

Appendix A: Anecdotes of Nuclear Insecurity

Security of nuclear weapons, materials, and expertise in the former Soviet Union continues to be undermined by a broad range of factors including low pay and morale for nuclear workers, guards, and military forces; widespread theft and corruption, including in the military; and inadequate resources for building, maintaining, and operating effective nuclear security and accounting systems. The list below provides descriptions of specific incidents highlighting these concerns. It is intended only to be illustrative, not definitive. Only incidents that are reasonably well confirmed – through statements by senior government officials, arrests or convictions of named individuals, and the like – are included. The list covers the period from mid-1998 (just as the financial crisis that led to the devaluation of the ruble was unfolding) to the present. Both salaries and facility finances have improved substantially since 1998, so incidents from that period describing protests over insufficient or delayed salaries no longer reflect current conditions. Nevertheless, problems remain, as the more recent incidents below attest.

■ In January 2003, General Igor Valynkin, commander of the 12th Main Directorate of the Russian Ministry of Defense, the branch responsible for guarding Russia's nuclear weapons, told visiting U.S. Department of Defense officials at a reception at Sergiyev Posad, north of Moscow, that "Chechen terrorists plan to seize some crucial military facility or nuclear warhead so as to threaten not just Russia, but the whole world." At the same session, retired Brigadier General Thomas Kuenning, the head of the of

the U.S. Defense Threat Reduction Agency's Cooperative Threat Reduction program, noted that the possibility of war with Iraq had increased the risk of nuclear terrorism within the United States, prompting U.S. nuclear weapons facilities to step up security.¹

■ On November 14, 2002, Yuri Vishnevski, head of Russia's nuclear regulatory agency Gosatomnadzor (GAN), said in a press conference that in a recent inspection of Russia's civilian nuclear facilities, his agency's inspectors had found scores of violations of security regulations, and had reported to Russia's Security Council that 6 billion rubles (some \$200 million) would be needed to bring these facilities into compliance. While Vishnevski acknowledged that security at Russian nuclear facilities had been beefed up after the September 11 attacks in the United States, he argued that further investments were needed "to modernize technical defense equipment, as well as for preparing and arming the security services at nuclear sites." Vishnevsky acknowledged that there had been thefts of nuclear material from Russian nuclear facilities, but claimed that the confirmed cases at civilian facilities regulated by GAN involved only grams of highly enriched uranium (HEU), or kilograms of low-enriched uranium (LEU), citing the fuel fabrication plants at Elektrostal and Novosibirsk as the sites of "most" of the known cases.² Vishnevsky called the press conference to criticize a proposed law on technological regulation being debated in the

¹ Sergei Ostanin, "Chechen terrorists out to lay hands on nuclear arms – military," *ITAR-TASS World Service*, January 30, 2003.

² While GAN does not regulate the Navy facilities from which some past thefts of kilograms of HEU have occurred, there have been confirmed cases of kilogram-scale thefts of HEU from facilities GAN does regulate, contrary to Vishnevski's statement.

³ See, for example, James Heintz, "Russian Official Says Nuclear Material Disappeared From Country's Plants," *Associated Press*, November 15, 2002, and "Head of Russia's Nuclear Regulatory Agency Admits Leakage of Weapons-Grade and Reactor-Grade Nuclear Materials From Atomic Facilities," *Nuclear.ru*, November 15, 2002.

Duma, which he said called for “the minimal necessary demands for security at the same time that in the whole world and in our country the demands for security in using atomic energy should be the maximum.”³

■ In late October 2002, a force of some 40 Chechen terrorists armed with automatic weapons and explosives seized more than 700 hostages at a Moscow theater, and announced their willingness to kill the hostages, and to die themselves, if their demands were not met – demonstrating the ability to Chechen terrorists to mount large-scale operations within Moscow itself.⁴ The official Russian government newspaper reported that the terrorists had planned to seize a reactor at the Kurchatov Institute in Moscow, but decided to seize the less well defended theater.⁵ Hundreds of kilograms of weapons-usable HEU are located at Kurchatov. The paper also reported that Russian military counter-intelligence had “foiled four attempts” by terrorists to gain access to Russian nuclear stockpiles – two at nuclear warhead storage sites (see discussion below), and two previously unreported incidents involving nuclear warhead transport trains. During a meeting with the European Union, Russian Interior Minister Boris Gryzlov warned that terrorists were “eager to gain access to weapons of mass destruction,” and planned to attack hazardous facilities in Russia.⁶

■ In late October 2002, Akhmed Zakayev, an envoy for Chechen leader Aslan Maskhadov, warned of future Chechen attacks on Russian targets, possibly including Russian nuclear

power plants. “We cannot guarantee that there will not be another group on Russian territory,” Akhmed Zakayev told Reuters. “Terrorist acts are possible. We cannot exclude that the next such group takes over some nuclear facility. The results may be catastrophic, not only for Russian society and for Chechen society but for the whole of Europe.”⁷

■ In October 2002, the Russian nuclear regulatory agency reported that inspectors from its Siberian branch had uncovered 37 violations of material control and accounting regulations and standards, and 32 physical protection violations in the third quarter of 2002 alone. The Siberian branch covers the massive plutonium and HEU production site at Seversk, the plutonium production plant at Zheleznogorsk, and the fuel fabrication facility at Novosibirsk. These were violations of rules, but not actual thefts or losses of nuclear material.⁸

■ Police in the Sverdlovsk region arrested three Chechens in March 2002 who were charged with attempting to sell weapons and explosives. One of the men was found to have a valid pass to the high-security closed city of Lesnoy, site of one of Russia’s largest nuclear weapons assembly and disassembly facilities. Roman Tarsukhanov could have used his pass to enter the city, and have a wide range of contacts with workers at the weapons plant, but would not have been able to enter the plant itself. A subsequent search of the arrested individuals’ apartment revealed more weapons, a remote-control bomb, and a

⁴ See, for example, “118 Hostages are Dead in Moscow Theater Raid,” *The Russia Journal*, October 27, 2002.

⁵ Vladimir Bogdanov, “Propusk K Beogolovkam Nashli U Terrorista (A Pass To Warheads Found on a Terrorist),” *Rossiiskaya Gazeta*, November 1, 2002.

⁶ “Gryzlov: boeviki hotyat poluchit’ oruzhie massovogo porazheniya (Gryzlov: Terrorists Want to Get Weapons of Mass Destruction),” *Gazeta.Ru*, November 5, 2002.

⁷ “Threat Assessment: Chechen Militants Threaten Nuclear Plant Strike,” *NTI Global Security Newswire*, October 30, 2002 (available at http://www.nti.org/d_newswire/issues/2002/10/30/1s.html as of February 7, 2003).

⁸ “Svedeniya o sluchayah nevapolneniya uslovii deistviya licenzii, a takzhe nevypolnenia polozhenii zakonov I federal’nyh norm I pravil v oblasti ispol’zovaniya atomnoi energii, prinyatyh merah vozdeistviya k narushitelyam (Evidence of Noncompliance With License Requirements, Violations of Laws and Federal Norms and Rules in the Field Of Atomic Energy Use, and Imposed Penalties),” *Gosatomnadzor (Russian Federal Ministry of Nuclear and Radioactive Safety)*, October 11, 2002 (available at <http://www.gan.ru/> as of February 7, 2003).

⁹ Sergei Avdeyev, “Chechens Gain Access to Nuclear Warheads,” *Izvestia*, March 22, 2002.

copy of Chechen president Aslan Maskhadov's book, *Honor is More Valuable Than Life*.⁹

■ In January 2002, Russian troops found what they described as late Chechen president Dzhokhar Dudayev's personal archive, which contained a detailed plan to hijack a Russian nuclear submarine.¹⁰ The commander of Russia's troops in Chechnya, Vladimir Moltenskoï, told reporters on February 2, 2002, that the plan provided for seven Slav-looking fighters to seize a submarine from the Russian Navy's Pacific Fleet some time in 1995–96, and blackmail Moscow into withdrawing troops from Chechnya and recognizing the republic as an independent state.¹¹ Moltenskoï reported that former naval officer Islam Khasukhanov developed the plan back in 1995 and that then-chief of the Chechen General Staff Maskhadov had personally reviewed the plan and made notes on it. Khasukhanov had served on Russian submarines before leaving the Pacific Fleet in the rank of naval commander to become chief of the operational department of the Chechen separatists' general staff.¹²

■ In January 2002, four soldiers from the unit that guards the weapons plutonium production facility in Zheleznogorsk died, in two separate incidents. On January 1, a drunk driver lost control of his truck, killing two soldiers immediately and a third who died later. Unit officials tried to cover up the accident, but the Krasnoyarsk military prosecutor's office

opened an investigation. On January 20, another of the guards died from a gun shot to the head; the circumstances are under investigation.¹³

■ In December 2001, GAN chairman Yuri Vishnevsky, wrote to Deputy Prime Minister Ilya Klebanov about a case in March 2001 in which pieces of radioactive spent nuclear fuel from Russia's navy were damaged and others missing. The fuel was sent from the Northern Fleet to the Mayak reprocessing plant by train, but when the canisters were opened, as much as half of some of the fuel elements were found to be missing – and some of the remainder were badly enough damaged to pose a serious safety hazard to those unloading the fuel. The Russian navy uses both HEU and LEU fuel, and Vishnevsky did not specify whether it was HEU that was missing. Because the navy is not subject to GAN regulation, GAN inspectors had not been present when the fuel was first loaded into the shipping containers, and the hazardous conditions were not documented in the shipping documents, leaving those transporting and unloading the fuel unaware of them. Vishnevsky warned that this was not the first case of this kind, and that the practice of having the Ministry of Defense regulate the security and safety of its own facilities posed serious risks. The whereabouts of the missing pieces are unknown. According to Vishnevsky, this incident was not the first of its kind.¹⁴

¹⁰ "Nachalnik Operativnogo Shtaba Maskhadova Gotovil Plan Zakhvata Rosiiskoi Atomnoi Podlodki (Chief of Maskhadov's Operational Staff Was Preparing a Plan to Hijack Russian Atomic Submarine)," *RIA-Novosti*, April 25, 2002.

¹¹ Russian *RTR* Television reported on April 26, 2002, that the plan included removing a nuclear warhead from the submarine and bringing it back to Chechnya (transcription and translation from *BBC Monitoring*). No other media confirmed this report, however. The Pacific Fleet presently operates no nuclear-powered ballistic missile submarines (SSBNs), but it still has some 20 nuclear powered submarines, including those of the Oscar-II class that can carry nuclear torpedoes.

¹² "Nachalnik Operativnogo Shtaba Maskhadova Gotovil Plan Zakhvata Rosiiskoi Atomnoi Podlodki (Chief of Maskhadov's Operational Staff Was Preparing a Plan to Hijack Russian Atomic Submarine)," *RIA-Novosti*, April 25, 2002.

¹³ "Smert' Soldat (Death of Soldiers)," *Segodnyashnyaya Gazeta*, quoted in *Nuclear No*, February 12, 2002. Translated and summarized by Galya Balatsky, Los Alamos National Laboratory.

¹⁴ Yu. G. Vishnevsky, "Gosatomnadzor (State Committee for Supervision over the Safety of Work in Nuclear Power Engineering) of Russia Sounds Alarm about Extremely Unsatisfactory Safety of Removing Spent Nuclear Fuel at 'Mayak' Production Association," *Nuclear No* (December 26, 2001).

¹⁵ *RFE/RL Crime, Corruption, and Terrorism Watch*, December 6, 2001.

- Yevgenii Tarasenko, the officer in charge of a military warehouse in the Nizhny Novgorod region, was arrested for selling dozens of automatic weapons and pistols, thousands of rounds of ammunition, bayonets, field binoculars, night-vision instruments, gun sights, and mobile electric generators, Russian NTV reported on November 23, 2001. The warehouse belonged to one of the artillery units of the Mulino garrison. Roughly 27,000 firearms are known to have been stolen from military units in Russia. Reportedly, 53,900 crimes involving illegal trading in weapons were recorded in Russia in 2001.¹⁵

- On November 10, 2001, Russian President Vladimir Putin met with Minister of Atomic Energy Alexander Rumiantsev on a Saturday to discuss security at Russia's nuclear facilities. Two Russian press accounts of the meeting indicate that Putin ordered that security be beefed up, with expanded guard forces to protect against terrorists.¹⁶ One of these articles reports that the meeting was occasioned by an FSB test of security at one nuclear facility, in which the mock "terrorists" were easily able to break through the security system.¹⁷

- Speaking at the International Atomic Energy on October 31, 2001, Yuri G. Volodin, chief of safeguards for the Russian nuclear regulatory agency, revealed that in the last year, his agency had uncovered dozens of violations of Russia's regulations for securing and accounting for nuclear material – including one loss of nuclear material, an event he described as of the "highest consequence." When asked for details, Volodin indicated that he was not at liberty to describe the loss in more detail.¹⁸ In a later interview with Russian TV, Volodin indicated that the case involved a nuclear facility receiving a shipment of nuclear material that had much less material in it than the documents prepared by the shipper indicated it should – which could have been caused by a theft in transit, a theft and forgery of the documents at the shipping facility, or a paperwork mistake. Volodin indicated that the investigation was continuing. Volodin argued that nuclear material in Russia was more vulnerable to theft during such transports than when it was in storage.¹⁹

- In an interview on Russian ORT Television on October 25, 2001, General Igor Valynkin, commander of the 12th Main Directorate of the Russian Ministry of Defense, the force that guards Russia's nuclear weapons, reported two incidents during 2001 of terrorist groups carrying out reconnaissance at Russian nuclear weapon storage facilities – one, eight months before his remarks, and the second, three months later. In both cases, Valynkin said the terrorist efforts were "nipped in the bud," and that no one had entered the grounds of the weapon storage facilities. Valynkin did not explain, however, how the terrorists had found the facilities, whose location is considered a state secret. Valynkin indicated that he took the possibility of terrorist attack on a warhead stor-

¹⁶ "The Ministry of Atomic Energy in the Middle of a Scandal," *Nezavisimaya Gazeta*, December 14, 2001 (translated by *BBC Monitoring Service*), and Yuri Golotyuk, "Peaceful Atom Preparing For a War," *Vremya Novostei*, November 12, 2001. For another account of the meeting, see "Russia's Putin Assured of Safety of Postal System and Nuclear Power Plants," *BBC Worldwide Monitoring* (excerpt from *Kommersant*), November 12, 2001.

¹⁷ "The Ministry of Atomic Energy in the Middle of a Scandal," *op. cit.*

¹⁸ Yuri G. Volodin, remarks to the International Atomic Energy Agency Safeguards Symposium, Vienna, Austria, October 31, 2001. The formal paper is Alexander Dmitriev, Yuri Volodin, Boris Krupchatnikov, and Alexander Sanin, "Efforts in Strengthening Accounting for and Control of Nuclear Material in Russia," IAEA-SM-367/12/14, in *IAEA Symposium on International Safeguards: Verification and Security of Nuclear Material*, October 29–November 2, 2001.

¹⁹ "Russian Official Refuses to Rule Out Chance That Nuclear Materials Were Stolen," *TV6*, Moscow, November 13, 2001, translated by *BBC Monitoring Service*.

²⁰ Pavel Koryashkin, "Russian Nuclear Ammunition Depots Well Protected – Official," *ITAR-TASS*, October 25, 2001; "Russia: Terror Groups Scoped Nuke Site," *Associated Press*, October 26, 2001.

²¹ "Corruption in the MVD," *RFE/RL Crime, Corruption, and Terrorism Watch*, November 12, 2001.

age facility seriously enough to have added additional guards, with better equipment and training, at all facilities.²⁰

■ In a rare unanimous vote on October 21, 2001, the Russian Duma called on the Russian Prosecutor's Office to investigate allegations of corruption by the chief of the corruption-fighting department of the national police, the Interior Ministry (MVD), Lieutenant General Aleksandr Orlov. It is alleged that he was involved in business conflicts between debtors and creditors in which the directorate took a 50 percent cut of debts collected on creditors' orders. Orlov has reportedly fled the country.²¹ MVD forces play a key role in guarding many of Russia's nuclear facilities.

■ In October 2001, the FSB and military counter-intelligence agents arrested two guards who had been stealing copper wire from military facilities in the closed city of Krasnoyarsk-35 (Podgorniy), where rockets are assembled and disassembled. During the previous year, the thieves had stolen 230 coils of copper wire from potentiometers at the facility. The facility managers installed additional alarm systems in all the buildings of the facility, so they would not be solely dependent on the guards for security.²²

■ In late September 2001, Alexander Orlov, director-general of the "Avangard" nuclear weapons assembly-disassembly facility in the town of Sarov (formerly Arzamas-16, also home to one of Russia's two nuclear weapons design laboratories), reported that employees at the plant were stealing integrated circuits and printed cir-

cuit boards from the plant's computers, substantially delaying the plant's efforts to convert to civilian production. Orlov said that he had added guards to protect the equipment from the insider thieves, who had not yet been caught. Previously, other insider thieves had been stealing precious metals from the plant, and had been caught and brought to trial.²³

■ On July 8, 2001, a Russian border guard pointing an automatic weapon stole a car from a man driving near the border between Russia's Kaliningrad district and Poland. When police caught up with the deserter, Maksim Starostin, he opened fire, wounding one policeman. He was shot in the leg as he tried to escape on foot, and arrested. This followed soon after an incident when another soldier fled a Kaliningrad border post and shot five people at a farm. Sources attributed these problems to military recruiters, under pressure to meet conscription targets, allowing conscription of mentally ill people into the military.²⁴ Border guards play a key role in interdicting nuclear smuggling.

■ In June 2001, the garrison court at Severomorsk, one of Russia's largest naval bases, where large quantities of HEU naval fuel are stored, convicted three officers for stealing and selling FK-P air filter cartridges, which each contain about 130–140 grams of palladium. The group included the commander of the garrison, Captain Aleksandr Kupchenko, UFSB senior representative Captain Aleksandr Okladnikov, and seaman Vladimir Nani. Between spring 1999 and March 2000 the group stole 135 canisters worth about 10.8 million rubles (over \$370,000

²² Russian website www.gzt.ru, January 14, 2002. Translated and summarized by Galya Balatsky, Los Alamos National Laboratory.

²³ Elena Mazanova, "One Day of Plant's Director," *Gorodskoy Kuryer*, September 27, 2001.

²⁴ "Russia: Another Armed Soldier Deserts, Pressure On Army Boards to Meet Conscription Targets," *Mayak Radio* (Moscow), July 9, 2001, monitored and translated by *Federal Broadcast Information Service*.

²⁵ Andrey Riskin, "Ordena i Pogony Ne Spasli ot Tyurmy (Honours and Epaulets hasn't Saved from Jail)," *Nezavisimaya gazeta - regiony*, June 19, 2001, reproduced in *Integrum Techno*.

²⁶ N. Kocheshkova, "Samoubiystvo i Samostrel v Divizii (Suicide and Self-Shooting in Division)," *Gorodskoy Kuryer*, No. 20, May 17 2001. Summary translation provided by the Center for Nonproliferation Studies, Monterey Institute for International Studies.

²⁷ "International Agency Concerned by Russian Traffic in Nuclear Materials," *ITAR-TASS*, April 2, 2001.

at June 2001 exchange rates). The canisters were sold in Murmansk for \$400 each. The thieves received prison sentences of three-and-a-half to four-and-a-half years.²⁵

- In early May 2001, a soldier guarding the nuclear weapons laboratory in the closed city of Sarov shot and killed himself while on guard duty. Ten days later, another soldier from the same unit fired a warning shot and then injured himself in a suicide attempt. At around the same time, a drunken contractor attacked one of the guards at this facility, who opened fire and wounded the contractor. The contractor was later arrested.²⁶
- At an April 2001 conference, Chief of the Russian State Customs Committee Nikolay Kravchenko reported that more than 500 incidents of illegal transportation of nuclear and radioactive materials across the Russian state border were detected by his agency in 2000.²⁷
- In April 2001, two Russian naval officers were arrested in Petropavlovsk-Kamchatsky for attempting to sell components they had stolen from a nuclear submarine, containing radioactive substances.²⁸
- In February 2001, the U.S. General Accounting Office (GAO) reported visiting a nuclear facility where the door to the main area with nuclear material was left wide open, and another where guards did not respond when metal detectors went off, and where visible wires to alarm systems that could be cut easily by intruders. The director of the facility with the open door to the

nuclear material area said it was left open so employees did not have to use the combination lock to enter the premises.²⁹

- On October 6, 2000, at a conference on nuclear non-proliferation in Moscow, Russian Security Council official Raisa Vdovichenko reported that Taliban envoys had sought to recruit at least one Russian nuclear expert. While the recruiting target did not agree to work for the Taliban, three of his colleagues had left his institute for foreign countries and Russian officials did not know where they had gone.³⁰
- On September 22, 2000, Russian security service officials found 240 (non-nuclear) missile warheads in a private company's scrap metal storage area in Russia's Pacific port of Khabarovsk.³¹
- At the end of September 2000, Valentin Ivanov, First Deputy Minister of Atomic Energy, told ORT television that the government still lacked the modern accounting methods necessary to keep track of nuclear materials held in 61 different institutions, public and private, scattered around the country. He had just told a meeting of the Russian Cabinet that more than 2 billion rubles (\$70 million) would be required to create an adequate accounting system, but only 70 million rubles (\$2.3 million) had been allocated.³² Ivanov said that between 1991 and 1999 there had been 23 attempts to steal fissionable materials, including 21 attempts between 1991 and 1995 and two attempts between 1995 and 1999. In comparison, there were only two attempts between 1945 and 1991. His report to

²⁸ Alexander Arkhipov, "Two Naval Officers Nabbed For Selling Radioactive Goods," *ITAR-TASS*, April 23, 2001.

²⁹ U.S. General Accounting Office (GAO), *Nuclear Nonproliferation: Security of Russia's Nuclear Material Improving; Further Enhancements Needed* (Washington: GAO, February 2001; available at <http://www.gao.gov/new.items/d01312.pdf> as of February 7, 2003).

³⁰ *RFE/RL*, Oct. 9, 2000.

³¹ "Hundreds of Missile Warheads Found in Scrap Metal in Russian Far East," *Agence France Presse*, September 22, 2000.

³² "Ministry Notes Drop in Nuclear Material Theft," *Reuters*, September 30, 2000.

³³ "Russian Nuclear Material Monitoring System 'Far From Ideal,'" *Rossiyskaya Gazeta*, September 29, 2000; "Russia: Kasyanov says control over fissile material 'very important problem,'" *Moscow Interfax*, September 28, 2000.

³⁴ "Russian Troops Block Power Shutoff," *Associated Press*, September 12, 2000.

the Cabinet meeting attributed the dramatic increase in theft attempts to the emergence of private firms and insufficient systems for accounting and control of nuclear materials.³³

■ On September 12, 2000, a local branch of the national electricity utility cut off power to a strategic missile base 60 miles northeast of Moscow. The utility claimed that the cutoff, ordered because of continued failure to pay bills totaling approximately \$683,000, affected only non-combat units. Power was restored when armed troops seized the switching station. The military and the utility subsequently reached an agreement to settle debts and keep the power on.³⁴

■ In mid-September 2000, a short circuit in the regional electricity system resulted in a power failure at the Mayak nuclear reprocessing center and the Beloyarsk nuclear power plant. The Mayak plant and its reactors were reportedly without outside power supply for 45 minutes. The head of the Mayak plant, Vitaliy Sadovnikov, said that the back-up diesel generators needed to run the cooling systems came on-line only 30 minutes later. According to Sadovnikov, only the “near-military discipline” of the plant’s personnel prevented a disaster. Ministry of Atomic Energy officials, however, claimed that all backup power systems had come on-line immediately.³⁵

■ On September 3, 2000, a private from a local military unit in the closed city of Sarov (formerly

Arzamas-16), site of Russia’s premier nuclear weapons laboratory, was shot by guards after setting off an alarm when he tried to break into a restricted area. What the private had been attempting to do and why remain unknown.³⁶

■ In early September 2000, Minister of Atomic Energy Evgeniy Adamov told nuclear workers protesting months of unpaid wages that the government owed the ministry over \$170 million and had not provided a single ruble in two months.³⁷ Some 47,000 unpaid nuclear workers joined in protests at various locations around the country, over what the nuclear workers’ trade union said was over \$400 million in back wages to workers in the nuclear sector.³⁸

■ In August 2000, Russian President Vladimir Putin blamed the scientific “brain drain” on the low salaries for experts. He said that approximately 30,000 Russian scientists are now working abroad. He also confirmed that the average monthly salary for scientists was lower than the national average.³⁹

■ In late June 2000, the military court in Severomorsk, one of Russia’s largest naval bases, convicted seven men of stealing fuel oil from Northern Fleet ships, including the commander of an anti-submarine ship; a senior lieutenant from the fleet’s fuel base; the captain and first mate of the tanker Cheremshan; and Aleksandr Rumiantsev, a civilian electrician who was reportedly involved in a Murmansk criminal organization that deals in fuel. All seven men

³⁵ “Nuclear Disaster Averted—Russian Power Plant Workers Praised for ‘Heroic’ Operation,” *The Observer* (UK), September 17, 2000.

³⁶ N.Kocheshkova, “Proyti i pogoret (Pass, but Fail [meaning that somebody managed to pass the fence, but failed to achieve the final goal])” *Gorodskoy Kuryer*, No. 36, September 7, 2000. Summary translation provided by the Center for Nonproliferation Studies, Monterey Institute for International Studies.

³⁷ “Russia’s Nuclear Force Sinks With the Ruble: Economic Crisis Erodes Strategic Arsenal,” David Hoffman, *The Washington Post*, September 18, 1998.

³⁸ “Nuclear Center Staffers to Join Nation-Wide Protest,” *ITAR-TASS*, September 11, 1998, and “Fund Arrears Imperil Russia’s Nuclear Sites,” Kevin O’Flynn, *The Moscow Times*, September 8, 1998.

³⁹ “Scientists Pay Low,” *Associated Press*, August 17, 2000.

⁴⁰ Vyacheslav Gudkov, “Toplivnaya Amnistiya na Severnom Flote (Fuel Amnesty on the North Fleet),” *Kommersant*, June 27, 2000.

⁴¹ “Lights Out for Topol-M,” *RFE/RL*, June 22, 2000.

were amnestied. Five others were convicted in an earlier hearing. The theft of 74 metric tons of diesel fuel from the ship Marshal Vasilyevskiy was discovered in 1997.⁴⁰

- In June 2000, after the Altaenergo electric company threatened to shut off power to local units of the Strategic Rocket Forces, which are equipped with Topol-M missile systems, the troops took over four power plants in Altai Krai. The unit owed about \$174,000 to the Altaenergo company.⁴¹
- In May 2000, a military court sentenced 12 men (2 officers, 3 warrant officers, and 7 sailors) for the theft of batteries from submarine torpedoes. The leadership of the guard forces was involved in the theft: in November 1998, torpedo and missile unit Chief of Staff Captain Vladimir Pospelov discovered the thefts, and decided to join in rather than stopping them, inviting the deputy commander of the torpedo ammunition unit, Captain Oleg Yerostenko, and a warrant officer to join him. The warrant officer involved two contract sailors, who, when they went on watch, removed the batteries from specific torpedoes indicated by the officers. The thieves removed the batteries, each of which contains approximately 150 kilograms of silver, from the torpedoes, replaced them with bricks, and then

took the batteries apart in order to take them off the naval base in sections.⁴²

- In April 2000, Georgian police arrested four Georgian nationals with 920 grams of highly enriched uranium. Reportedly, the uranium was enriched to 30 percent. The seizure took place in Batumi, the capital of the Adzhariya Autonomous Republic in Georgia.⁴³
- In March 2000, five sailors from the Russian Pacific Fleet suffocated in a decommissioned Russian submarine while trying to steal parts from inside the submarine.⁴⁴
- On January 28, 2000, the commander of a Strategic Rocket Forces unit in the village of Sibirsky beat one of his subordinates to death in a drunken brawl at the base. The commander is being charged with murder.⁴⁵
- A police spokesman told *ITAR-TASS* on January 26, 2000, that a worker at the Mayak plant at Ozersk, where tens of tons of weapons-usable plutonium is stored, was detained with 10 doses of heroin—following the breakup of a ring selling drugs to the troops guarding the plant some months before (see below). The detained man admitted regular usage and sale of illegal drugs.⁴⁶

⁴² Vyacheslav Gudkov, "Moryaki Torgovali Torpednymi Akkumulyatorami (Sailors Traded in Torpedo Batteries)," *Kommersant*, May 31, 2000. See also NTV, May 26 2000, translated in "Northern Fleet Officers Sentenced for Theft at Gadzhiiyevo," *Foreign Broadcast Information Service*, Document CEP20000526000073.

⁴³ "Georgian Police Detain Four Uranium Smugglers," *ITAR-TASS*, April 19, 2000, summarized and discussed by Monterey Institute for International Studies Center for Nonproliferation Studies NIS Nuclear Trafficking Database, *NTI Research Library: NIS Nuclear Trafficking Database*.

⁴⁴ "5 Sailors Suffocate," *Associated Press*, March 22, 2000; "Five Russian Sailors Die In Old Nuclear Submarine," *Reuters*, March 22, 2000.

⁴⁵ Vitaly Romanov, "A Brawl At a Unit of the Strategic Missile Forces Has Resulted in the Death of an Officer," *Segodnya*, February 16, 2000.

⁴⁶ Yevgeny Tkachenko, "Drugs Making Way Into Nuclear Sector Occupations," *ITAR-TASS*, January 26, 1999.

⁴⁷ "Russian Soldier Kills Three Comrades," *Reuters*, January 17, 2000.

⁴⁸ Thomas Nilsen, "GAN Threatens To Shut Down Leningrad NPP," *Bellona*, January 28, 2000.

⁴⁹ "Radioactive elements stolen from nuclear submarine," RIA, January 31, 2000, translated and reprinted by *BBC Worldwide Monitoring*. For more details on this case, see Mikhail Druzhin, "Sailors Break a Nuclear Reactor," *Kommersant-Daily*, January 29, 2000, and other accounts summarized and discussed by Monterey Institute for International Studies Center for Nonproliferation Studies NIS Nuclear Trafficking Database, *NTI Research Library: NIS Nuclear Trafficking Database*.

- On January 17, 2000, a soldier guarding a strategic rocket forces site in Russia's Far East gunned down three of his comrades as they came to relieve him. He also fired on the next watch, which arrived three hours later, but the soldiers returned fire, first injuring and then disarming him. The killer's motives were not immediately known.⁴⁷
- In January 2000, the Russian nuclear regulatory agency called for the Leningrad nuclear power plant to be shut down if workers appeared to be serious about their threat to reduce the power output from the reactors during a protest action. The workers wanted a 40 percent salary increase, while the management had offered only 10 percent. The plant supplies roughly 60 percent of northwest Russia's electrical power.⁴⁸
- In January 2000, four sailors stole precious metals and radioactive sources from an armored safe of their nuclear submarine in the military town of Vilyuchinsk-3, on the Kamchatka peninsula. The Federal Security Service arrested all four thieves and their agent. During a search of the thieves' homes, the investigators discovered the stolen radioactive sources and submarine equipment containing gold, platinum, silver and palladium.⁴⁹
- In December 1999, police detained a warrant officer of one of the military units in the city of Zheleznogorsk, one of Russia's major nuclear centers, and seized a whole arsenal of weapons he kept. The warrant officer was hiding the arsenal in an acquaintance's garage, which held 600 grams of TNT, six sticks of plastic explosives, 10 meters of quick-match fuse, six combat grenades with fuses, more than 500 rounds of ammunition of various calibers, and a large quantity of special ammunition and parts for firearms.⁵⁰
- On December 19, 1999, one of the guards at Mayak deserted his unit with his submachine gun and ammunition. He was arrested in two hours. After a long negotiation, he was persuaded to surrender and hand in the gun and all the ammunition. His motive has not been established.⁵¹
- On December 17, 1999, radioactive steel structures were found abandoned on the outskirts of the closed town of Ozersk. Several stainless steel structures with a total weight of one metric ton had been stolen from an industrial site at Mayak—where 30 tons of weapons-usable plutonium is also stored—with the aim to sell steel to a scrap yard.⁵²
- In November 1999, Colonel-General Vladimir Yakovlev, commander of the Strategic Rocket Forces, confirmed that the elite force gets no more preference in receiving pay than other units of the military, despite being the former command of then-Defense Minister Igor Sergeev. "As far as the minister's love is concerned, we receive our salaries with delays, just like everyone else," Yakovlev said. Nevertheless, Yakovlev expressed confidence in his force's reliability, saying "the fact that we haven't ... had an emergency situation in the last 40 years speaks for the effectiveness of our selection procedures."⁵³
- On October 24, 1999, First Deputy Minister of Atomic Energy Valeriy Lebedev announced that security had been tightened at Russian nuclear facilities in response to fears of Chechen terror-

⁵⁰ "Review of Incidents in CIS," *ITAR-TASS*, December 30, 1999.

⁵¹ Yevgeny Tkachenko, "Armed deserter from Russian nuke facilities guard arrested," *ITAR-TASS*, December 23, 1998.

⁵² Yevgeny Tkachenko, "Radioactive Steel Stolen From Russian Nuclear Factory," *ITAR-TASS*, December 17, 1999.

⁵³ "Russia's Elite Missile-Men Get Paid Late Too," *Reuters*, November 25, 1999.

⁵⁴ "Russia Tightens Security at Nuclear Plants," *Agence France Press*, October 25, 1999.

⁵⁵ "Crime and Corruption Soar in Russian Army," *Reuters*, October 7, 1999.

⁵⁶ Alexsander Alf, "Soldiers Make Holes in the Nuclear Shield Morale," *Nezavisimaya Gazeta*, August 7, 1999, p. 2.

ism in the wake of the apartment bombings in Moscow. The day before Lebedev's statement, Russian Interior Minister Vladimir Rushaylo accused Chechen warlord Shamil Basayev and his ally Khattab of "openly threatening to commit acts of sabotage" at nuclear sites.⁵⁴ Chechen sources denied any such threat.

■ On October 7, 1999, the Russian army's top prosecutor said crime was rising in the ranks, costing the cash-strapped military millions of dollars and endangering national security. The offences involved officials of various ranks. The number of officers found to be lining their pockets through theft and graft jumped to 1,017 from 1993 to 1999 compared to 185 over an unspecified period up to 1993. The prosecutor warned that bribery is rife in the army, with unsolved cases up 82 percent over the six-year period to 1999. One of the cases under investigation involves several high-ranking anti-aircraft defense officers falsifying documents to steal more than \$2 million worth of missile system spare parts which were then sold to private companies.⁵⁵

■ On August 6, 1999, at the Gremikha base of the Northern Fleet, two soldiers brandishing an axe attacked a sentry and disarmed him. The attackers were surrounded and killed in the skirmish that followed. The post was guarding a radioactive waste storage facility, and the shooting took place in the immediate vicinity of the waste storage. There are also over a dozen retired nuclear submarines at the site.⁵⁶

■ In August 1999, a serviceman in one of the Strategic Rocket Forces units based near the town of Kolpashevo, Tomsk region, shot two soldiers and committed suicide. The unit belongs to the Main Test Center of Research and Control of the Defense Ministry.⁵⁷

■ Surveys taken in June and July 1999 indicated that the average wage at the nuclear weapons facilities in Russia's closed nuclear cities was \$43 per month. Three quarters of those surveyed reported delays in receiving even this meager level of pay. Sixty percent of those surveyed indicated that they had taken second jobs to get by. Those doing outside work had an average income of \$74 per month. On average, the nuclear experts in the closed cities estimated that \$160 per month would be needed for a "reasonable subsistence." 46 percent of the nuclear experts surveyed said they would be willing to work in the military programs of a foreign country.⁵⁸

■ In March 1999, a security guard at Mayak, in the closed city of Ozersk, stopped an attempt to take a large bag full of vodka bottles onto the grounds of the plant.⁵⁹ The following month, one of the MVD troops guarding Mayak died and two others were hospitalized after drinking antifreeze they believed was alcohol for human consumption.⁶⁰

■ In February 1999, a poverty-stricken naval conscript at one of the nuclear submarine bases

⁵⁷ Alexsander Alf, "Soldiers Make Holes in the Nuclear Shield Morale," op. cit.

⁵⁸ Valentin Tikhonov, *Russia's Nuclear and Missile Complex: The Human Factor in Nonproliferation* (Washington, D.C.: Carnegie Endowment for International Peace, April 2001).

⁵⁹ ITAR-TASS review of incidents in CIS on March 13 [in English], *RIA News Agency*, 19:01 GMT, March 13, 1999.

⁶⁰ "Servicemen on Sentry Duty are Poisoned with Antifreeze," *Novye Izvestia*, April 7, 1999, p. 8.

⁶¹ Carey Scott, "Poverty a Pox on Nuclear Safety," *The Sunday Times*, March 1, 1999, summarized and discussed by Monterey Institute for International Studies Center for Nonproliferation Studies NIS Nuclear Trafficking Database, *NTI Research Library: NIS Nuclear Trafficking Database*.

⁶² "Nuclear Center Worker Caught Selling Secrets," *Russian NTV*, Moscow, 16:00 Greenwich Mean Time, December 18, 1998, translated in *BBC Summary of World Broadcasts*, December 21, 1998.

⁶³ Yevgeniy Tkachenko, "FSB Agents Prevent Theft of Nuclear Materials," *ITAR-TASS*, December 18, 1998; and "Interview: Victor Yerastov: MINATOM Has All Conditions for Providing Safety and Security of Nuclear Material," *Yaderny Kontrol Digest* 5, No. 1 (Winter 2000).

⁶⁴ Interviews, June 2000.

on Kola-peninsula put an Akula-class nuclear attack submarine out of service after he snipped off 24 lengths of wire from the reactor room and sold them to an officer from another submarine. The coiled palladium-vanadium wire was of a vital control device and the theft in effect disabled the reactor.⁶¹

■ On December 18, 1998, an employee at Russia's premier nuclear weapons laboratory, in Sarov (formerly Arzamas-16) was arrested for espionage, for attempting to sell documents on new conventional weapons designs to agents of Iraq and Afghanistan for \$3 million. The regional head of the Federal Security Service (FSB) reported that there had been other similar cases at Sarov, and said that such spying was the result of the "very difficult financial position" of workers at such defense enterprises.⁶²

■ Also on December 18, 1998, Major General Valeriy Tretyakov, head of the Chelyabinsk Oblast Federal Security Service (FSB), revealed that FSB agents had thwarted a conspiracy by employees at a major nuclear facility of Russia's Ministry of Atomic Energy (MINATOM) in the Chelyabinsk region to steal 18.5 kilograms of weapons-usable nuclear material. The theft attempt, and the fact that if successful it could have caused "significant damage to the [Russian] state," was later confirmed by MINATOM's head of nuclear material accounting.⁶³ Subsequently,

MINATOM officials privately confirmed that the material was HEU.⁶⁴

■ On November 19, 1998, 3,000 workers staged a one-day strike over unpaid wages at Chelyabinsk-70, one of Russia's premier nuclear weapons design laboratories, complaining of "constant undernourishment, insufficient medical service, inability to buy clothing and footwear for children or to pay for their education."⁶⁵

■ In late October 1998, a Strategic Rocket Forces officer at a base for the Topol-M ICBMs—the most modern weapons in the Russian strategic force—was quoted on Russian television as saying that he had received his pay only through July, despite promises that back wages would be paid in October.⁶⁶

■ On October 12, 1998, Sergei Ushakov, a spokesman for Russia's Chief Military Prosecutor's Office, reported that some 20 servicemen were discharged during 1997–1998 after being diagnosed with psychiatric disorders, and that some of these were responsible for guarding nuclear arsenals. The office issued a report indicating the Strategic Rocket Forces, of all the services in Russia's military, had the most rapid increase in its crime rate, 25 percent higher in 1997 than in 1996.⁶⁷

■ On October 9, 1998, General Igor Valynkin, commander of the 12th Main Directorate of the

⁶⁵ Yevgeni Tkachenko, "Ural Nuclear Workers on Strike, Demanding Wage Arrears," *ITAR-TASS*, November 19, 1998.

⁶⁶ "Stretched Russian Army Faces Stark Choice," *Reuters*, October 28, 1998.

⁶⁷ Simon Saradzhyan, "Missile Guards Discharged For Mental Illnesses," *Moscow Times*, October 13, 1998.

⁶⁸ "Russia is capable to ensure its security, general," Mikhail Shevtsov, *ITAR-TASS*, October 9, 1998. According to Russian officials a statement in October that troops have only received pay for July means that they are receiving paychecks with some regularity, but that the paychecks they received recently only bring them up to what they were supposed to have been paid by July; it does *not* necessarily mean that they have received no pay at all since July.

⁶⁹ *Interfax*, October 7, 1998, cited in "Russian Army Sells Arms to Pay for Food: Global Intelligence Update Red Alert," *GlobalBeat*, October 9, 1998.

⁷⁰ William C. Potter, "Prospects for U.S.-Russian Cooperation for Nonproliferation in the Post-Cold War Era," presentation to the Defense and Security Committee of the North Atlantic Assembly, 44th Annual Session, Edinburgh, November 10–13, 1998.

⁷¹ Todd E. Perry, "Preventing the Proliferation of Russian Nuclear Materials: Limits of the Current Approach," paper prepared for the Annual Meeting of the International Security Studies Section (ISSS), International Studies Association (ISA), Monterey, California, November 8, 1998.

Ministry of Defense, in charge of security for nuclear weapons, told a press conference that Russia was fully capable of protecting its nuclear weapons, but acknowledged that the directorate's troops had not been given any higher priority in receiving pay than other troops, that they had received the paychecks due them only through July, and that the directorate was helping officers to get vegetables and potatoes for the winter in lieu of cash.⁶⁸

■ In early October 1998, Russian customs reportedly intercepted 5 “Hip C” assault transport helicopters with weapons pods, apparently stolen by military officers, bound for North Korea. The helicopters, valued at \$300,000 each, were reportedly being sold for \$20,000 apiece.⁶⁹

■ At some nuclear facilities, MVD guards have left their posts to forage for food. Others have been reluctant to patrol facility perimeters because they did not have winter uniforms to keep them warm on patrol. At some facilities, recently installed security equipment is not being used because there is no money to maintain it; at others, guards who had not been paid in months were expected to man unheated posts in sub-freezing conditions.⁷⁰ At some facilities, entire security systems – alarms, surveillance cameras, portal monitors, etc. – have been shut down because the facilities’ electricity was cut off for non-payment of bills.⁷¹ At other facilities, guards have intentionally turned off alarm systems, or even cut their cables, because they were annoyed by frequent false alarms.⁷²

■ In September 1998, at the closed Siberian nuclear city of Krasnoyarsk-26, home to enough plutonium for hundreds or thousands of nuclear

bombs, the heat was shut off for weeks, because lack of money delayed shipments of fuel to the reactor that heats the city, and workers staged a protest over unpaid wages at the plutonium processing facility. Shortly before this incident, the facility director wrote to Ministry of Atomic Energy headquarters in Moscow, warning that “wage payments are three months behind schedule...The social tension in the shops and factories has reached the critical level, and its consequences are unpredictable.”⁷³

■ On September 20, 1998, a Ministry of Internal Affairs (MVD) sergeant at the Mayak facility, where over 30 tons of separated weapons-usable civilian plutonium is stored, shot two of his MVD comrades and wounded another before escaping with an assault rifle and ammunition. The incident reportedly led President Yeltsin to order a review of nuclear security at the site.⁷⁴ That same month, counterintelligence officers closed down a ring that had been supplying illegal drugs to the MVD troops at Mayak.⁷⁵

■ On September 11, 1998, a 19-year-old sailor went on a rampage in Murmansk, killing seven people with a chisel and an AK-47 assault rifle aboard an Akula-class nuclear-attack submarine. He then barricaded himself for 20 hours in the torpedo bay and threatened to blow up the submarine, with its nuclear reactor. Finally, he reportedly committed suicide. Russian officials insisted there were no nuclear weapons on board at the time.⁷⁶

■ On September 5, 1998, five soldiers from the 12th Main Directorate at Novaya Zemlya—Russia’s only nuclear weapons test site—killed a guard at the

⁷² Barbara Slavin, “Nuclear Weapons Threat Lurks in Russia: Poorly Paid Guards Are a Security Concern,” *USA Today*, November 24, 1998; David Hoffman, “Russian Nuclear Security Called Lax: Easy Access to Fuel, Failure to Pay Wages Alarm U.S. Experts,” *The Washington Post*, November 27, 1998.

⁷³ Michael R. Gordon, “Special Report: The Hidden City: Hard Times at Russia’s Once-Pampered Nuclear Centers,” *The New York Times*, November 18, 1998.

⁷⁴ Gertz, “Yeltsin Orders Nuclear Security Probe,” *The Washington Times*, October 21, 1998.

⁷⁵ “Servicemen on Sentry Duty are Poisoned with Antifreeze,” op. cit., p. 8.

⁷⁶ Gertz, “Yeltsin Orders Nuclear Security Probe,” op. cit. See also “Nuclear Fears Resurface After Seizure of Russia Sub,” Richard Paddock, *Los Angeles Times*, October 5, 1998.

facility, took another guard hostage and tried to hijack an aircraft. After seizing more hostages, they were disarmed by other Ministry of Defense forces and Federal Security Service commandos.⁷⁷

■ On September 3, 1998, Russian radio reported that the mayor of Krasnoyarsk-45, one of Russia's closed "nuclear cities," where enough HEU for hundreds or thousands of bombs is located, had written to Krasnoyarsk Governor Alexander Lebed and Atomic Energy Minister Evgeniy Adamov warning that unless urgent action was taken, a social explosion in the city was unavoidable, as a cutoff in payments from the Atomic Ministry's bank meant that public sector workers had not been paid at all in

August, and even basic medical supplies could not be purchased.⁷⁸

■ In August 1998, Defense Minister Igor Sergeev issued an order to all military officers to "look for additional sources [of sustenance for the winter] and assume personal control." The Defense Ministry announced that trips would be organized for all soldiers and officers to take to the fields to harvest mushrooms, berries, and other sources of food for the winter. In the Far East region of Khabarovsk, the territorial administration has reportedly stopped providing bread to Far East military units, due to non-payment of debts.⁷⁹

⁷⁷ Gertz, "Yeltsin Orders Nuclear Security Probe," op. cit.; see also Vladimir Georgiev, "Underlying Reason: Crime in the Russian Army Has Rolled up to Nuclear Munitions Units, But the Ministry of Defense Believes Russia Is Capable of Controlling Weapons of Mass Destruction Without Foreign Intervention," *Moscow Nezavisimoye Voyennoye Obozreniye*, No.34, September 11–17, 1998, p. 1, translated in *Foreign Broadcast Information Service*, Central Eurasia, September 23, 1998.

⁷⁸ *Radio Russia* (Moscow), 0400 Greenwich Mean Time, September 3, 1998, translated in "Bank Default Threatens Social Explosion in Krasnoyarsk," *BBC Monitoring Service*, September 4, 1998.

⁷⁹ "Russian Army Sells Arms to Pay for Food: Global Intelligence Update Red Alert," op. cit.