



Testimony

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WEAPONS OF MASS DESTRUCTION

Observations on U.S. Threat Reduction and Nonproliferation Programs in Russia

Statement of Joseph A. Christoff, Director,
International Affairs and Trade



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Mr. Chairman and Members of the Committee:

I am pleased to be here today to discuss efforts by the Departments of Defense, Energy, and State to help Russia secure, destroy, and dismantle weapons of mass destruction (WMD) and prevent their proliferation.

After the breakup of the Soviet Union in 1991, Russia inherited the world's largest arsenal of nuclear, chemical, and biological weapons. The Soviets' extensive military resources and autocratic rule allowed it to maintain and secure this vast arsenal. As Russia adopted economic reforms and moved toward an open society, its economy and central controls deteriorated, making it difficult to maintain security at these weapons sites. Recognizing these difficulties, the Congress authorized funds for programs to help destroy Russian weapons and improve WMD security. The events of September 11th have increased U.S. concerns that terrorists might obtain nuclear materials or weapons at poorly secured sites.

GAO has reviewed U.S. threat reduction and nonproliferation efforts in Russia since 1993. Today, I will present our overall observations on the progress and key challenges of these programs based on published GAO reports since 1993.¹

Summary

Over the past decade, the United States has responded to increased proliferation risks in Russia by providing \$6.4 billion for Departments of Defense, Energy, and State programs in the former Soviet Union. The United States has made important progress in three areas. First, the Department of Defense helped destroy 463 Russian nuclear submarines, long-range bombers, and strategic missiles to support Russia's efforts to meet treaty requirements. Second, the Department of Energy installed security systems that helped protect 32 percent of Russia's

¹Appendix I contains a list of reports GAO has published since 1993 on U.S. threat reduction and nonproliferation efforts in the former Soviet Union.

weapons-usable nuclear material. Third, the United States supplemented the income of thousands of Russian weapons scientists so they would be less inclined to sell their skills to countries of concern.

However, U.S. threat reduction and nonproliferation programs have consistently faced two critical challenges: (1) the Russian government has not always paid its agreed-upon share of program costs and (2) Russian ministries have often denied U.S. officials access to key nuclear and biological sites. Regarding program costs, Russia did not pay, for example, its previously agreed-upon share of \$275 million to design and build a nuclear storage site at Mayak. As of January 2003, the United States plans to spend \$385 million for a scaled-down version of this site. Russia has also failed to pay operation and maintenance costs for security equipment the United States installed at sites with weapons-usable nuclear material. As a result, DOE plans to spend an additional \$171 million to ensure that this equipment is properly maintained. Regarding access, Russia will not allow DOD and DOE the level of access they require to design security improvements, verify their installation, and ensure their proper operation. As a result, the agencies have been unable to help protect substantial portions of Russia's nuclear warheads and weapons-usable nuclear material. In addition, many Russian biological sites that store dangerous biological pathogens remain off-limits to the United States. Russia justifies these access restrictions on the grounds that it is protecting its national security interests.

Background

Russia inherited the world's largest arsenal of weapons of mass destruction after the collapse of the Soviet Union. This arsenal includes approximately:

- 30,000 nuclear weapons,
- 600 metric tons of weapons-usable nuclear materials,
- 40,000 metric tons of declared chemical weapons,

- 2,100 systems (missiles and bombers) for delivering weapons of mass destruction, and
- About 40 research institutes devoted to the development and production of biological weapons.

In addition, the Soviet collapse also left 30,000 to 75,000 senior nuclear, chemical, and biological weapons scientists and thousands of less experienced junior scientists without full-time employment.

To date, Congress has authorized more than \$6.4 billion for several programs to help Russia and other countries in the former Soviet Union reduce the proliferation threats posed by their weapons of mass destruction.

In 1992, Congress authorized DOD to establish the Cooperative Threat Reduction Program. The program remains the largest and most diverse U.S. program addressing former Soviet weapons of mass destruction threats. Most Cooperative Threat Reduction projects (1) destroy vehicles and launchers that deliver nuclear weapons and their related facilities and (2) secure Russia's nuclear weapons and materials to prevent their proliferation.

The Department of State helped establish and, with DOD, funded the International Science and Technology Center in Moscow to help fund peaceful research carried out by underpaid weapons scientists in 1994. The Center supplements the income of scientists, purchases equipment for scientific research, and supports programs to help scientists identify and develop commercially viable research projects. The Center's sponsors include the United States, the European Union, and Japan.

In 1995, DOE launched the Material Protection, Control, and Accounting Program to help secure former Soviet weapons-usable nuclear materials. It later created the Initiatives for Proliferation Prevention Program and the Nuclear Cities Initiative to engage unemployed weapons scientists in various peaceful

commercial projects. The Department also has two other initiatives to reduce former Soviet stockpiles of weapons useable material. These programs are designed to convert highly enriched uranium and weapons-usable plutonium to fuels that can be used in civilian nuclear power plants.

In 1998, DOD initiated efforts to help secure Russian sites with dangerous biological pathogens in response to intensified efforts by Iran and other countries of proliferation concern to acquire biological weapons expertise and materials.² In 1999, Congress approved funds to begin enhancing security at Russia's chemical weapons storage sites.

U.S. Programs Have Made Progress in Three Areas

The United States has made progress in helping reduce threats from the weapons, materials, and personnel working in weapons development. First, the most important progress the United States has made to date has been in support of Russia's efforts to eliminate strategic nuclear delivery systems as required by the Strategic Arms Reduction Treaty (START). START I required Russia to reduce the number of delivery vehicles from 2100 to 1600.³ Further cuts are required under START II. Through the Cooperative Threat Reduction program, the Department of Defense has helped de-fuel, transport, and destroy excess missiles and bombers, and destroy excess launchers.⁴ According to the Defense Threat Reduction Agency, 24 nuclear ballistic missile submarines, 44 long-range heavy bombers, and 395 intercontinental missiles that previously contained nuclear warheads have been destroyed as of 2002. These efforts have been successful because the United

² *Biological Weapons: Effort to Reduce Former Soviet Threat Offers Benefits, Poses New Risks* (GAO/NSIAD-00-138, Apr. 28, 2000).

³ Under the terms of START I, Belarus, Kazakhstan, and Ukraine were required to eliminate their entire stockpile of about 400 strategic nuclear delivery vehicles.

⁴ *Weapons of Mass Destruction: Status of the Cooperative Threat Reduction Program* (GAO/NSIAD-96-222, Sep. 27, 1996).

States and Russia had mutually agreed-upon goals rooted in START and the Russians provided relatively open access.⁵

The Department of Energy has made progress in securing Russia's plutonium and highly enriched uranium. As we reported in February 2001,⁶ DOE had installed systems that helped improve security over 32 percent of Russia's weapons-usable nuclear material. Much of DOE's progress was at Russian civilian and naval fuel storage sites. At those sites, DOE completed the installation of security systems at nearly 60 percent (73 of 125) of the buildings and had work under way at 26 percent (33 of 125) of the remaining buildings.⁷ In addition, within 2 years of beginning a program to help the Russian Navy secure its nuclear warheads, DOE had begun installing security systems at 41 of 42 sites. The installation of security equipment such as fences, sensors, video cameras, and access control systems at these sites has reduced the risk of theft of nuclear material and nuclear warheads.

The United States also seeks to reduce proliferation risks associated with under-employed, highly trained scientists who could be tempted to sell their expertise to terrorists or countries of concern. As we reported in May 2001,⁸ the Departments of Defense, Energy, and State have supplemented the incomes of thousands of former Soviet weapons scientists. For example, in 2000, about 6,800 senior weapons scientists were engaged in research projects such as developing vaccines and devising techniques to enhance environmental cleanup. However, the U.S.-sponsored research generally provides only part-time employment for Russian scientists. Consequently, the departments know little about the scientists' activities outside these programs.

⁵ *Weapons of Mass Destruction: U.S. Efforts to Reduce Threats from the Former Soviet Union*. GAO/T-NSIAD/RCED-00-119, Mar. 6, 2000.

⁶ *Nuclear Nonproliferation: Security of Russia's Nuclear Material Improving; Further Enhancements Needed* (GAO-01-312, Feb. 28, 2001).

⁷ Russia stores weapons-usable nuclear material at three types of sites. Civilian sites produce nuclear fuels and materials for civilian application; naval fuel sites store stockpiles of highly enriched uranium used in submarines and icebreakers; and the nuclear weapons complex fabricates, refurbishes, and dismantles nuclear weapons and components.

U.S. Threat Reduction Programs in Russia Face Key Challenges

Since 1991, U.S. threat reduction programs in Russia have faced two key challenges. First, Russia has not always adhered to agreements to pay its share of program costs, and second, Russia has not always provided the access DOD and DOE require to design security improvements, verify their installation, and ensure their proper operation.

Russia Has Not Always Provided Its Share of Funding for Programs

Three programs illustrate the difficulty of relying on Russia to provide agreed-upon funds for threat reduction programs. In 1992, Russia requested assistance from the United States to build a site to store nuclear material from dismantled warheads. DOD agreed to help Russia build a Pentagon-sized facility at Mayak to store the plutonium and limited its contribution to no more than one half (\$275 million) of the total estimated cost. However, as we reported in 1999,⁹ Russia did not fund its \$275 million share of the project. As a result, the United States, as of January 2003, plans to spend \$385 million to design and build a scaled-back version of the facility. In addition, as we testified in March 2000,¹⁰ the United States does not know if Russia will be able to pay the annual operating costs of more than \$10 million after the facility is completed in 2004.

Since 1994, DOD has been negotiating with Russia to design and build a destruction facility for chemical weapons. Under the terms of the Chemical Weapons Convention, Russia is required to destroy its entire chemical weapons stockpile by 2012. Russia estimates that it will cost \$3.5 to \$5 billion for multiple facilities to destroy this stockpile. In November 2001, we testified that DOD

⁸ *Weapons of Mass Destruction: State Department Oversight of Science Centers Program* (GAO-01-582, May 10, 2001) and *Nuclear Nonproliferation: DOE's Efforts to Assist Weapons Scientists in Russia's Nuclear Cities Face Challenges* (GAO-01-429, May 3, 2001).

⁹ *Weapons of Mass Destruction: Effort to Reduce Russian Arsenals May Cost More, Achieve Less Than Planned* (GAO/NSIAD-99-76, Apr. 1999).

¹⁰ *Weapons of Mass Destruction: U.S. Efforts to Reduce Threats from the Former Soviet Union* (GAO/T-NSIAD/RCED-00-119, Mar. 6, 2000).

estimated that it will cost the United States \$890 million to design and build a single facility.¹¹ However, the successful completion of the project was based on the assumption that Russia will pay an additional \$750 million in operational costs and related infrastructure such as gas and water lines, storm sewers, and a rail line to link the destruction facility with a nearby chemical weapons storage site. However, through 2001, Russia had only provided \$25 million toward this effort.

Russia also apparently faces significant limitations on its ability to pay for the operation and maintenance of U.S.-provided security equipment such as cameras, electronic locks, and motion detectors.. As we reported in February 2001,¹² when DOE began to help secure Russia's weapons-usable nuclear material in 1995, the agency assumed that Russia would be able to pay for the long-term operation and maintenance of the security systems DOE planned to install. However, DOE soon learned that Russian officials said they lacked the resources to pay for these costs. As a result, as of February 2001, DOE planned to spend \$171 million to cover the cost of equipment warranties, operating procedure development, and training. Without U.S. funding, the operation and maintenance of security systems at these sites would be reduced, leaving nuclear materials more vulnerable to theft.

Russia Has Denied DOD and DOE Access to Significant Nuclear and Biological Sites

Russia has not provided DOD and DOE the access to sites that they require to design security improvements, verify their installation, and ensure their proper operation. Russia justifies these access restrictions on the grounds that it is protecting its national security interests. As a result, DOD and DOE have been unable to help protect substantial portions of Russia's nuclear warhead stockpile and weapons-usable nuclear material. In addition, several Russian biological sites

¹¹ *Weapons of Mass Destruction: Assessing U.S. Policy Tools for Combating Proliferation* (GAO-02-226T, Nov. 7, 2001).

¹²GAO-01-312.

of potential proliferation concern have been off-limits to the United States. The following three examples illustrate the lack of access the agencies have encountered.

The United States has long-standing concerns about the security conditions at Russia's nuclear warhead sites. In 1997, DOD began efforts to help secure these sites. As we reported in June 2001,¹³ the Russian Ministry of Defense does not provide U.S. personnel with access to nuclear weapons storage sites. This has blocked DOD from installing security improvements such as fences, sensors, and access control systems to prevent outsiders from breaking in and employees from stealing on the inside.

As we reported in February 2001,¹⁴ DOE's lack of access to buildings in Russia's nuclear weapons complex is a significant challenge to improving security over weapons-usable nuclear material in Russia. DOE requires access to these buildings to design security systems and confirm their installation. The Russian Ministry of Atomic Energy had denied DOE access to 73 percent of the buildings with weapons-usable material in nuclear weapons complex. As a result, DOE was unable to improve security over hundreds of metric tons of weapons-usable nuclear material.

The Russian government has refused to grant the United States access to biological facilities managed by the Ministry of Defense. As we reported in April 2000,¹⁵ the United States is concerned that offensive research may continue to take place at these facilities. It is believed that these sites maintain a national collection of dangerous pathogens, including Ebola and Marburg viruses. U.S. officials stated that they are concerned that dangerous pathogen stocks could be stolen and used for illicit purposes.

¹³ *Cooperative Threat Reduction: DOD Has Adequate Oversight of Assistance, but Procedural Limitations Remain* (GAO-01-694, Jun. 19, 2001).

¹⁴GAO-01-312.

The Departments of Defense and Energy have worked with the Russian government over the years to gain access to these sites but with limited success. As a result, the United States employs alternatives to onsite access through the use of photographs and videotapes before and after the installation of security systems, visual inspections by a single member of a U.S. project team, and written certification by Russian site directors.

Mr. Chairman and Members of the Committee, this concludes my prepared statement. I will be happy to answer any questions you may have.

Contacts and Acknowledgments

For future contacts regarding this testimony, please call Joseph Christoff at (202) 512-8979. Gene Aloise, R. Stockton Butler, Joseph Cook, Lynn Cothorn, Muriel Forster, Beth Hoffman Leon, Hynek Kalkus, David Maurer, Maria Oliver, Jeffrey Phillips, Daniele Schiffman, F. James Shafer, and Pierre Toureille made key contributions to the reports on which this testimony is based.

¹⁵GAO/NSIAD-00-138.

Appendix I

**GAO Reports on Former Soviet Weapons
of Mass Destruction and Related Subjects**

Cooperative Threat Reduction Program Annual Report. GAO-03-341R.
Washington, D.C.: December 2, 2002.

Arms Control: Efforts to Strengthen the Biological Weapons Convention. GAO-02-1038NI. Washington, D.C.: September 30, 2002.

Nuclear Nonproliferation: U.S. Efforts to Help Other Countries Combat Nuclear Smuggling Need Strengthened Coordination and Planning. GAO-02-426.
Washington, D.C.: May 16, 2002.

Cooperative Threat Reduction: DOD Has Adequate Oversight of Assistance, but Procedural Limitations Remain. GAO-01-694. Washington, D.C.: June 19, 2001.

Weapons of Mass Destruction: State Department Oversight of Science Centers Program. GAO-01-582. Washington, D.C.: May 10, 2001.

Nuclear Nonproliferation: DOE's Efforts to Assist Weapons Scientists in Russia's Nuclear Cities Face Challenges. GAO-01-429. Washington, D.C.: May 3, 2001.

Nuclear Nonproliferation: Security of Russia's Nuclear Material Improving; Further Enhancements Needed. GAO-01-312. Washington, D.C.: February 28, 2001.

Nuclear Nonproliferation: Implications of the U.S. Purchase of Russian Highly Enriched Uranium. GAO-01-148. Washington, D.C.: December 15, 2000.

Biological Weapons: Effort to Reduce Former Soviet Threat Offers Benefits, Poses New Risks. NSIAD-00-138. Washington, D.C.: April 28, 2000.

Weapons of Mass Destruction: Some U.S. Assistance to Redirect Russian Scientists Taxed by Russia. NSIAD-00-154R. Washington, D.C.: April 28, 2000.

Cooperative Threat Reduction: DOD's 1997-98 Reports on Accounting for Assistance Were Late and Incomplete. NSIAD-00-40. Washington, D.C.: March 15, 2000.

Nuclear Nonproliferation: Limited Progress in Improving Nuclear Material Security in Russia and the Newly Independent States. RCED/NSIAD-00-82.
Washington, D.C.: March 6, 2000.

Nuclear Nonproliferation: Status of Transparency Measures for U.S. Purchase of Russian Highly Enriched Uranium. RCED-99-194. Washington, D.C.: September 22, 1999.

Weapons of Mass Destruction: Effort to Reduce Russian Arsenals May Cost More, Achieve Less Than Planned. NSIAD-99-76. Washington, D.C.: April 13, 1999.

Nuclear Nonproliferation: Concerns With DOE's Efforts to Reduce the Risks Posed by Russia's Unemployed Weapons Scientists. RCED-99-54. Washington, D.C.: February 19, 1999.

Nuclear Nonproliferation and Safety: Uncertainties About the Implementation of U.S.-Russian Plutonium Disposition Efforts. RCED-98-46. Washington, D.C.: January 14, 1998.

Weapons of Mass Destruction: Review of DOD's June 1997 Report on Assistance Provided. NSIAD-97-218. Washington, D.C.: September 5, 1997.

Cooperative Threat Reduction: Status of Defense Conversion Efforts in the Former Soviet Union. NSIAD-97-101. Washington, D.C.: April 11, 1997.

Weapons of Mass Destruction: DOD Reporting on Cooperative Threat Reduction Assistance Has Improved. NSIAD-97-84. Washington, D.C.: February 27, 1997.

Nuclear Safety: Status of U.S. Assistance to Improve the Safety of Soviet-Designed Reactors. RCED-97-5. Washington, D.C.: October 29, 1996.

Weapons of Mass Destruction: Status of the Cooperative Threat Reduction Program. NSIAD-96-222. Washington, D.C.: September 27, 1996.

Nuclear Nonproliferation: Status of U.S. Efforts to Improve Nuclear Materials Controls in Newly Independent States. NSIAD/RCED-96-89. Washington, D.C.: March 8, 1996.

Nuclear Safety: Concerns With Nuclear Facilities and Other Sources of Radiation in the Former Soviet Union. RCED-96-4. Washington, D.C.: November 7, 1995.

Weapons of Mass Destruction: DOD Reporting on Cooperative Threat Reduction Assistance Can Be Improved. NSIAD-95-191. Washington, D.C.: September 29, 1995.

Weapons of Mass Destruction: Reducing the Threat From the Former Soviet Union—An Update. NSIAD-95-165. Washington, D.C.: June 17, 1995.

Weapons of Mass Destruction: Reducing the Threat From the Former Soviet Union. NSIAD-95-7. Washington, D.C.: October 6, 1994.

Nuclear Safety: International Assistance Efforts to Make Soviet-Designed Reactors Safer. RCED-94-234. Washington, D.C.: September 29, 1994.

Soviet Nuclear Weapons: Priorities and Costs Associated with U.S. Dismantlement Assistance. NSIAD-93-154. Washington, D.C.: March 8, 1993.

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