

Russia Fissile Material and Nuclear Fuel Cycle Chronology

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Last update: June 2009

This annotated chronology is based on the data sources that follow each entry. Public sources often provide conflicting information on classified military programs. In some cases we are unable to resolve these discrepancies, in others we have deliberately refrained from doing so to highlight the potential influence of false or misleading information as it appeared over time. In many cases, we are unable to independently verify claims. Hence in reviewing this chronology, readers should take into account the credibility of the sources employed here.

Inclusion in this chronology does not necessarily indicate that a particular development is of direct or indirect proliferation significance. Some entries provide international or domestic context for technological development and national policymaking. Moreover, some entries may refer to developments with positive consequences for nonproliferation.

2008

20 April 2008

PLUTONIUM PRODUCTION REACTOR ADE-4 AT SEVERSK IS SHUT DOWN

Press service of the Siberian Chemical Combine (SKhK) announced that on 20 April 2008 at 11 pm local time, operations were ceased at the ADE-4 plutonium production reactor.[1] The shutdown of the reactor, which took place eight months ahead of schedule, was completed in just 4 minutes.[2,4] In what appears to be an incident unrelated to the early shutdown, on 2 April 2008, ADE-4 had experienced a sudden stoppage because of a failure of an electrical transformer, but the reactor was started back up on the next day.[2,3] By December 2007, the progress made by the U.S. National Nuclear Security Administration (NNSA) in refurbishing fossil fuel plants in Seversk, as part of its Elimination of Weapons Grade Plutonium Production program, allowed operation of ADE-4 and ADE-5 in alternating mode, which, according to the NNSA, effectively reduced annual bomb-grade plutonium production at Seversk by 50 percent. The ADE-5 reactor will make up some of the power generating capacity of ADE-4 for Seversk and Tomsk until its scheduled shutdown in June 2008.[1,2,4,5] The ADE-2 reactor in Zheleznogorsk is expected to be shut down before 2010.[4]

[1] SKhK, "Okanchatelnaya ostanovka promyshlennogo reaktora SKhK," 21 April 2008, www.atomsib.ru.

[2] Olga Kovaleskaya, "Minuty i gody reaktornogo zavoda," Novaya Gazeta, 25 April 2008, www.atomsib.ru.

[3] SKhK, "Reaktor ADE-4 Sibirskogo khimicheskogo kombinata rabotayet v shatnom rezhime," 4 April 2008, www.atomsib.ru.

[4] NNSA, "Russian Weapons-Grade Plutonium Reactor Shut Down Ahead of Schedule," 21 April 2008, <http://nnsa.energy.gov>.

[5] NNSA, "Seversk Plutonium Production Elimination Project," <http://nnsa.energy.gov>, 15 May 2008.

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5 June 2008

PLUTONIUM PRODUCTION AT SEVERSK ENDED

On 5 June 2008 at 1:03 pm local time, production of weapons-grade plutonium at the ADE-5 reactor in Seversk was halted. [1, 2] The shutdown of ADE-5 took place slightly earlier than originally expected, as was the case with the 20 April shutdown of ADE-4, which is being de-fueled at present. [3, 4] Both ADE-4 and ADE-5 were certified to operate until 2010. [5] In connection with shuttering of the ADE-4 and ADE-5, the Siberian Chemical Combine (SKhK) expects to lay off approximately 370 employees. [5] SKhK management and union leaders plan to retrain and assist the unemployed with job placement; they are also hoping that employment opportunities will be boosted by construction of a nuclear power plant in the Seversk vicinity. [6] Repairs of boilers and turbine generators at the Seversk fossil fuel plant (Seversk TETs), expected to compensate for power previously generated by ADE-4 and ADE-5, are progressing on a tight schedule. [7] The ADE-2 reactor at Zheleznogorsk is expected to be shuttered in the 2010 timeframe as part of the Elimination of Weapons Grade Plutonium Production program.

[1] SKhK, "Poslednii promyshlennyi reaktor SKhK," 4 June 2008, www.atomsib.ru.

[2] Roman Maratov, "Reaktor ostanovili – AES postroim!" Dialog, 5 June 2008, www.atomsib.ru.

[3] NNSA, "NNSA Announces the End of Plutonium Production in Seversk, Russia," 5 June 2008, <http://nnsa.energy.gov>.

[4] "On June 5 Siberian Group of Chemical Enterprises stopped the last ADE-5 reactor in the framework of Russian-US plutonium elimination agreement," Interfax, 5 June 2008, www.rosatom.com.

[5] Valery Kadrov, "Aleksandr Kokhomskii: reaktory vypolnili svoiu missiiu," Tomskiy novosti, 5 June 2008, www.atomsib.ru.

[6] "Menedzhery SKhK i profsoiuzy delaiut stavku na atomnuiu stantsiiu," TV-2, 5 June 2008, www.atomsib.ru.

[7] "ZATOpitelnyi sezon," Tomskii vestnik, 22 May 2008, www.atomsib.ru.

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2007

19-22 January 2007

RUSSIA AMENDS LEGISLATION ON NUCLEAR MATERIALS OWNERSHIP, INVITES IAEA TO VISIT ANGARSK

On 19 January 2007 the Russian State Duma passed a new law on the management of nuclear assets that allows nongovernmental entities to own nuclear materials and facilities, and that permits foreign entities to import nuclear materials to Russia for processing and re-export, without altering the ownership of the materials. The law was approved by the Council of Federation on 24 January 2007. Following passage of the legislation, Rosatom and the Russian Foreign Ministry invited IAEA experts to visit the Angarsk Electrolytic Chemical Combine and initiated discussions with the Agency on the form of IAEA safeguards that would apply to the enrichment facility.

-Cristina Hansell Chuen and Elena Sokova, "Nuclear Power Broker," Bulletin of the Atomic Scientists, Vol. 63 (5), 2007, 50-54; "Angarsk International Uranium Enrichment Center Chronology," 2007, PIR-Center, www.pircenter.org.

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20 March 2007

PUBLIC OUTREACH OFFICE ESTABLISHED IN ANGARSK, IAEA VISITS ANGARSK

Following the request of Rosatom head Sergey Kiriyenko request, the environmental organization Green Cross International set up a public outreach office in the town of Angarsk that would help stem environmentalist and other public opposition to the International Uranium Enrichment Center (IUEC) at the Angarsk Electrolytic Chemical Combine (AEKhK). The office started operating on 20 March 2006. IAEA personnel first visited Angarsk 20-22 March 2007. Moreover, a bilateral working group was set up to coordinate the implementation of IAEA safeguards at the IUEC. Application of IAEA safeguards to AEKhK is a prerequisite for participation and potential nuclear cooperation by countries such as Australia, Canada, and Japan.

-Cristina Hansell Chuen and Elena Sokova, "Nuclear Power Broker," Bulletin of the Atomic Scientists, Vol. 63 (5), 2007, 50-54; "Angarsk International Uranium Enrichment Center Chronology," 2007, PIR-Center, www.pircenter.org.

27 April 2007

PUTIN SIGNS LAW CREATING ATOMENERGOPROM

On 27 April 2007 Russian president Vladimir Putin signed a decree (No. 566) "On restructuring the nuclear energy industry complex of the Russian Federation", that established the joint stock company Atomenergoprom. The company will be fully state-owned and incorporate Tenex (Tekhsnabeksport), TVEL, Rosenergoatom, among others.

-"Angarsk International Uranium Enrichment Center Chronology," 2007, PIR-Center, www.pircenter.org; Gaukhar Mukhatzhanova, "Russian Nuclear Industry Reforms: Consolidation and Expansion," CNS research story, May 22, 2007, <http://cns.miis.edu>.

10 May 2007

RUSSIA AND KAZAKHSTAN SIGN BILATERAL AGREEMENT ON CREATION OF INTERNATIONAL URANIUM ENRICHMENT CENTER

On 10 May 2007 Rosatom head Sergey Kiriyenko and Kazakhstan's minister of natural resources Baktykozha Izmukhambetov signed a bilateral agreement, making Kazakhstan Russia's first partner in the International Uranium Enrichment Center (IUEC) at Angarsk. [1,2] A board of directors was put in place for the joint venture between Tekhsnabeksport and Kazatomprom, and a director general was elected. [3, 4, 5] According to Kiriyenko, five to seven countries have expressed their interest in joining the IUEC, most notably Armenia and Ukraine.[2]

[1] Cristina Hansell Chuen and Elena Sokova, "Nuclear Power Broker," Bulletin of the Atomic Scientists, Vol. 63 (5), 2007, 50-54, www.nti.org.

[2] "Angarsk International Uranium Enrichment Center Chronology," 2007, PIR-Center, www.pircenter.org.

[3] Anya Loukianova, "The International Uranium Enrichment Center at Angarsk: A Step Towards Assured Fuel Supply?" NTI Issue Brief, October 2007, www.pircenter.org.

[4] "Russia says Siberian uranium enrichment center open to all," RIA Novosti, October 25, 2007, <http://en.rian.ru>.

[5] Alena Kornysheva, "Rossiyskiy uran budet bogache: Rosatom narashchivayet bogatitelnyye moshchnosti," Kommersant Daily, vol. 108, June 23, 2007.

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19 June 2007

UKRAINE CONSIDERS PARTICIPATION IN IUEC

On 19 June 2007 a Ukrainian delegation headed by Fuel and Energy Deputy Minister Yuriy Nedashkovskiy visited Angarsk to discuss Ukraine's participation in the establishment of the International Uranium Enrichment Center (IUEC). The Ukrainian delegation confirmed its intention to prepare documents that would pave the way for Ukraine's participation within the next three to four months. Rosatom officials agreed to work on resolving all practical issues of Ukraine joining the IUEC as an equal partner with Kazakhstan.

-Alena Kornysheva, "Rossiyskiy uran budet bogache: Rosatom narashchivayet bogatitelnyye moshchnosti," Kommersant Daily, vol. 108, June 23, 2007; "Angarsk International Uranium Enrichment Center Chronology," 2007, PIR-Center, www.pircenter.org.

22 July 2007

KIRIYENKO CONFIRMS HALT TO EUROPEAN URANIUM TAILINGS IMPORT

On 23 June 2007, Rosatom head Sergey Kiriyenko officially confirmed that Rosatom had decided not to renew agreements with Urenco and Eurodif on the import of depleted uranium tailings from Europe for re-enrichment [see entry for 31 July 2006]. Rosatom officials indicated that the policy revision occurred because of increased demand for Russian enrichment services worldwide. While the re-enrichment of European tailings had made sense during the 1990s, when enrichment capacities far exceeded demand for enrichment services and brought the industry \$200 million per year, this is no longer the case. A representative of Tekhsnabeksport confirmed this policy change in November 2007, stating that although the tailings could eventually be burned in fast breeder reactors, their storage was not publicly acceptable or economically feasible.

-Alena Kornysheva, "Rossiyskiy uran budet bogache: Rosatom narashchivayet obogatitelnyye moshchnosti," Kommersant, 23 June 2007, www.kommersant.ru, "Rossiia perestayet obogashchat 'khvosty'," Vestnik Atomproma, vol. 4, July 2007, p. 5; Pearl Marshall, "Russia sees closed fuel cycle as way to maximize energy resources," NuclearFuel, 19 November 2007 in Lexis-Nexis Academic Universe, <http://web.lexis-nexis.com>.

August 2007

INTEREST IN IUEC ON THE RISE, IAEA SUPPORTIVE OF INITIATIVE

On 2 August 2007 a meeting of the Council of the Eurasian Economic Union on cooperation in the field of nuclear energy for peaceful purposes was held at Angarsk. Deputy head of Rosatom Nikolay Spasskiy was elected chairman of the Council, and Timur Zhantikin, head of the nuclear energy committee of Kazakhstan's Ministry of natural resources, was elected vice-chairman. Apart from Kazakhstan, Armenia, Mongolia, South Korea, Ukraine, and Uzbekistan have reportedly expressed interest in International Uranium Enrichment Center (IUEC) partnerships.

On 21 August 2007, IAEA Director General Mohamed ElBaradei applauded the Russian IUEC initiative as a confidence-building measure and a possible way to assure supply of enriched uranium.

-"Angarsk International Uranium Enrichment Center Chronology," 2007, PIR-Center, www.pircenter.org; Anya Loukianova, "The International Uranium Enrichment Center at Angarsk: A Step Towards Assured Fuel Supply?" NTI Issue Brief, October 2007, www.nti.org.

September 2007

ANGARSK IUEC OFFICIALLY REGISTERED, RUSSIA TO ESTABLISH LEU FUEL BANK

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On 5 September 2007 the joint stock company International Uranium Enrichment Center (IUEC) was registered as a joint venture with 10% stake owned by Kazatomprom and 90% owned by Tekhsnabeksport. Tekhsnabeksport expects to eventually own 51% of stake in the IUEC as the venture attracts additional participants.[1,2] On 18 September 2007, Rosatom head Kiriyenko announced that Russia would fund and move forward with the creation of an International Atomic Energy Agency-controlled low-enriched uranium fuel (LEU) bank at the Angarsk site. [1, 3] The LEU fuel bank would store up to two 1000 MW reactor loads, and be provided to recipient states upon IAEA request.[1,4,5]

[1] Anya Loukianova, "The International Uranium Enrichment Center at Angarsk: A Step Towards Assured Fuel Supply?" NTI Issue Brief, October 2007," www.nti.org.

[2] "Nuclear Power in Russia," Australian Uranium Association, Uranium Information Center, briefing paper # 62, December 2007, www.uic.com.au.

[3] For fuel bank offer made by the Nuclear Threat Initiative, see "Nuclear Threat Initiative Commits \$50 Million to Create IAEA Nuclear Fuel Bank," NTI press release, 19 September 2006, www.nti.org.

[4] "Angarsk International Uranium Enrichment Center Chronology," 2007, PIR-Center.

[5] United Nations Information Circular (INFCIRC) 708, "Communication received from the Resident Representative of the Russian Federation to the IAEA on the Establishment, Structure and Operation of the International Uranium Enrichment Centre," 8 June 2007, www.iaea.org.

3 October 2007

RUSSIA RATIFIES ADDITIONAL PROTOCOL WITH IAEA

On 3 October 2007 Russian president Putin signed a law on the ratification of the Additional Protocol to the Treaty on the Non-Proliferation of Nuclear Weapons with the IAEA. The law was adopted by the Duma, Russia's lower house of parliament, on 14 September and approved by the Federal Council, the upper house, on 19 September 2007. Russia had signed the document on 22 March 2000.

- "Putin signs law on ratification of additional protocol with IAEA," RIA Novosti, 3 October 2007, <http://en.rian.ru>.

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2006

25 January 2006

PUTIN PROPOSES CREATION OF INTERNATIONAL URANIUM ENRICHMENT CENTER

During a 25 January 2006 meeting of the Council of the Eurasian Economic Union, which included representatives of former Soviet republics Armenia, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Tajikistan, Uzbekistan, and Ukraine, Russian president Vladimir Putin proposed the creation of an International Uranium Enrichment Center (IUEC). According to Putin, the IUEC would be a part of a network of international nuclear fuel cycle centers operating under IAEA safeguards, dubbed "Global Nuclear Power Infrastructure" (GNPI). The GNPI centers would provide enrichment (and potentially reprocessing) services on a non-discriminatory basis to any country willing to develop nuclear energy, while ensuring the nonproliferation of nuclear weapons.

-Cristina Hansell Chuen and Elena Sokova, "Nuclear Power Broker," Bulletin of the Atomic Scientists, Vol. 63 (5),

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2007, 50-54; S.V. Ruchkin and Vladimir Loginov, "Securing the Nuclear Fuel Cycle: What Next?" IAEA Bulletin, Vol. 48 (1), 2006, www.iaea.org; Anya Loukianova, "The International Uranium Enrichment Center at Angarsk: A Step Towards Assured Fuel Supply?" NTI Issue Brief, www.nti.org, October 2007.

25 January 2006

ANGARSK EXEMPTED FROM "SPECIAL REGIME" LIST TO MAKE IUEC POSSIBLE

The Russian government passed legislative measures to remove the Angarsk Electrolytic Chemical Combine (AEKhK) from its list of "special regime facilities" in order to make the International Uranium Enrichment Center (IUEC) project possible at the site. The fuel cycle facility is located in the city of Angarsk, home to about 270,000 near Lake Baikal in southeastern Siberia. AEKhK was created to enrich uranium for the Soviet nuclear program and was, therefore, a restricted site closed to all foreign visitors.

-Cristina Hansell Chuen and Elena Sokova, "Nuclear Power Broker," Bulletin of the Atomic Scientists, Vol. 63 (5), 2007, 50-54; "Angarsk International Uranium Enrichment Center Chronology," 2007, PIR-Center, www.pircenter.org; Eric Hundman, "Nuclear Fuel Supply Proposals Aimed at Weakness in Nonproliferation Regime," World Politics Watch, December 21, 2006, www.cdi.org.

2 February 2006

FOSSIL FUEL POWER PLANT AT SOSNOVOBORSK, NEAR ZHELEZNOGORSK, TO BE BUILT BY 2010

Sergey Kiriyyenko, head of the Russian Federal Atomic Energy Agency (Rosatom), and Krasnoyarsk Kray Governor Aleksandr Khloponin have agreed to accelerate construction of the heat and electric power station at Sosnovoborsk from 67 to 48 months, Kommersant reported on 2 February 2006. The power plant will provide heat and electricity currently supplied by the ADE-2 plutonium-production reactor. The Sosnovoborsk power plant is being built under the auspices of the US-Russia Elimination of Weapons Grade Plutonium Production (EWGPP) program. Under this program, the United States is funding the construction of fossil fuel power plants to facilitate the shutdown of the three remaining plutonium-production reactors. Kiriyyenko said that by March 2006, Rosatom and the Krasnoyarsk administration should have the necessary documents in place to receive the funding, conduct a tender, and begin construction of the power plant. The Krasnoyarsk administration, Rosatom, and Rosenergo (the Russian Federal Energy Agency) still must resolve the issue of the future power plant ownership. This issue was the main obstacle to receiving the \$40 million of funding envisioned by the US-Russia agreement on reactor replacement. The protocol on construction was initially signed in the early 2004, when plans called for the power plant to become operational in 2007.

-Dmitriy Zakharov and Mariya Medvedeva, "Eto ekonomika absurda," Kommersant, 2 February 2006 in Integrum Techno, www.integrum.ru; "Stroitelyam Sosnovoborskoy TETs dano 48 mesyatsev," Regions.Ru, 2 February 2006 in Integrum Techno, www.integrum.ru; "Sosnovoborskuyu TETs neobkhodimo dostroit do 2010 goda — glava Rosatoma," RIA Novosti—Siberia, 2 February 2006 in Integrum Techno, www.integrum.ru.

14 February 2006

ROSATOM HEAD VISITS ZHELEZNOGORSK, SIGNS NEW AGREEMENTS, DISMISSES GKHK DIRECTOR

During a visit to Krasnoyarsk Kray on 1 February 2006, Sergey Kiriyyenko, head of the Russian Federal Atomic Energy Agency (Rosatom), ruled out the possible future privatization of the Mining and Chemical Combine (GKhK) in

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Zheleznogorsk. Commenting on the future of the closed city of Zheleznogorsk, Kiriyenko said that no major changes are expected in the next 10 years, and that the city will maintain its "closed" status. Kiriyenko sharply criticized Combine management, saying that GKKh is caught up in a "system of cross-subsidies." Two weeks later, GKKh director general Vasily Zhidkov was dismissed and chief engineer Yuriy Revenko was appointed as acting director. Rosatom and the Krasnoyarsk administration reached an agreement under which 25% of the profit GKKh makes on the storage and handling of spent nuclear fuel will be allocated to the regional budget to finance regional social and environmental programs. Kiriyenko and Krasnoyarsk governor Aleksandr Khloponin discussed the construction of a fossil fuel power plant in Sosnovoborsk and agreed to prepare the documents required to start construction by 1 March 2006. Rosatom and the kray administration also agreed that private investors would take part in the construction of a polycrystal silicon production plant in Zheleznogorsk. GKKh was previously in charge of implementing this project, but construction was halted due to a lack of funds.

-Dmitriy Zakharov and Mariya Medvedeva, "Eto ekonomika absurda," *Kommersant*, 2 February 2006 in *Integrum Techno*, www.integrum.ru;"Ugroz radiatsionnoy bezopasnosti na Gorno-khimicheskom kombinat Zheleznogorska net," *RIA Novosti*, 1 February 2006 in *Integrum Techno*, www.integrum.ru;"Glava Rosatoma provel kadrovye perestanovki na dvukh vedushchikh predpriyatiyakh otrasli," *RIA Novosti*, 14 February 2006 in *Integrum Techno*, www.integrum.ru; "Plata kontserna Rosenergoatom za khraneniye OYaT dolzhna byt uvelichena — Kiriyenko," *RIA Novosti*, 1 February 2006 in *Integrum Techno*, www.integrum.ru.

March 2006

ANGARSK PROPOSED AS INTERNATIONAL URANIUM ENRICHMENT CENTER SITE

In March 2006, Rosatom officials proposed the Angarsk Electrolysis Chemical Combine as a site for the first International Uranium Enrichment Center (IUEC). The facility has an annual enrichment capacity of two million separative work units (SWU) — a number that Russia plans to increase fourfold by 2012. Angarsk is one of four uranium enrichment plants in Russia, but is the one least integrated into the former Soviet nuclear weapons complex. Rosatom initiated the creation of the management and production structure of the IUEC.

-Cristina Hansell Chuen and Elena Sokova, "Nuclear Power Broker," *Bulletin of the Atomic Scientists*, Vol. 63 (5), 2007, 50-54;Alena Kornysheva, "Rossiyskiy uran budet bogache: Rosatom narashchivayet bogatitelnyye moshchnosti," *Kommersant Daily*, vol. 108, 23 June, 2007, p. 5;Anyu Loukianova, "The International Uranium Enrichment Center at Angarsk: A Step Towards Assured Fuel Supply?" *NTI Issue Brief*, October 2007, www.nti.org.

15 March 2006

MAYAK DIRECTOR DISMISSED, CHARGED FOR POLLUTION

For the first time in the history of Russia's nuclear industry, the head of a nuclear facility has been charged with polluting the environment. The Office of the Prosecutor General has brought charges against Vitaliy Sadovnikov, Director General of the Mayak Production Association, which includes the Mayak Chemical Combine and the Chelyabinsk-60 Research Facility. On 28 November 2005, the Chelyabinsk regional court denied Sadovnikov parliamentary immunity, thus making it possible to prosecute him personally for violations of environmental legislation. Previously, Sadovnikov was immune to prosecution as a member of the Chelyabinsk regional legislature. Mayak's director general is accused of violating several environmental protection regulations through the ongoing discharge of Mayak radioactive waste into the Techa river. According to Chelyabinsk prosecutor on

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environmental issues Anatoliy Yefimov, over 60 million cubic meters of industrial waste were discharged by Mayak into the Techa in 2004 alone. The Office of the Prosecutor General launched an investigation into the discharges in April 2005 and opened a criminal case in September 2005. Investigators say the contamination occurred because of the poor condition of the river dam on the territory of Mayak, and that Director General Sadovnikov should be held personally liable for not taking care of repairing the dam. Sadovnikov, his lawyer, and Chelyabinsk governor Petr Sumin disagreed with the prosecution, claiming that the responsibility lied with the Russian Federal Atomic Energy Agency (Rosatom), which has not provided enough funding for environmental programs. Reportedly, Rosatom only allocated 45 million (nearly \$1.6 million as of November 2005) of the 500 million rubles (almost \$17.4 million) needed for the environmental rehabilitation of the Techa. During his visit to Ozersk in December 2005, newly appointed Rosatom head Sergey Kiriyyenko said that Sadovnikov could not be held liable for Mayak activities during the past 60 years, and that they are the responsibility of the government and not Mayak alone. He also said that Rosatom would allocate 250 million rubles (about \$8.7 million as of December 2005) to Mayak for environmental programs in 2006. However, on 15 March 2006, Kiriyyenko dismissed Sadovnikov on the basis of decisions made by the General Prosecutor's Office and the court.

- "Gendirektor proizvodstvennogo obedineniya 'Mayak' Vitaliy Sadovnikov otstranen ot zanimayemoy dolzhnosti," RIA-Novosti—Ural, 15 March 2006, in Integrum Techno, www.integrum.ru; "Gendirektor 'Mayaka' lishilsya immuniteta," Kommersant, 29 November 2005 in Integrum Techno, www.integrum.ru; Mikhail Vyugin, "Taran dlya prokurora," Vremya novostey, 22 December 2005 in Integrum Techno, www.integrum.ru; "Nichego strashnogo v dele Sadovnikova net," Kommersant, 14 December 2005 in Integrum Techno, www.integrum.ru.

11 May 2006

MAYAK DIRECTOR FREED BY AMNESTY

On 11 May 2006, the Chelyabinsk regional court freed Vitaliy Sadovnikov, Director General of the Mayak Production Association, in accordance with a general amnesty adopted by the State Duma. The Chelyabinsk court also repealed the decision to dismiss Sadovnikov from his post.[1] The question of whether or not Sadovnikov might be reinstated as Mayak director general are reportedly to be decided by the court and the Russian Federal Atomic Energy Agency. However, the Urals Office of the Prosecutor General noted that in his request for amnesty, Sadovnikov did not deny his guilt.[2]

- "Vitaliy Sadovnikov vyshel na svobodu po amnistiyyi," Regions.ru, 11 May 2006 in Integrum Techno, www.integrum.ru; "Genprokuratura UrFO napravila protest na postanovleniye chelyabinskogo suda po delu Sadovnikova," Regions.ru, 12 May 2006 in Integrum Techno, www.integrum.ru.

12 May 2006

FUTURE OF PLUTONIUM DISPOSITION IN DOUBT AFTER HOUSE PANEL CUTS FUNDING

On 12 May 2006, the U.S. House of Representatives voted to allow the United States to separate its plutonium disposition program from Russia's and continue plutonium disposition work at the Savannah River Site. According to Senator Pete Domenici, the decision to decouple the U.S. and Russian MOX efforts is based on liability disputes with Russia and delays securing international funding for the Russian program. Later, however, the two sides brokered a compromise on liability issues, and on 15 September 2006, the United States and Russia signed a liability agreement.

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In the event that House committee language stands, the future of the disposition agreement is dubious. The House bill would change the disposition path in the United States for the plutonium to immobilization, with \$111 million provided for NNSA to increase its immobilization work at Savannah River; the bill would also zero out funding for the Russian MOX program. The 2000 U.S.-Russian Plutonium Disposition Agreement commits each side to the disposition of 34 metric tons of surplus plutonium from its weapons stockpile. According to the agreement and a congressional directive, the two programs are supposed to proceed in parallel.

According to House staff, because of the opposition in both the U.S. Congress and the U.S. Administration to the House committee's action, the most likely result during Fiscal Year 2007 is a compromise that would allow the U.S. MOX program to go forward in some manner.

-Josh Gelinas, "MOX money remains in limbo; House-Senate compromise could restore funds," Augusta Chronicle, 22 May 2006;"House Authorizers OK Proposal to Decouple U.S., Russian MOX Programs," Press Release, 11 May 2006, Strengthening the Global Partnership, www.sgpproject.org;"Future of Pu Disposition in Doubt After House Panel Cuts Funding: Compromise Most Likely Result, but Frustration Over Delays at Fever Pitch," Nuclear Weapons & Materials Monitor, www.exchangemonitor.com, Vol.10, No. 22, 22 May 2006.

5 June 2006

NO NEW HEU DEAL

On 5 June 2006 at the World Nuclear Fuel Market meeting in Seattle, Vadim Mikerin of Tekhsnabeksport announced that the Russian Federation has no intention of extending the HEU-LEU Program after 2013. Mikerin declined to provide an official answer to whether Russia would blend down HEU for its own use, however he did point out that the HEU deal is "not economical" for Russia. Recent statements by Russian officials suggest that all HEU down-blending will be terminated after 2013. The remaining HEU stocks will be used to maintain Russia's nuclear arsenal. The freed up enrichment capacity currently used by the HEU-LEU Program will be used to increase commercial sales of enriched uranium. Mikerin estimates that the implementation of the HEU-LEU Program accounts for 24% of Russian enrichment capacity. When asked if Russia would consider continuing the HEU-LEU deal if the US or other governments provided a subsidy, Mikerin said it was still too early to tell.

-"Russia: No new HEU deal," FreshFuel, Vol. 22, No. 865, 12 June 2006. p.1; Michael Knapik, "Tenex's Mikerin says US-Russia HEU deal won't run beyond 2013," NuclearFuel, Vol. 31, No. 13, 19 June 2006, pp. 1, 20-22;"Russian HEU-Here Today, Gone Tomorrow?," FreshFuel, Vol. 22, No. 867, 26 June 2006. pp.1-2.

13 July 2006

U.S., RUSSIA REAFFIRM COMMITMENT TO DISPOSING OF WEAPON-GRADE PLUTONIUM

On 13 July 2006, Sergey Kiriyyenko, Director of Russia's Federal Atomic Energy Agency, and US Energy Secretary Samuel W. Bodman signed a joint statement reaffirming their commitment to dispose of 34 metric tons of excess weapon-grade plutonium by irradiation in nuclear reactors. According to the joint statement, Russia plans to begin early disposition of plutonium using the BN-600 fast reactor in 2010-2012. The United States plans to begin construction of a mixed oxide (MOX) fuel fabrication facility in South Carolina in fall 2006.

-"US and Russia Reaffirm Commitment to Disposing of Weapon-Grade Plutonium," US Department of Energy, Office of Public Affairs, Washington, D.C., 13 July 2006.

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15-17 July 2006

RUSSIA PROMOTES ASSURED SUPPLY INITIATIVE AT G-8 SUMMIT

Russian President Vladimir Putin unveiled Russia's International Uranium Enrichment Center (IUEC) concept to international audiences at the July 2006 Group of Eight (G-8) summit in St. Petersburg. The IUEC initiative gained steam once Moscow presented it as a potential facility that would go in hand with the International Atomic Energy Agency's multilateral nuclear approaches efforts, following the example of President Bush's Global Nuclear Energy Partnership that had been announced earlier in 2006. Moscow's nuclear fuel enrichment proposal, which had initially been designed to diffuse the Iranian nuclear crisis, gradually expanded into a multilateral assured fuel supply enterprise. On 24 July, Nikolay Spasskiy was appointed deputy head of Rosatom and put in charge of coordinating the creation of the IUEC at Angarsk.

-Cristina Hansell Chuen and Elena Sokova, "Nuclear Power Broker," *Bulletin of the Atomic Scientists*, Vol. 63 (5), 2007, 50-54; Anya Loukianova, "The International Uranium Enrichment Center at Angarsk: A Step Towards Assured Fuel Supply?" *NTI Issue Brief*, October 2007, www.nti.org; "Angarsk International Uranium Enrichment Center Chronology," 2007, *PIR Center*, www.pircenter.org.

31 July 2006

RUSSIA MAY HALT IMPORT OF EUROPEAN URANIUM TAILS

Russian nuclear industry officials have signaled that contracts with Germany's Urenco and France's Areva for the export of depleted uranium tailings to Russia—contracts set to expire in 2009 and 2010—are not likely to be renewed. Since the late 1990s, Urenco and Areva's subsidiary Eurodif has been sending 10-15,000 metric tons (t) of uranium tails annually to Russia, totaling over 100,000t. [1] The tails were shipped in gaseous form (DUF6) to Tekhsnabeksport in St. Petersburg, which transferred them to enrichment facilities at Novouralsk, Seversk, and Angarsk for re-enrichment. [2] Russian re-enrichment services came at competitive prices (18% of the market price for enrichment services) and relieved European companies from accumulating their own depleted uranium stockpiles.[2] Only a small fraction, however, have been re-enriched in Russia, e.g. used to blend down highly enriched uranium (HEU) to make reactor-grade fuel (for more information, please see *Russia: Overview of the US-Russian HEU-LEU Program*).[1, 2]

The rest, so-called secondary or stripped tails, which contained less than 0.1% U-235, remain in Russia for storage, allegedly for use in future fast reactors. By 2003 Russia had reportedly accumulated over 545,000t of depleted uranium on its territory, including material of domestic origin.[1] Russian officials have stated that existing depleted uranium storage facilities in Russia are full, and the construction of new ones would be prohibitively expensive.[1] In addition, storage of these tails poses chemical risks due to their gaseous form. To reduce these risks, Areva signed an agreement with Russia in 2005 to transfer deconversion technology to Zheleznogorsk, Siberia. The first containers of equipment left Pierrelatte on 27 March 2007. Areva staff will reportedly remain on the Russian site to supervise assembly and testing of the equipment until March 2009.[3] The Russian plant will be "a copy" of Areva's deconversion plant at Pierrelatte, and will allow Russia to store the stripped tails in a more stable form (U3O8).[3]

Although importing tails is currently a lucrative business for Rosatom (estimates put the gain at \$52-200 million), the company has come under pressure from environmental groups charging that the import of thousands of tons

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of stripped uranium tails per year breaks Russian law, which forbids the import and storage of foreign radioactive waste. [1, 2] Both Russia and its Western partners argue that uranium tails are not waste, but a valuable byproduct of the nuclear industry. [2] The German Federal Economic and Export Control Agency (BAFA), for example, justified licensing tail shipments in 1997 by emphasizing that "re-enrichment in Russia is not associated with any illegal disposal of residual [nuclear] materials, does not violate any international regulations, and that the storage of the re-enriched tails at the Russian enrichment plant sites conforms with international practice ... and meets international standards." [2] According to Sergey Ruchkin, Rosatom and Tekhsnabeksport (Tenex) representative to the World Nuclear Association in London, Russia considers uranium tails as a potential energy source, rather than waste, which will be valuable in the establishment of a closed nuclear fuel cycle. [5]

Another reason for Rosatom canceling its current agreements may be a shift to more direct sales of enrichment services and LEU to utilities, especially given the new capacities becoming available at Angarsk. [1, 4] Some experts believe that increasing demand for enrichment services and rising prices for natural uranium may affect the profitability of stripping uranium. [2,3]

[1] Ann MacLachlan and Michael Knapik, "Russia to stop commercial tails re-enrichment," NuclearFuel, 31 July 2006; in Lexis-Nexis Academic Universe, <http://web.lexis-nexis.com>.

[2] Mark Hibbs and Ann MacLachlan, "Russian group aims to sue Urenco, claims tails exports illegal," NuclearFuel, 20 November 2006; in Lexis-Nexis Academic Universe, <http://web.lexis-nexis.com>.

[3] Ann MacLachlan, "Areva transferring technology for DUF6 conversion to Russia, UK," NuclearFuel, 7 May 2007; in Lexis-Nexis Academic Universe, <http://web.lexis-nexis.com>.

[4] Alena Kornysheva, "Rossiyskiy uran budet bogache: Rosatom narashchivayet obogatitelnyye moshchnosti," Kommersant, 23 June 2007, www.kommersant.ru.

[5] Pearl Marshall, "Russia sees closed fuel cycle as way to maximize energy resources," NuclearFuel, 19 November 2007; in Lexis-Nexis Academic Universe, <http://web.lexis-nexis.com>.

15 September 2006

U.S. AND RUSSIA SIGN PLUTONIUM DISPOSITION PROTOCOL

On 15 September 2006, U.S. Under Secretary of State Robert Joseph and Russian Deputy Foreign Minister Sergei Kislyak signed a liability agreement that clears a legal hurdle for the U.S.-Russian Plutonium Disposition Program. Under the original Cooperative Threat Reduction program initiated in 1992, Russia bore complete liability for anything that went wrong. In 1999, Russia would not agree to extend the agreement without a liability exception for intentional wrongdoing. Under the new protocol's limited exception, Russia would not be liable for damages resulting from deliberate wrongdoing on the part of a U.S. employee or contractor. Under the Plutonium Disposition Program, both Russia and the United States aim to eliminate a total of 68 metric tons (about 150,000 pounds) of surplus weapon-grade plutonium by converting it to mixed oxide (MOX) fuel for use in nuclear reactors. -"U.S. and Russia Sign Liability Protocol," U.S. Department of Energy, Office of Public Affairs, Washington, DC, 15 September 2006; "United States, Russia Sign New Liability Protocol: Program seeks to eliminate plutonium equivalent of 16,000 nuclear weapons," U.S. State Department, <http://usinfo.state.gov>, 19 September 2006.

18-22 September 2006

RUSSIA INFORMS IAEA ABOUT CREATION OF INTERNATIONAL URANIUM ENRICHMENT CENTER

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During the IAEA General Conference in Vienna, Austria, Russia officially informed the Agency about the creation of the International Uranium Enrichment Center (IUEC) on the site of the Angarsk Electrochemical Combine.[1] Rosatom officials indicated that the IUEC would be run as a joint stock company, with co-ownership and co-management by member states.[2] Membership would be open to any country interested in developing a national nuclear power program without its own enrichment program, as long as the respective country remains in compliance with nuclear nonproliferation requirements.[2] While IUEC participants would receive dividends resulting from IAEA safeguarded enrichment operations, the enrichment technology itself would remain a "black box." [3,4,5] On 2 October, 2006, Rosatom deputy head Nikolay Spasskiy was quoted as saying that it would take four to five years from the time the necessary legislation was signed until the IUEC would be fully implemented. [3,6]

[1] "Angarsk International Uranium Enrichment Center Chronology," 2007, PIR-Center, www.pircenter.org.

[2] Cristina Hansell Chuen and Elena Sokova, "Nuclear Power Broker," *Bulletin of the Atomic Scientists*, Vol. 63 (5), 2007, 50-54.

[3] Anya Loukianova, "The International Uranium Enrichment Center at Angarsk: A Step Towards Assured Fuel Supply?" NTI Issue Brief, October 2007, www.nti.org.

[4] United Nations Information Circular (INFCIRC) 708, "Communication received from the Resident Representative of the Russian Federation to the IAEA on the Establishment, Structure and Operation of the International Uranium Enrichment Centre," 8 June, 2007, www.iaea.org.

[5] S.V. Ruchkin and Vladimir Loginov, "Securing the Nuclear Fuel Cycle: What Next?" *IAEA Bulletin*, Vol. 48 (1), 2006, www.iaea.org.

[6] "Sozdaniye mezhdunarodnogo yadernogo tsentra v Angarske oboidetsya v neskol'ko milliardov dollarov," (Creation of international nuclear center in Angarks will cost several billion dollars) *IA Regnum*, 2 October, 2006.

19 September 2006

RUSSIAN PLANS FOR INTERNATIONAL URANIUM ENRICHMENT CENTER IN ANGARSK

At the G8 summit in St. Petersburg in July 2006, Sergey Kiriyenko, head of the Federal Atomic Energy Agency, announced that Angarsk would become the site of the first international uranium enrichment center.[1,2,3,4] The establishment of this center is part of the US-Russian led initiative to ensure "non-discriminatory access" to nuclear energy for countries without sensitive fuel cycle technology, as an incentive for these countries not to build domestic capacities.[1,2,4,5] In an address to the World Nuclear Association's annual symposium, held 6-8 September in London, Kiriyenko proposed that executive agents from each participating government would sit on the board of the planned joint company.[1,3] According to Kiriyenko, the joint company would manage two divisions at the international uranium enrichment center at Angarsk—production and enriched uranium product storage.[1] Kiriyenko indicated that the Angarsk center must be multifaceted and multinational, as well as bring economic benefits to all of its participants.[6]

Although Kiriyenko has said that the joint company is to be monitored by the International Atomic Energy Agency (IAEA), one Russian official noted that future negotiations would decide exactly how IAEA safeguards would be applied to the international center.[1,3] On 19 September at the IAEA General Conference, Kiriyenko indicated that

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the only restriction at the Angarsk uranium enrichment center will be the denial of access to uranium enrichment technologies.[6]

Currently, Russian law forbids private ownership of any nuclear materials or facilities—therefore, separating Russia's commercial and defense nuclear sectors is, according to Kiriyyenko, a top priority for his agency, the first step of which is to amend relevant legislation.[1,4,5] Kiriyyenko hopes that the legal basis for establishing the international uranium enrichment center will be in place by the end of 2006.[1,4,6]

[1] Ann MacLachlan, "Russia moving to set up international SWU center," Nuclear Fuel online edition, www.platts.com, Vol. 31, No. 19, 11 September 2006.

[2] Alexei Breus, "Russia plans complete fuel industry with Kazakhstan," Nuclear Fuel online edition, www.platts.com, Vol. 31, No. 16, 31 July 2006.

[3] "Russia to Ensure Conditions for International Uranium Enrichment Center," Interfax, 7 September 2006.

[4] Veronika Romanenkova, "Russian-US Nuclear Initiatives to Begin with Int'l Center in Siberia," ITAR-TASS, 15 July 2006.

[5] "Intl. nuclear fuel centers would offer unbiased access-Putin," RIA Novosti online edition, www.rian.ru, 18 September 2006.

[6] "Rssn [sic] nuclear chief says int'l uranium enrichment center to be set up in Siberia," ITAR-TASS, 19 September 2006.

9 October 2006

FY07 DEFENSE BILL OFFERS TENTATIVE SUPPORT FOR PU DISPOSITION

The U.S.-Russian plutonium disposition program received an endorsement from Congress in the Fiscal Year 2007 Defense Authorization bill passed in late September 2006. The Defense Authorization bill provides a total of \$578.2 million for the fissile materials disposition account, short of the \$638 million requested by the U.S. Administration but substantially more than the \$453 million recommended in the House version of the bill. In addition, the bill authorizes \$264.4 million for construction of the mixed-oxide (MOX) facility at the Savannah River Site (SRS), \$25.1 million less than the administration's request, but more than the House version of the bill, which would have decreased funding for MOX facility construction by \$115 million. While none of the \$34.7 million requested by the administration for the Russian portion of the program was authorized in the FY07 Defense Authorization bill, it does allow the DOE to spend up to \$20 million of existing balances to keep work on track.

Under the FY07 Defense Authorization bill language, the Secretary of Energy must also certify that DOE intends to use the MOX facility for US plutonium disposition, regardless of the fate of an analogous project in Russia. The language in the FY07 Defense Authorization bill reverses a long-standing congressional directive that the U.S. and Russian programs should move in rough parallel as originally stipulated in Article II of the 2000 U.S.-Russian Plutonium Disposition Agreement. While the authorization is being seen as a substantial expression of support for the joint U.S.-Russian plutonium disposition program, the future of the program remains uncertain. In the near term, until the FY07 Energy and Water Appropriations bill is finalized no progress is expected on the construction of the SRS MOX facility. Action on the FY07 Energy and Water Appropriations bill is expected early 2007.

- "FY07 Defense Bill Offers Tentative Support for Pu Disposition," Nuclear Weapons & Materials Monitor, Vol. 10, No. 40, 9 October, 2006; "MOX Program on Hold," Nuclear Weapons & Materials Monitor, Vol. 10, No. 39, 2

Related content is available on the website for the Nuclear Threat Initiative, www.nti.org.



October, 2006; Daniel Horning, "Defense bill backs MOX program, with conditions on DOE spending," Nuclear Fuel, Vol. 31, No. 21, 9 October 2006.

28 November 2006

ANGARSK EXEMPTED FROM "SPECIAL REGIME" LIST TO MAKE IUEC POSSIBLE

The Russian government passed legislative measures to remove the Angarsk Electrolytic Chemical Combine (AEKhK) from its list of "special regime facilities" in order to make the International Uranium Enrichment Center (IUEC) project possible at the site. The fuel cycle facility is located in the city of Angarsk, home to about 270,000 near Lake Baikal in southeastern Siberia. AEKhK was created to enrich uranium for the Soviet nuclear program and was, therefore, a restricted site closed to all foreign visitors.

-Cristina Hansell Chuen and Elena Sokova, "Nuclear Power Broker," Bulletin of the Atomic Scientists, Vol. 63 (5), 2007, 50-54; "Angarsk International Uranium Enrichment Center Chronology," 2007, PIR-Center, www.pircenter.org; Eric Hundman, "Nuclear Fuel Supply Proposals Aimed at Weakness in Nonproliferation Regime," World Politics Watch, December 21, 2006, www.cdi.org.

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2005

30 March 2005

U.S., CANADA SIGN MEMORANDUM OF UNDERSTANDING ON FUNDING RUSSIAN PLUTONIUM REACTOR SHUT-DOWN

Canadian Foreign Affairs Minister Pierre Pettigrew and U.S. Secretary of Energy Samuel Bodman announced the signing of a memorandum of understanding (MOU) to assist with the shut-down of one of the final operating weapons-grade plutonium producing reactors in Russia. According to the MOU, Canada will contribute \$9 million Canadian (about US\$7 million as of 30 March 2005) to the U.S. Department of Energy's Elimination of Weapons-Grade Plutonium Production (EWGPP) program. The contribution is part of Canada's \$1 billion pledge under the G8 Global Partnership. The goal of the EWGPP program is to permanently shut down three Russian plutonium-producing reactors, which provide heat and electricity to nearby communities, and replace them with fossil fuel plants.

-"Canada and the United States Cooperate to Shut Down One of the Last Weapons-Grade Plutonium Production Reactors in Russia," Canada Foreign Affairs, www.international.gc.ca.

18 April 2005

U.S., RUSSIA SEEK FUNDING TO SHUT DOWN PLUTONIUM REACTORS

As Arms Control Today reported on 18 April 2005, the U.S. Department of Energy is seeking contributions from the international community to fund the shutdown of Russia's three remaining nuclear reactors which produce weapons-grade plutonium. These reactors are located in the cities of Seversk and Zheleznogorsk. In 2002, the Department of Energy estimated the cost of the project, known as the Elimination of Weapons-Grade Plutonium Production program, at no more than \$470 million. A revised estimate, taking into account Russian inflation, rising

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labor costs, and contractor fees totals nearly \$1 billion. In 2001, U.S. and Russian officials determined that eliminating the production of weapons-grade plutonium in the three reactors would be best achieved by replacing them with fossil-fuel plants that can provide heat and electricity to near by communities. The United States expects the two reactors in Seversk to be shut down by December 2008. The refurbishing of a fossil fuel plant in Seversk is scheduled to be more than 60 percent complete by the end of fiscal year 2006. The Energy Department requested \$132 million for the program in fiscal year 2006, which is a 200 percent increase over the 2005 allocation. Shutting down the third plutonium-producing reactor at Zheleznogorsk will require building an entirely new fossil fuel plant. That project will require \$100 million in international donations if it is to meet its 2011 target completion date. So far the United Kingdom has pledged \$20 million and Canada has offered \$7 million towards construction of the replacement power sources. In mid-February 2005, a two-day conference was held in Switzerland to solicit international funding for projects outside of the existing U.S.-Russia construction agreement to protect and remediate the environment around the reactor sites and create new business enterprises and jobs for the workforce of highly skilled scientists and technicians that will be displaced when the reactors shut down. The conference was attended by 11 countries, the European Commission, and the International Atomic Energy Agency.

-Claire Applegarth, "U.S., Russia Seek Help on Plutonium," Arms Control Today, www.armscontrol.org; National Nuclear Security Administration, Press Release, 14 February 2005, "Nations Gather to Help Nuclear Cities Shut Down Plutonium Production Reactors."

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2004

19 October 2004

RADIOACTIVE CONTAINERS FOUND IN SARATOV

Three radioactive containers were found in the Leninskiy district of the city of Saratov on 19 October 2004. According to Russian media reports, two homeless people found three cylinder-shaped stainless steel containers at a waste dump and sold them for 200 rubles to a local welder, who was involved in collecting scrap non-ferrous metal.[1,2,3] When the man started sawing open the containers, he encountered a layer of unknown metal that later turned out to be depleted uranium, and alerted the local emergency service.[4,5] Experts from the Saratov branch of Radon were called to the site. Radiation measured around the containers was 358 times above the natural background level.[1,2] According to Radon experts, one of the containers was used for the transportation of uranium, and the other two were used to store depleted uranium-238.[1,2,4] A police investigation is currently under way to establish the origin of the radioactive containers and locate the radioactive materials previously stored inside the containers.[1,5,6] The containers were placed for storage in Radon's waste depository.[1]

[1] Erik Batuyev, "Konteynery s radioaktivnym uranom obnaruzheny v tsentre Saratova," RIA Novosti-Privolzhnye, 19 October 2004; in Integrum Techno, www.integrum.com.

[2] "V Saratove naydeny tri konteynera s obedennym uranom," Interfax; in Gazeta.Ru, 19 October 2004; in Integrum Techno, www.integrum.com.

[3] Yekaterina Kutnyakova, Irina Lukoyanova, "Bomzhi propili konteynery s uranom," Komsomolskaya pravda

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online edition, 21 October 2004, www.kp.ru.

[4] "Bomzhi kak perenoschiki urana," *Russkiy kuryer*, 20 October 2004; in *Integrum Techno*, www.integrum.com.

[5] Nadezhda Andreyeva, "V garazhe nashli uranovyye bloki," *Novaya gazeta* online edition, 1 November 2004, <http://2004.novayagazeta.ru>.

[6] Andrey Kulikov, "Sdali uran v metallolom," *Trud-7* online edition, 28 October 2004.

28 October 2004

MAYAK DIRECTOR RESPONDS TO DUMA MEMBER LETTER CRITICIZING FMSF

On 7 October 2004, four members of the State Duma published an open letter to President Putin in the newspaper *Pravda*. In the letter, Army General Igor Radionov, Colonel General Leonid Ivashov, Deputy Chairman of the State Duma Security Committee Viktor Ilyukhin, and former Duma Deputy Dr. Ivan Nikitchuk questioned the safety and security of the newly built Fissile Material Storage Facility (FMSF) at PO Mayak. The facility has the capacity to store 40% of Russia's weapons-grade fissile material stockpile, or 400 metric tons of plutonium and highly enriched uranium (HEU). The letter raised questions about the large concentration of fissile materials in one location, the fact that the FMSF is built above ground instead of underground, as well as form of the uranium stored. The authors insisted that maintaining materials in metal form is dangerous because of its susceptibility to spontaneous combustion. In addition, the letter raised questions about the 1993 Megatons-to-Megawatts agreement that set out to convert 500MT of highly enriched uranium (HEU) from dismantled Russian nuclear warheads into low enriched uranium (LEU) suitable for US commercial reactors. According to the letter, 500MT made up the entirety of Russia's uranium reserves, the destruction of which made it possible for the United States to withdraw from the ABM Treaty. The letter's authors argued that the HEU deal and the building of the FMSF are "criminal acts against the Russian state." In response, Mayak Director General Vitaliy Sadovnikov wrote an open letter discrediting the evidence and the rationale behind the Duma members' concerns, saying that the FMSF is safe and that there are no other facilities in the world that meet similar safety and security standards. In a separate statement, Mayak Deputy Director Aleksandr Suslov said that the process of building the FMSF was strictly supervised by federal organs and upon completion the facility passed several federal and international inspections.

- "Gendirektor Mayaka oproverg utverzhdeniya ob uyazvimosti khranilishcha delyashchikhsya materialov," *UralOnline*, 28 October 2004 in *Integrum Techno*, www.integrum.com; I.N. Radionov, L.G. Ivashov, V.I. Ilyukhin, I.I. Nikitchuk, "Mayak mozhnet prevratitsya v neskolko Chernobiley," *Pravda*, 7 October 2004 in *Integrum Techno*, www.integrum.com; "Gendirektor PO Mayak v otkrytom pisme oprovergayet utverzhdeniya obuyazvimosti KhDM," www.nuclear.ru, 28 October 2004; Igor Urov, "Kommunisty potrebovali dokazatelstv nadezhnosti KhDM na PO Mayak, a voyennyye opasayutsya terakta," *Novyi Region (Chelyabinsk)*, 14 October 2004 in *Integrum Techno*, www.integrum.com.

17 November 2004

UNITED KINGDOM AND RUSSIA SIGNED A MOU ON THE JOINT CLOSED NUCLEAR CITIES PARTNERSHIP PROGRAM

According to the *Global Security Newswire*, on 4 November 2004, the Department of Trade and Industry of Great Britain and Rosatom signed a memorandum of understanding on the joint Closed Nuclear Cities Partnership program. The program initiated in 2002 aims to reduce proliferation of nuclear technology related materials and expertise due to the worsening of economic conditions within Russia's 10 closed cities, which will see tentatively

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15,000 job cuts in the next 5 years. The MOU addressed several important issues associated with the agreement such as an independent legal status of the program in Russia, increased political clout to overcome possible future administrative disputes and establishment of the joint steering committee that will oversee the work of the program.

-Mike Nartker, "United Kingdom, Russia Sign MOU to Improve Efforts to Redirect Former Soviet Nuclear Weapons Personnel," Global Security Newswire, 17 November 2004; in Russian American Nuclear Security Advisory Council, www.ransac.org.

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