020).

## Supplement 4 Structure Russian State Nuclear Corporation Rosatom



## Supplement 5 Preliminary results of JSC "Techsnabexport" activities in 2009

The HEU-LEU Agreement provides for supply to the USA of low-enriched uranium (LEU), produced by the State Corporation "Rosatom" enterprises from weapons-grade highly enriched uranium (HEU) to be used as fuel at US nuclear power plants (NPP). JSC "Techsnabexport" (a 100% subsidiary of JSC "Atomenergoprom") and United States Enrichment Corporation (USEC) are executive agents of the parties under the Agreement. Since shipping the first batch of LEU on May 31, 1995 about 11 049 tons of the material produced by reprocessing 382 tons of HEU, i.e. 76% of its total amount - 500 tons - contracted by the HEU-LEU Agreement, were supplied to the USA. Thus, the "Megatons to Megawatts" program entered its final stage. The amount of foreign exchange earnings of Russia for the delivered material exceeds \$8.8 bln. In addition, natural uranium, so-called natural component of LEU, its estimated value about \$2.8 bln, returned to the territory of Russia. In accordance with the business plan for 2009 JSC "Techsnabexport" implemented a number of measures aimed at expansion of the long-term stock of orders on the nuclear fuel cycle (NFC) goods and services to foreign customers, which are the core activities of the Company and a key element of the anti-crisis measures program of State Corporation "Rosatom". In 2009, after a long break out of direct commercial sales of uranium products to US utilities, JSC "Techsnabexport" again concluded six contracts with them, their total value nearly \$3 bln. Thus, along with the stable contract execution under the "HEU-LEU" Agreement, Russia has achieved a breakthrough of its high-tech products to the largest segment of the global nuclear market. Signing of at least three similar contracts, their total value up to \$1 bln, is anticipated in 2010. During this year long-term contracts were concluded and supplements to the current contracts on low-enriched uranium supply to the European Union and Asian-Pacific region were signed to a total amount of approximately \$7.5 bln. By the end of 2009 the export orders portfolio for uranium products within the 5-year period (exclusive of supplies against the HEU-LEU Agreement) will exceed \$8 bln (104% of the planned value), and the entire stock of orders is in excess of \$15 bln. By and large, uranium products and services worth nearly \$2 bln were supplied to foreign customers in 2009 within commercial contracts, while by the results of the HEU-LEU program implementation more than \$900 mln will be received by the RF budget. In 2009, the cooperation in the framework of a contract between JSC "Techsnabexport" and CNEIC for rendering assistance to China in building the 4<sup>th</sup> phase of

uranium isotope enrichment plant based on the Russian advanced gas centrifuge technology was continued. The construction is in full swing strictly according to schedule. About 60% of basic equipment, i.e. gas centrifuges, have been delivered. The volumes of auxiliary equipment supplies accounted for more than \$20 mln. 45% of the project plans and specifications, as well as service forms and records, have been developed and transferred to the Chinese partner. Appreciation of the technical project and construction of the facility by Chinese customers is noteworthy, the facility protection has been successfully implemented by JSC "Techsnabexport" conjointly with the lead industry design institute "VNIPIET" in Beijing in July 2009. In May 2009, in Tokyo JSC "Techsnabexport" and the Japanese "Toshiba Power Systems" Company, integrated into "Toshiba Corporation", signed a Memorandum of Understanding. The Memorandum was signed in promotion to the development of the General Framework Agreement on Business Cooperation, concluded between JSC "Atomenergoprom" and "Toshiba Corporation" Company on March 20, 2008, and it provides, inter alia, for the study of business concepts or business plans of cooperation in the production and delivery of NFC goods and services, enriched uranium, in particular. In December 2009, the first Russian plant to be engaged in recycling of depleted uranium hexafluoride (DUHF, UF<sub>6</sub>) to triuranium octoxide (U<sub>3</sub>O<sub>8</sub>) was commissioned at JSC "PA "Electrochemical Plant" (ECP, Zelenogorsk, Krasnoyarsk Territory, a 100% subsidiary of JSC "Atomenergoprom"). The new production, designed for reprocessing 10 thous. tons of DUHF annually, was arranged based on the French "AREVA NC" technology under the contract with JSC "Techsnabexport". Isolation of chemically aggressive fluoride in the new production process will permit converting DUHF into triuranium octoxide - a product similar to the natural state of uranium ore in terms of its properties, being chemically stable, easily amenable to conservation, and permitting further use for fuel fabrication for future NPP with fast neutron reactors. Specialists employed by the Association actively promote the Russian foreign policy initiatives to establish the international legal framework and infrastructure of guaranteed nuclear fuel supplies, as well as to strengthen the international nuclear nonproliferation requirements. In 2009, agreements were reached at the governmental level envisaging participation of the authorized organizations of Ukraine and Armenia in the International Uranium Enrichment Center (JSC "IUEC") set up by Russia (JSC



“Techsnabexport”) and Kazakhstan (NAC “Kazatomprom”) in 2007 in Angarsk. In line with the decision of its sole shareholder (JSC “Atomenergoprom”) JSC “Techsnabexport” transferred its shares in JSC “IUEC” to State Corporation “Rosatom” in October 2009. At the meeting of IAEA Board of Governors in November 2009 a resolution supporting the initiative of the RF Government on setting up in the territory of Russia of a physical stock of low enriched uranium, which will permit IAEA to supply the low enriched uranium to its member states, was adopted, which was a diplomatic breakthrough in the creation of an international system of guaranteed fuel supplies for NPP and reduction of the risks stemming from sensitive nuclear technologies proliferation. It is assumed that the physical stock materials will be managed by JSC “IUEC” and will be transferred, on receiving an IAEA request for supply, from JSC “IUEC” to IAEA under the relevant contract. All preparatory stages, including the endorsement of the state technical commission of experts required for decision-making by the RF Government about setting up a Russian-Kazakh uranium enrichment center in Angarsk, a vital element of the two countries nuclear power complexes integration program, have been completed. The Company representatives took active part in various projects and activities undertaken by international specialized organizations such as the World Nuclear Association (WNA), the US Nuclear Energy Institute (NEI) and IAEA. The main objective consists in strengthening the interaction with key agents in segments of the global market of nuclear fuel cycle goods and services, exchange of information on the status and prospects of its development, formulation and promotion of a coherent position on various issues important to the global nuclear industry. In 2009, a draft bill prepared with direct involvement of the Company specialists with a view to improve the state regulation of foreign barter transactions, which is essential for industrial exporters, was submitted to the State Duma. Adoption of the bill would significantly strengthen the competitive positions of the Russian suppliers in the global uranium market. In December 2009, the Svea Court of Appeal (Sweden) dismissed the claim lodged by Globe Nuclear Services and Supply (GNSS), Ltd. (an intermediary company earlier involved in implementation of the HEU-LEU Agreement in terms of the natural component (LEU) sales) to cancel the previous decision in favor of JSC “Techsnabexport” made by international commercial arbitration in Stockholm (Sweden). This decision of the Court of Appeals is final and can not be appealed. Thus, the Swedish Court of Appeals, by affirming the correctness of the decision rendered by the tribunal, put an end to the process initiated by GNSS, in order to obtain

\$1 bln from the RF federal budget, dragging on for more than 6 years. Within the 3-year project aimed at creation of an integrated system of State Corporation “Rosatom” public accountability, which began in 2009, the Company took part in a pilot project of drawing up public reports for year 2008 by a number of the sector key organizations. The Company is also actively involved in the implementation of branch project aimed at introduction of the State Corporation “Rosatom” new Code of Ethics. Further efforts aimed at the long-term contracting agreements and bringing the stock of orders to \$20 bln, isolation of the non-core assets and concentration on the core activities (exports of NFC goods and services), the incorporation of OJSC “St. Petersburg Isotope” into the control loop of the Company to improve the competitive environment in logistics and supply, to promote setup of the Fuel Company based on JSC “TVEL”, participation in feasibility studies of joint projects on constructing uranium enrichment plants based on the Russian gas centrifuge technology abroad, should be mentioned among the main objectives of JSC “Techsnabexport” in 2010.

## Supplement 6 Transcript of an interview given by the former head of NAC Kazatomprom Mukhtar Dzhakishev in prison and IBR comments on the interview

The former head of NAC Kazatomprom Mukhtar Dzhakishev was questioned in prison sometime in summer 2009 (Dr. Dzhakishev was arrested on 21 May 2009)<sup>4</sup>. A video of this interview in Russian was uploaded on youtube.com in November 2009<sup>5</sup>. His answers provide interesting insights into the allegations that led to his arrest and some details of Kazatomprom's strategy.

The following text provides an English translation of practically all his words interview. Some general ideas expressed by Dr. Dzhakishev in lengthy words are given in an abridged form. In most cases we translated Dzhakishev's words as literally as it is possible given the differences between Russian and English languages. Abridged parts and interrogator questions are shown in italic. Our comments are given in italic. We also made several very short abridgements shown as a line of dots "....." and added some evident words (in brackets [ ]) that Dr. Dzhakishev omitted in speech.

### Tape D1

*M. Dzhakishev began his speech with an outline of the future of the nuclear power in the world. Rather strangely he put much emphasis on the future of high temperature reactors as the most promising type of nuclear reactors that "will be constructed starting from the 2030s". He mentioned that these HTR will be able to produce very cheap hydrogen as a replacement of gasoline in transports applications. He stressed that Kazakhstan must get access to the technologies of these HTRs and technologies needed for HTR fuel manufacturing. If we simply work in natural uranium mining and do not develop in other directions we'll develop uranium mining up to, in my opinion 25-30% of world's demand and then we will have to become a raw material supplying appendix to those companies that make fuel because nuclear power plants do not need uranium as such they need fuel. .... The existing trend is that starting from 2015 NPPs*

*will prefer buying nuclear fuel (rather than uranium, enrichment and fabrication superlatively). .... In order to sell nuclear fuel we had to find a partner for whom we would become a raw material supplying appendix. In order to avoid becoming a raw material supplying appendix to someone of these countries (Russia, France, Japan, China, USA) the strategies of Kazatomprom were aimed at developing domestic nuclear fuel cycle and start production of nuclear fuel. The following policy was chosen by us. All the countries that I mentioned are superpowers and it is difficult for us to compete with them directly so we choose to be convenient for all. In other words, Kazatomprom and Kazakhstan would become a kind of a link/hub between the Japanese, Americans and the Russians, between Americans and the Chinese, between the French and the Chinese. In this case Kazakhstan has a chance to get access to technologies and new knowledge as a result of an alliance. As such policy has been pursued by us. [We plan to have] conversion with the Canadians, fuel pellets with the Japanese, Chinese and the USA. [We plan to have] fuel assemblies with America and France. As a result of such policy Kazatomprom get a chance to enter the new segment of so called high temperature reactors which I have mentioned. At present we do not have any prerequisites to enter this sector because spent nuclear fuel of thermal reactors is used as a fuel for high temperature reactors and, in principle, natural uranium is not needed<sup>6</sup>. We do not have any HTR technologies and we cannot design HTR reactor but if we unite the efforts of Russia's Rosatom, Toshiba and Westinghouse through Kazakhstan and join this alliance with them we will get a chance to obtain access to new knowledge and new technologies but we will need our own specialists. That is why we set a priority task and already agreed with Tokyo Technological University<sup>7</sup> and Osaka University to establish a branch of these universities in Kazakhstan and establish in cooperation with Toshiba-Westinghouse an international center also in Kazakhstan. Due to these developments we expect to raise professionals that will be able to become one of developers of HTRs by 2030 and occupy the market of HTRs' fuel. That was*

<sup>4</sup> Though this video is often called an interrogation it is definitely not so. Dr. Dzhakishev was given an opportunity to speak at length while the interrogator never tried to ask additional questions and find some controversy in Dzhakishev's words. Moreover, the very fact that this video was made public clearly shows that it had been recorded by some renegade officer of the Kazakhstan Security Service in order to make it public.

<sup>5</sup> The interview is given in seven parts referred further as tapes 1-7. First tape has the following address <http://www.youtube.com/watch?v=qSLf0Anqzc&feature=Playlist&p=E11816839EA79034&index=0&playnext=1>

<sup>6</sup> This strange remark shows that Mr. Dzhakishev wanted to make the potential of using Pu in HTGRs look as a mainstream direction of the future nuclear power (Generation IV reactors). We cannot suppose that Mr. Dzhakishev, being a nuclear professional, confuses high temperature gas cooled reactors (HTGR) and fast breeder (FBR) reactors.

<sup>7</sup> Most probably he meant Tokyo Institute of Technology

in general our strategy and one of the key features of it was that the Russians contacted the Japanese and Americans via Kazatomprom and all contacts of the Russians with Toshiba and Westinghouse were thought Kazatomprom. We thought that all were content with the situation especially when we received a proposal to establish a joint company with Rosatom and we thought that all the interests of all sides would be taken into account. Yet, in the end of the last year (2008) we started to receive various signals that the Russians had begun separate talks with those partners that should have been contacted via Kazatomprom. We thought that they had done so because they had understood that the concept of the untied Russian-Kazakh company had no future and started their own game. The first thing that we had to face was the Russians interest to joint stock company Uranium One. This company has approximately 35% of assets are connected with Kazakhstan and 65% of assets are related to other depots in South Africa, Australia, the USA, Canada. We had the following understanding with Uranium One that all uranium mined by Uranium One even outside Kazakh territory will be given to Kazatomprom that is when we need fuel Uranium One will provide the uranium and we will have full marketing rights for this uranium. Uranium One informed us that the Russians started negotiations to get a share in Uranium One with the same terms, namely, the Russians will have the right to control resources of Uranium One<sup>8</sup>. ..... We told Uranium One that they must not have any negotiations with the Russians until Kazatomprom gives its approval. In order to prevent acquisition of controlling share in Uranium One by the Russians we invited to increase presence in Uranium One those partners that could pursue our policy. That is why in the end of the last year I connected with Toshiba and persuaded them to get a share in Uranium One. In March 2009 Toshiba got 20% stake in Uranium One. As a next step we wanted to invite the Chinese nuclear companies that work with us to get another 20% in Uranium One. Thus, with 40% of Uranium One in the hands of the Japanese and Chinese, the Russians would not have decisive voice in Uranium One even if they got a share in the company. And we would be able to pursue our policy. We also warned the Americans (Uranium One) that our understanding that all uranium mined by Uranium One in all parts of the world was to be marketed via Kazatomprom<sup>9</sup> must remain in force.

## Tape D2

Regretfully, on May 21, this year (2009) I was arrested and I was informed that in June, while I was in preliminary confinement in the prison of the Kazakh Security Service, the Russians had a deal with Uranium One and the rights to uranium of Uranium One that is an American company. The Russians would never have signed such a deal if Kazatomprom had not approved of the deal. The Americans took that decision only when the Russians persuaded them that they (the Russians) controlled Kazatomprom or at least direct our policy. Secondly, in the beginning of this year (2009) I received information from Toshiba that the Russians proposed an agreement comprising two principal articles. First, a storage of fuel pellets was to be established in Japan by the Russians and Toshiba with the amount of pellets in storage adequate to the total demands of all Japanese reactors through the rest of their service lives. The second proposal was to jointly construct a uranium enrichment plant using Russian technology in Japan. Such an agreement is contrary to all interests of Kazakhstan because if the Russians have a fuel pellet storage in Japan that will mean that Japan will need no Kazakh natural uranium and fabrication services of Ulba Metallurgical Plant. If we recall that the Russians refused to order fuel pellets from Ulba in the beginning of this year (2009) we see that the general idea of this deal is to deprive Ulba of [Japanese] orders. We expected that having lost the Russian orders we would sign a contract with the Japanese and move to pellets production for the Japanese market. Such a contract was signed with the Japanese. Yet, this contract did not come into effect because the Ministries of Foreign Affairs of Kazakhstan and Japan had not signed the Agreement on Peaceful Use of Nuclear Energy. We persuaded the Japanese not to break the contract promising that the Kazakh Ministry of Foreign Affairs was to sign the agreement during this year (2009) and the contract was delayed to the next year (2010). If the Russians have the fuel pellet storage, the Japanese will not need fabrication services of Ulba Metallurgical Plant and taking into account that orders for fuel pellets for the Chinese are to start only in 2014-15 this means that our plant will have no work for the next five years. The second proposal about joint venture in uranium enrichment makes useless our own proposal about construction of a uranium enrichment plant jointly with the Russians in Angarsk because we established that joint venture

<sup>8</sup> He implies that the Russians will have exclusive right for purchase of uranium from Uranium One.

<sup>9</sup> Dzhakishev words, in our opinion, imply that when, at some point in the future in the future, Kazatomprom needs

uranium for production of fuel Uranium One should provide uranium even if it is mined somewhere outside Kazakhstan. In other words Kazatomprom will have preferential right to purchase any uranium mined by Uranium One.

exclusively for the demands of Japanese market. In the Russians build such a plant in Japan we will have no reason to go on in Angarsk with the Russians because there will be no market for the product of the enrichment plant due to antidumping restrictions in America and quotes in Europe. Having obtained this information about the Russian proposals I left Germany still not fully recovered from my illness and went to the opening ceremony at Kyzylkum ISL mine where the president of Toshiba arrived and for two days we were engaged in negotiations and agreed on the following. When Toshiba received the Russian proposal Toshiba was to ask the Russian side about the place of Kazatomprom in the proposed business scheme and offer its counter-proposal as follows. The Russians supply raw material<sup>10</sup> to Ubla Metallurgical Plant that manufactures pellets and the storage is founded jointly by Kazatomprom-Russia-Toshiba. When it came to the enrichment plant in Japan the Japanese side explained to the Russians that construction of such a facility would necessitate a very complex and long licensing procedures. Construction of a joint Japanese-Russian uranium enrichment plant in Russia was also considered hardly possible because of the constant Russian Japanese tensions over the Northern Territories (the Kuril Islands). That is why we agreed with Toshiba that they would make a proposal to build a uranium enrichment plant in Kazakhstan. These proposals<sup>11</sup> were prepared by the Russians for Putin's visit to Kazakhstan on 17-18 May 2009. As I was told by Toshiba the Russians even had had a press-release prepared stating that they signed the agreement. When the Russians arrived and faced the Toshiba's position they naturally said OK we would have discussions with Kazatomprom and return to the negotiating table in September. Because I'm here the deal with Uranium One has been signed the agreement on the establishment of a storage in Japan was stopped by Toshiba but if we won't make any efforts Toshiba agrees to the Russian proposals in September or, at the latest in October because the deal, in general, is profitable for Japan. *Then Dr. Dzhakishev repeats that such a deal will be fatal for Ulba plant, idea of enrichment plant in Russia and make problematic marketing of uranium mined at new ISL mines and production plans will have to be reconsidered and taking into account heavy debt burden on Kazatomprom he thinks that even default is possible.* In May (2009) we opened a joint venture with the Chinese and it was thought that in June 2009 we were to have signed agreement with China on the share of

uranium, fuel, fuel pellets that China would buy in Kazakhstan. This deal has not been signed I know that nobody went to sign it though we had agreed to sign it during the visit of Chinese vice premier Giang Go Bao to Kazakhstan and from the same source I received information that the Russians also approached the Chinese with similar proposals. So there is an impression that all our previous ideas are taken by the Russians and Kazatomprom is being substituted [*by the Russians in those deals*]. I cannot tell what deals they already have made and what negotiations are underway because at present I'm totally cut from all information sources and all the agreements that we were to have signed, in June with the Chinese, in July with the Japanese are not signed according to my information and even are not being discussed.

### Tape D3

I would like to divide the issues related to accusations against me and the issues related to those arrangements that we have made in the last ten years. *Then he explains that if nothing is done in the near future to sign those agreements with foreign partners that were "on the final course" Kazatomprom is going to miss its chance to become an integrated fuel company and become an "raw materials supplying appendix" for the foreign nuclear companies. He adds that if there will be no special agreements he sees only one way for Kazatomprom other than to default. Kazatomprom will have to find market for uranium and will have to sell it to the Russians. In this case, says further Mr. Dzhakishev, the Russians will be selling fuel to Japan and China and buying uranium from Kazatomprom and Kazatomprom will inevitably become an "raw materials supplying appendix" for Russia's Minatom [Rosatom].*

*The investigator or interviewer asks the following question: "What can you say about the accusations which were made against you in 2007?"*

When these accusations were first made in 2007 I thought that these accusations had been prepared by the Security Committee of Kazakhstan but now I see it was not so at that time. All these accusations were formulated taking into account our psychology and mentality and on the other hand they do not allow me to defend myself publicly. Well, the main point was that the largest uranium deposits were given away for nothing and in the hands of foreigners et cetera. Yes, I could vindicate myself publicly saying well folks; it is not true we are not giving the deposits for free, in reality we, in accordance with the depth use contract, give

<sup>10</sup> In this case raw material is evidently enriched uranium hexafluoride.

<sup>11</sup> Russian proposals outlined above

a joint venture permission to mine certain amount of uranium during the term of the contract. That is how it really is. Let's consider the case with the Americans<sup>12</sup>. They have a depth use contract for 25 years. Five years are passed and 20 years remain. This year (2009) the joint venture is to finish construction of a mine at the deposit. The mine will be reaching its full name plate capacity for another 5 years. So in the next 5 years they mine 5,000 tU and in the remaining 15 years 30,000 tU. Thus, the total amount that they will mine during the term of the depth use contract will be 35,000 tU. For this the joint venture will build roads, power lines, the mine, plus most of the surface at the deposit is under water. So they have to do land reclamation works in the area. The design [of the land reclamation works] is not ready and will be ready next year (2010), in the best case. Land reclamation works will take another two years. Water will be drained for minimum 3 years. Then the salt-marshes must dry out. I don't know how long it will take say 5-8 years at minimum. If you add these years you see that they will have only a few years before the end of the contract. The deposit, as we assume, has about 120,000 tU and during the term of the contract they not only build the infrastructure but also explore the deposit as it is stated in the depth use contract. At present the deposit explored resources are 21,000 tU and they will explore it up to 120,000 tU for us. Let's take a closer look at how much of these 35,000 tU foreigners will get in the end. The tax burden of uranium mining enterprises is, at average, from 55 up to 65% depending of the production costs. Thus, in fact 55% of uranium will become the profit of the state. There are 17,000 tU remaining of original 35,000 tU. These 17,000, well lest take 18,000 tU, will be in the hands of the joint venture. 30% belong to Kazatomprom, that is 6,000 tU. Thus foreign partners will get 12,000 tU of the total 120,000 tU in the deposit and we get fully dried land, infrastructure and it will be fully explored and all this for just 10% of the total resources of the deposit. Then the current contract for depth use ends we will be able to mine at the deposit much more uranium than they will have mined bearing the burden of all expenses. Yes I could make a public statement with these explanations but if I make such a statement foreigners will start asking questions why we do all exploration land reclamation etc. if everything we are doing is done for Kazakhstan. In this case the will start demanding a prolongation of the depth use contract and give that the right to mine more. There is the reason [in such revelations for Kazakhstan]? Thus, my explanation and vindication will immediately lead to negative

consequences for Kazatomprom and Kazakhstan. In principle, all other accusations are made using practically the same pattern. Because you may ask a question whether foreigners understand that they will work for us. You know, there is very interesting specific issues, inside that company which is listed at stock exchange, only five men understand the situation. These men head the company but these five men that manage that company do not care a bit what is to become of them in twenty years because their salaries and their income depend on the increase in their company stock value. If the value of the stock is growing they get options and good salaries. If we now make public that they are doing exploration for us it is understandable that the stock price will stop growing. They do not want such declarations, they clearly understand it [the circumstances], but they are going to work for eight years maximum because they all are of considerable age. And they are not interested in any fuss that can negatively affect stock price. All the other shareholders...are not strategic investors. When uranium stock is raising they buy uranium when it is falling they sell uranium and buy something else .... he [a non-strategic investor] is not interested in details and those who understand are not interested in bad news. Thanks to it this all has been happening and for me to open the eyes of the shareholders in order to vindicate is to make worse the situation for both Kazatomprom and Kazakhstan. .... In reality, we do not give away the deposits we give the right to mine a definite amount of uranium and they cannot mine more than specified it is against the law.

#### **Tape D4**

*Then the interviewer says: "There are also accusations of you related to Stepnogorsk [Mining & Chemical Combine]".*

It is the same thing with Stepnogorks. In reality the situation is very simple. Frankly speaking, the plant belongs to Kazatomprom only via an offshore company. We do not disclose that it is owned by Kazatomprom because it is connected with the trial that is going on in Stockholm. *M. Dzhakishev than elaborates that Kazatomprom is suing now the previous owner of the enterprise, namely, an obscure company called World Wide Minerals [Ltd.] that owned the plant in 1996. Kazatomprom already won a one billion USD trial in the USA. If Kazatomprom reveals that it already owns the plant they [the adversaries] can sue Kazakhstan for state racket giving them more chances to win. He mentions that the plant is still profitless but he would be able to make it profitable if he were still at the helm of Kazatomprom. The idea is*

<sup>12</sup> Dr. Dzhakishev taking here about Americans refers to Uranium One as he has done it above.

*that if he vindicates himself it will cost 4 billion USD for Kazakhstan because of the lost case in the Stockholm court.*

*The investigator or interviewer asks the following question: "What relation does someone called Charyshkin have to all these [deals/issues]?"*

This is a very interesting question. Yevgeny Charyshkin was studying with me at the Moscow Engineering Physics Institute until 1986. Then he became a business man, [he is] an Australian citizen, when we were opening that offshore company to buy Stepnogorsk plant from Gaidamak<sup>13</sup> we first decided to establish joint stock company with undistributed stock because we could not show that the real owner was Kazatomprom. Yet, there was a requirement that at least one share must be placed. So when we accidentally met with Charyshkin at somewhat of former graduates meeting we used him to place that one share. It does not mean that that share belongs to him. It was only placed at him all remaining 99 [shares] were not placed. .... Now I'm being accused that Charyshkin is my close friend and I gave him millions on his word. Imagine that a person with whom you studied 23 years ago .... and never were close friends. Evidently he cannot be a trusted person to whom I allegedly entrusted millions. So such a deal where his role was purely formal we naturally can use him because, believe me, I do not have experience in establishing offshore companies. .... especially when it was important to keep it all [purchase of Stepnogorsk plant from Gaidamak] secret. At present, I repeat it aging that lawyers have a document that state that as soon as Kazatomprom finishes litigation with World Wide [Minerals] Kazatomprom can start transferring these shares to Kazatomprom so the plant is in fact belongs to Kazatomprom.

*The investigator or interviewer says "Hmm I see... And may I ask another question? Joint venture with the Americans there is a question...How did you establish it?"*

Yes, when it regards JV with Americans, it is also an interesting situation; nobody has ever said that at the moment of JV establishment I gave it [the deposit] away cheaply because at the moment of establishment we handed [the deposit] over in accordance with auditors' valuation for the price it did cost at that time. It was like for example you sold your flat when it cost \$20,000-\$30,000, you remember, then in

two years the price rose up to \$300,000 due to a sharp hike in prices and you are accused that you sold for 30,000 whereas now it costs 300,000. Firstly, it was very difficult to predict. Yet, on the other hand, and I think it can be demonstrated using figures, that that American company, in fact there was a whole pool of American financial funds represented by Frank Giustra, in fact here we face the mechanics of money raising for the Democratic party. I found myself in strange situation. Recall the scandal with Hilary Clinton, that Giustra had made 30 million USD in Kazakhstan and gave 300 million USD to the presidential campaign fund of Hilary Clinton. Earned 30 and gave 300 millions. I am acquainted with Frank Giustra. Mildly speaking he isn't a generous man. And if he gave 300 millions he had got minimum 3 billions. And I began to unravel the mechanism of his money making. And here I ran into a queer thing. Firstly, here Charyshkin appears one again. When we discussed establishing of a joint venture with Frank Giustra he called me up and asked if I had nothing against his working with Frank Giustra in a project in Kazakhstan. I told him that it was OK and Zhenya [Charyshkin] was introduced here as a director of the company that on behalf of Giustra was acquiring assets here. When the investigation began the articles of incorporation of that company were very easily found as if they had been publicly available on the Web and it came out that the company belongs to Zhenya Charyshkin and he is also the director and there is no trace of Giustra in this company. So the investigators looking at the facts decide there is Charyshkin in the Stepnogorsk case and he is also here in this case that means that it was really Dzhakishev meaning that it is my enterprise and I together with Charyshkin transferred the assets to an offshore and so on. However, there are strange inconsistencies here. The enterprise that was bought from Charyshkin in 2005 was bought at the price it costs now when it has been invested in and uranium price is two times higher. **Tape D5** Then it was a bare field and uranium price was two times lower than at present but the same price was paid. We found the following thing when we started analyzing the situation. First purchase, for an absurdly high price, then another hike in price related to IPO and the third hike related to the merge of that American company with another American company<sup>14</sup>. If you take a distracted look that this deal you see 300 million than 600 million and than 3 billion that is approximate growth in the cost the asset. An enormous rise, at first sight, but if you superimpose this rise on the uranium

<sup>13</sup> Arkady Gaidamak, notorious international businessmen/adventurer/arms dealer. He is a Soviet-born Jew, citizen of Israel sentenced to 6 years in prison in France (in absentia).

<sup>14</sup> Evidently Dr. Dzhakishev meant the merge when SXR Uranium One Inc. agreed to buy UrAsia Energy Ltd. on 12 February 2007. This decision was confirmed by UrAsia shareholders on 15 May 2007.

price rise you'll see a very interesting picture. Uranium started to rise from 30 USD/lbU<sub>3</sub>O<sub>8</sub> up to 138 USD/lbU<sub>3</sub>O<sub>8</sub> then drops in a week to 70 USD/lbU<sub>3</sub>O<sub>8</sub> and then continues to fall to 45 70 USD/lbU<sub>3</sub>O<sub>8</sub> and then a continuous growth. So a hike in uranium process appears, by the way it is not uranium price it is sport indicator but stock exchanges first of all react to it. If you look that the time of the deal between those two American companies and peak of uranium price you will see that they coincide. Of course I allow their being geniuses predicting that market but I don't believe in such coincidences They make a deal and in a practically a month the price falls. I see in principle that 300 millions plus 300 millions put together 600 millions plus shares, part of the shares are clearly not their own, but let's take a billion this means that in 1.5 years they made 1,600 millions in shares plus uranium. They made a company and started to buy uranium on the spot market starting to purchase uranium from each other rising the price. Here like a financial pyramid<sup>15</sup> other funds jointed and they sell that uranium to other funds. In fact a financial pyramid like MMM<sup>16</sup> arises. They sell and make money because they bought it cheaper and they also make money on shares. In principle, a general estimation shows approximately 3 billions that are those 3 billions that were made. You see... When all this fuss with Hilary began I was in America at the meeting with General Electric. Giustra called me up asking for a meeting. I arrived. There were Giustra and some men I never met before. They were interested in only one issue, that multistage scheme, whether I had any information or ask questions or had any idea who had been selling and to whom and whether I had any insights that such an operation had took place. When I saw the direction of their questions I pretended that I understood nothing and said that I do not poke my nose into such deals not being interested in those particulars, and started taking about the market and so on. Gradually I led the conversation from that subject. I was even a little afraid because if, on the threshold of the American elections, I had told them that they had been selling to one another and never cashed the profit I think that I would have been lost somewhere in America. That's why when I now get from investigators that here was Charyshkin, there was Charyshkin, and because you were with Charyshkin you sold [assets] to yourself. At this point happy Giustra says yes, yes, yes I gave it all to Charyshkin. How can I vindicate myself in such circumstances? The only thing I'm going to do now is to get in touch with Charyshkin and frankly tell him that I see he played games but

that he should tell those with whom he played that if they do not send documents that show that I do not have any relation to the property of these companies but in this case I will not be able to vindicate myself and thought I cannot prove that you speculated I, firstly, spoil you speculations in the future, because I'm sure that they are planning to repeat it one again now when the price of shares fell they will be buying them then they will inflate prices and sell shares. But I do write a letter to the president of the World Nuclear Association and inform him about these schemes and ask him to look closely whether such schemes were used in the past. And then the entire uranium market will start looking in a microscope at, first of all, their deal. And I won't have to prove anything. You will have a scandal there. I cannot prove but I'll spoil your future money making possibilities, as I see you want to make money, and at least make your scheme public without any accusations because there are many of professionals there that will understand how this scheme works. So the only thing I can do to vindicate myself is to make them send a document that I was not involved their machinations. Otherwise it is cool [for them]. They will cover this scheme. Again [they are saying] Kazakhstan, yes, we know it is a corrupted country and what? Some official established something, took bribes, stole something, it is their custom of the land. Well, we faced it, we are working in such a country. For them it is ideal to close the case. So it is the only way for me to prove myself innocent. Of course it is possible to conduct an investigation to find out how was purchasing uranium on the [spot] market, obtain lists of shareholders who made money on the shares and compare these lists and if they coincide it is not a commercial luck but fraud and it can be sued. But I'm naturally not sure that they did not founded daughters, granddaughters et cetera and there, in the West, it will be very difficult to unravel all these legal cobwebs. But it can be an argument against them. The fact that they are the financial purse of the Democrats it was dropped by a Clinton's lieutenant that was with them because when they faced a problem of legalization [of uranium assets] here they arrived with the Clinton's lieutenant and he cried that we had encroached on the sanctum sanctorum that is the purse of the Democrats and when I saw that Giustra and the funds behind him act not as private persons. ....Because investigators had to show the dynamics of my criminal activities there is an issue at the moment when Giustra was going to the stock exchange<sup>17</sup> when they

<sup>15</sup> Ponzi scheme

<sup>16</sup> The most notorious and perhaps the first and largest Ponzi scheme staged in the former Soviet Union.

<sup>17</sup> In November 2006, UrAsia Energy Ltd debuted on the TSX Venture Exchange. A detailed report of events accompanying this IPO is given in Financial Post article that elaborates of the issue and can be found at: <http://www.financialpost.com/story.html?id=c8c388e6-ba0b-4ed3-bc67-21a05ec652c2&p=1>

just started to buy uranium on the market and shamelessly resell it they were unable to do it because we [Kazakhstan] passed that amendment 71<sup>st</sup> article in the law of depths use that the state has priority right to purchase a share [in strategic deposits of mineral resources]. **Tape D6**. Then Karim Masimov (the Prime Minister) was on a business trip in the USA and planned to have a meeting with Hilary Clinton<sup>18</sup>. Yet that meeting was cancelled and he was told that the investors working in Kazakhstan with Clinton had had some problems and until these problems were not resolved by Kazakhstan there would be no meetings, moreover, various measures were to be taken. That was why when Karim Masimov returned to Kazakhstan he phoned me and asked me about the nature of these problems. I must admit I was not informed about these problems. He told me to call them [Americans that had had problems] to Astana, let's start resolving the problems. .... I met them in Astana and Clinton's lieutenant Tim Philips began to cry that we were spoiling their deal which is related to the funds of the Democrats and so on. I interrupted him and said "Let's go and have a talk". We went to Karimov and found that there was no real problem. It was related to pure formalities. We had adopted 71<sup>st</sup> article in the law but did not issued a decree regulating the mechanism for the government to issue a rejection. That was because the law had been just published. But they [Americans] were approaching a dead line. They had started the plan of uranium purchases. They had uranium going up but could not float their shares. Imagine the sums of money in question. Here billions and there billions were idling. And everything was hampered by adoption of the new law in Kazakhstan. They were terribly nervous. And sitting in Masimov's office, the guys from the government, the stock exchange lawyers brought by the American side, they found a compromise that a letter must be made in which the Minister [of natural resources] would say that we had not still established the government bodies but we, in principle, approve of the deal and when the body was formed we would hold a meeting of that government commission and send all to you. Masimov called Shkolnik and told him that a letter would be fetched [to him by an officer] and must be signed. Presently this letter appears in my case with Shkolnik now saying the he does not recall signing this letter and expertise has been made conclusion that the signature was faked and I was charged for forgery. I said let's confront me and Masimov, Jusster etc there were a dozen

<sup>18</sup> It was reported by the media that Karim Masimov was involved into backstage arrangements related to the so called Kazakhgate trial, paid as a private person for the services of lobbying firms and became acquainted with key figures from both American political parties.

people sitting there. I was told that there was no necessity in such things because they had conclusive evidence that the letter was faked. .... We had an inspection by tax authorities that calculated an enormous sum of penalty fee for so called transfer pricing. The inspection was in 2007 when we litigated and in 2008 in the course of three months process we proved that we had not sold cheaper [than fair market price] and the problem was only in the wrong calculation techniques used by the Ministry of Finance. They used to compare erroneously. At present, in the framework of current accusations we are to admit that the decision of that trial was wrong and we really sold cheaper. All this as a charge against me strikes first of all Kazatomprom. You see. Why it makes a blow to Kazatomprom? Because Kazatomprom will have to rewrite [pricing for tax purposes] and pay mad taxes every year or take money from the state budget. It will lead to a bad balance sheet of the company and Kazatomprom will be funded from the state budget. .... This means that any antidumping case anywhere abroad will be inevitably lost by Kazatomprom. *Then Dr. Dzhakishev in a lengthy explanation says that according to DOE and Euratom statistics uranium from Kazakhstan was the most high-priced uranium on the respective markets and the problems with transfer prices was in an erroneous methods used by the Ministry of Finance and tax authorities and Kazatomprom never sold uranium to any offshore companies, only to well-known nuclear companies.*

#### **Tape D7**

*Then he again repeats that he is depressed to see that the Russians do what they want whereas the Kazakhs loose opportunities and "what is being done should not be done and what should be done is not being done" and that all this is in the Russians interest and "while I'm doing time here all that is disadvantageous for us is being done with incredible speed but we are doing nothing when it comes to all that should be done. According to my data Toshiba arrived here and nothing was proposed from the Kazakh side and they left. The next step I see is that they are meeting the Russians in London in September and they are to discuss the conditions of the [fuel pellet] storage establishment and I think that by October they publicly declare the establishment of this storage". When he adds that "one of the reasons I want you to record all this is that I cannot control my blood pressure and I have hikes in pressure up to 210 and of something happens to me I want this information to be preserved". Then he again repeats that priority tasks for Kazatomprom are to sign the contract with the Chinese and spoil the Japanese*



*contracts [with the Russians]. He mentions well known fact that establishment of fuel assembly plant using AREVA's technology on the basis of Ulba metallurgical plant was primarily intended for the Chinese market. He also adds that establishment of educational centers with the Japanese is also a priority task and he arranged with Japanese government that Kenji Murakami formerly a senior officer of the IAEA will be coordinating activities in educational sphere starting from September 2009.*

*In the end of the interview he again repeats the same thoughts about the need for Kazakhstan to move towards hi-tech nuclear technologies that he expressed in the first part of the interview*

### Comments of IBR

The interview transcribed above was given by Dr. Dzhakishev in prison in an attempt to use the sympathy of some high-ranking officers of the Kazakh Security Service to attract attention to his plight. It is not known in what circumstances these officers decided to make such serious crime because all results of interrogations must be kept confidential. As we have mentioned above we consider these tapes as a kind of interview. The interrogator seems reluctant to ask any provocative questions in fact it seems that he is on the side of Dr. Dzhakishev. The wife of Dr. Dzhakishev later claimed that it was the head of Kazakh Security Service who gave her this videotape and it seems that he was really involved in this case because he resigned shortly after the record attracted the attention of the media. It is clear that the main points that Dr. Dzhakishev stressed in the interview are as follows:

- His arrest was very advantageous for Rosatom, which is referred by him as the Russians, if not indirectly arranged by them;
- He did not commit any crimes and all his actions were directed by his constant and ardent attention to the national interests of Kazakhstan.

Dr. Dzhakishev's words clearly show that he tried to make his particular case look like a struggle of an honest and patriotic Kazakh against the Russians that should look in this case like an Evil Empire deliberately spoiling efforts of Kazatomprom to become a global player in all industries of the nuclear fuel cycle. As a kind of second-tier evil he tries to present the Americans personified in UrAsia/Uranium

One (actually registered in Canada). He clearly tried to play on the nationalistic feelings of many ethnic Kazakhs adding to it the old Cold War era suspicion of USA and Americans and general negative feelings towards them felt in many part of the world. Objectively speaking, Rosatom has always been interested limiting development of Kazakhstan in more hi-tech sectors of the nuclear fuel cycle and it really stopped relations with Kazatomprom's Ulba Metallurgical Plant because from the Russian point of view it was absolutely unnecessary to place orders for fuel pellet manufacture when large Russian plants had necessary staff and capacities. At the same time Rosatom absolutely seriously proposed Kazatomprom to build a joint venture uranium enrichment plant at Angarsk and this project is going on despite the arrest of Dr. Dzhakishev. When it comes to his words about Uranium One, he says a very strange thing that Kazatomprom had the preferential right to buy all uranium mined by Uranium One around the world. This statement sounds absolutely improbable. He also tries to make an impression that it is a kind of conspiracy in the management of Uranium One (and, by inference, in all foreign uranium mining companies operating in Kazakhstan) that there are contracts that clearly show amount of uranium that can be mined before prolongation of these contracts. In fact it has not been a kind of secret hidden from the shareholders of Uranium One, Cameco, etc. Depth use contracts will have to be prolonged and they most probably will be prolonged and extended to higher resources of uranium at the same deposits though this time the cost of such contracts/licenses will be significantly higher. At the same time infrastructure build in the first years of active uranium mining in the south of Kazakhstan will stay in place and be used for future mining projects. Future contracts and mining projects will be discussed in the future whereas current uranium mining projects in South Kazakhstan were analyzed having in mind the limits of time and licensed amounts of uranium that can be mined at each particular deposit during the term of depth use contracts. Calculated cash flows showed that these ventures were quite profitable and uranium prices used for cash-flow calculations were lower than current of projected prices leaving aside former huge price increase<sup>19</sup>. His arguments about critical delays for irrigation works at South Inkai etc are also unconvincing as all mining projects with Western participation in Kazakhstan have been developing more or less on time. Thus, Dr. Dzhakishev's revelations

<sup>19</sup> UrAsia (now Uranium One) calculated cash flow for South Inkay with ~ 21-27 USD/lbU<sub>3</sub>O<sub>8</sub> in mind and total amount of mined uranium 11,600 tU and it was accepted as a good investment option. The same calculations were made for all current projects in Kazakhstan and all of them are profitable even in the licensed time-uranium amount limits.

about the limits on time and amount of uranium licensed to joint ventures like South Inkai do not reveal anything that might have an impact on the economics of these projects.

We suppose that many details concerning his meetings with Mr. Guistra, Mr. Philips and Mr. Masimov are more or less true. At the same time, Dr. Dzhakishev, being no professional actor, speaks much less confidently about his relations with Mr. Charyshkin. His behavior shows that he tries to downplay the real importance of these relations.

At present (end of 2009) Dr. Dzhakishev was to face a trial in January 2010 but charges against him include only cases of bribery, misappropriation of Kazatomprom's funds, establishment of a representative office in Vienna that allegedly was used for diversion of Kazatomprom's funds. It seems that the main accusation of registering uranium deposits on his crony and accomplice Mr. Charyshkin were dropped by prosecutors. The trial is to be held beyond closed doors. We suppose that numerous cases of bribery will be easy to prove and most probably Dr. Dzhakishev will be found guilty and sentenced to 5-7 years in prison.