

**RUSSIAN-AMERICAN SECURITY
COOPERATION AFTER ST. PETERSBURG:
CHALLENGES AND OPPORTUNITIES**

Richard Weitz

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FOREWORD

President Vladimir Putin's recent speech at the Munich Security Conference, in which he accused the United States of pursuing an American-dominated world order without regard for international law and morality, vividly demonstrated the extent to which political relations between Russia and the United States have frayed in recent years. For their part, American observers criticize the Putin administration for weakening Russia's opposition parties, restricting broadcast media, and impeding nongovernmental organizations (NGOs). They also fault Russia's military and nuclear cooperation with Iran and its overbearing energy policies towards other countries. Many people in the United States and elsewhere called on President George W. Bush to boycott the July 2006 G-8 summit in St. Petersburg to protest these developments.

In some respects, however, considerable progress has been achieved during President Putin's tenure in the areas of Russian-American security cooperation. This monograph assesses the opportunities for further security cooperation between Russia and the United States, offering detailed policy suggestions in certain areas. It is part of a series of publications on aspects of Russian foreign policy that derived from a conference entitled "The U.S. and Russia: Regional Security Issues and Interests." It was conducted by the Strategic Studies Institute in partnership with the Ellison Center for Russian, East European, and Central Asian Studies at the Jackson School of International Studies at the University of Washington; and the Pacific Northwest National Laboratory's Pacific Northwest Center for Global Studies. The conference and this series represent

a part of SSI's efforts to provide expert analysis of some of the most urgent challenges to security in today's world.



DOUGLAS C. LOVELACE, JR.
Director
Strategic Studies Institute

BIOGRAPHICAL SKETCH OF THE AUTHOR

RICHARD WEITZ is a Senior Fellow and Director of Program Management at the Hudson Institute. By employing scenario-based planning and other techniques, he analyzes mid- and long-term national and international political-military issues. His current areas of research include U.S. foreign policy, Eurasia, defense reform, and homeland security. Dr. Weitz also has contributed articles to such journals as *The National Interest*, *The Washington Quarterly*, *NATO Review*, *Studies in Conflict and Terrorism*, and *The Journal of Strategic Studies*. His commentaries have appeared in the *Washington Post.com*, *The Washington Times*, *Wall Street Journal* (Europe), *Aviation Week & Space Technology*, and many Internet-based publications. He has appeared on the BBC, CNN, ABC, MSNBC, CBC, CTV, Al-Hurra, Al-Jazeera, VOA, Pacifica Radio, and additional broadcast media.

SUMMARY

This monograph assesses the opportunities for further security cooperation between Russia and the United States. It argues that, until a change of government occurs in both countries in 2008, the prospects for additional bilateral agreements to reduce strategic nuclear weapons, limit destabilizing military operations, jointly develop ballistic missile defenses, and enhance transparency regarding tactical nuclear weapons are unlikely. Near-term opportunities for collaboration in the areas of cooperative threat reduction, third-party proliferation, and bilateral military engagement appear greater. Accordingly, this monograph offers some suggestions for accelerating progress in these areas.

Ironically, the substantial improvement in Russian-American security relations during the last decade has decreased the prospects for further formal comprehensive bilateral agreements to reduce both countries' strategic nuclear arsenals. Despite some Russian interest in negotiating another comprehensive Russian-American arms control agreement, the Bush administration has repeatedly indicated that it considers comprehensive strategic arms control treaties largely irrelevant in today's world. The administration has also rebuffed Russian efforts to extend operational arms control agreements and take other steps to restrict the deployment of nuclear forces. U.S. officials argue that implementation of the May 2002 Russian-American Strategic Offensive Reductions Treaty (SORT) should suffice to place the bilateral strategic relationship on a stable basis since the treaty provides for major reductions in both sides' current nuclear arsenals.

Bilateral arms control reduction agreements might reemerge as an issue after a new U.S. administration assumes office in 2009. Primarily for financial reasons, Russian officials want to reduce their offensive nuclear weapons below the level set by SORT. In addition, the need to verify SORT after the expiration of START I in December 2009 will probably induce a modicum of near-term Russian-American cooperation in the area of strategic weapons.

For years Western officials, legislators, and analysts have called for additional arms control measures for American and Russian theater nuclear weapons (TNW). In accordance with the reciprocal Presidential Nuclear Initiatives of 1991-92, Russia and the United States have eliminated many TNW and removed other systems from operational deployment, transferring the warheads to separate secure storage facilities.

Nevertheless, many analysts consider this informal regulatory regime insufficient, and call for formal agreements designed to promote greater transparency (including obligatory data exchange and verification procedures) regarding the number and location of both parties' TNW. Several observers even advocate TNW's elimination on the grounds that their small size, scattered location, relative mobility, and weaker security and safety features render them more vulnerable to terrorist seizure than strategic warheads. Yet, the Russian government is unlikely to eliminate its TNW as long as Russian conventional forces suffer from persistent weaknesses and the North Atlantic Treaty Organization (NATO) retains comparable weapons. In addition, Russia's extensive TNW arsenal helps compensate for possible weaknesses in its strategic offensive nuclear systems.

Ballistic missile defense (BMD) represents a potential area of cooperation between both Russia

and the United States as well as between Russia and NATO. Bilateral Russian-American BMD collaboration has mostly concerned national missile defense (NMD), primarily against long-range ballistic missiles. Russia's work with NATO involves theater-wide missile defense (TMD) systems designed to intercept short- and medium-range missiles.

Since the early 1990s, Russian and American officials have discussed possible bilateral BMD cooperation. Yet, the Russian and American governments still disagree on the nature of the ballistic missile threat. In addition, Americans and Europeans have been unable to persuade their Russian interlocutors that NATO BMD plans will not ultimately aim to intercept Russian missiles. In July 2006, General Yuri Baluyevskiy, head of the Russian General Staff, published a comprehensive critique of U.S. BMD plans in which he accused American officials of seeking to negate the nuclear deterrents of both Russia and China in a quest for strategic superiority. In recent months, Russian officials have expressed more interest in defeating BMD systems than in helping develop them.

On a more positive note, the cooperative threat reduction process between Russia and its former Cold War adversaries remains one of the most successful examples of peacetime security collaboration between major military powers. Since major funding increases for weapons of mass destruction (WMD)-related threat reduction projects in Russia are unlikely, however, both sides should consider more creative solutions to several recurring problems that have impeded further progress. For example, measures to resolve disputes over access to sensitive Russian sites could include granting Russian representatives more opportunities to see U.S. WMD-related sites, hiring Russian firms

or personnel to help dismantle excessive WMD stocks in the United States, and supplying additional data concerning U.S.-funded threat reduction projects in Russia in return for more detailed information about Russia's WMD-related facilities and employees, especially those involved in Soviet-era biological and chemical weapons activities.

Opportunities for additional progress in curbing third-party WMD proliferation also exist. Chances for Russian-American collaboration on joint or multilateral threat reduction projects outside the former Soviet Union increased substantially in June 2003, when the G-8 governments agreed that the "Global Partnership Against the Spread of Weapons and Materials of Mass Destruction" could in principle support threat reduction activities in countries besides Russia. Another opportunity for Russian-American collaboration on threat reduction projects beyond Russia arose in May 2004, when U.S. Secretary of Energy Spencer Abraham announced a Global Threat Reduction Initiative (GTRI) to identify, secure, and dispose of stockpiles of vulnerable civilian nuclear and radiological materials and related equipment throughout the world. The GTRI involves close cooperation between the United States and Russia in securing these high-risk sources. At the July 2006 G-8 summit in St. Petersburg, Presidents Bush and Putin launched a Global Initiative to Combat Nuclear Terrorism and opened formal negotiations on a bilateral civil nuclear energy cooperation agreement.

Bilateral military engagement constitutes an important area for possible future initiatives. Although the Russian military often remains more impervious to outside contacts and influence than many other Russian institutions, this condition makes U.S. attempts to engage the Russian defense community all the more

essential. The armed forces invariably will play a decisive role in shaping Russia's future domestic and foreign policies. The Pentagon enjoys certain unique advantages in trying to affect the Russian military's evolution. For historical and other reasons, Russian defense leaders seem most comfortable working with their U.S. counterparts rather than with the armed forces of non-superpowers. Curtailing bilateral military contacts to protest Moscow's undemocratic practices or other policies will only keep the Russian armed forces a hostile institution.

RUSSIAN-AMERICAN SECURITY COOPERATION AFTER ST. PETERSBURG: CHALLENGES AND OPPORTUNITIES

Political relations between Russia and the United States have frayed in recent years. Russian government policies that have weakened opposition parties, restricted broadcast media, and impeded nongovernmental organizations (NGOs) have alarmed foreign observers and led Freedom House to downgrade Russia's status from "partly free" to "nonfree."¹ Many people in the United States and elsewhere called on U.S. President George W. Bush to boycott the July 2006 G-8 summit in St. Petersburg to protest these developments. In some respects, however, considerable progress has been achieved during President Vladimir Putin's tenure in the areas of Russian-American security cooperation. In April 2005, Secretary of State Condoleezza Rice hopefully told a Russian radio audience, "I believe that our military-to-military cooperation is perhaps the best that it has ever been."²

This monograph assesses the opportunities for further security cooperation between Russia and the United States. It argues that, until a change of government occurs in both countries in 2008, the prospects for additional bilateral agreements to reduce strategic nuclear weapons, limit destabilizing military operations, jointly develop ballistic missile defenses, and enhance transparency regarding tactical nuclear weapons are unlikely. Near-term opportunities for collaboration in the areas of cooperative threat reduction, third-party proliferation, and bilateral military engagement appear greater. Accordingly, the text offers some suggestions for making more rapid progress in these areas.

STALEMATED SUBJECTS

Strategic Nuclear Arms Control.

Ironically, the substantial improvement in Russian-American security relations in the last decade has decreased the prospects for further formal comprehensive bilateral agreements to reduce both countries' strategic nuclear weapons. Decrying what he termed the "stagnation" in Russian-American arms control, Putin in late June 2006 called for renewed bilateral dialogue with priority given to replacing the 1991 Strategic Arms Reductions Treaty (START) before it expires at the end of 2009.³ A few weeks earlier, the so-called Blix Commission had recommended that Russia and the United States commence negotiations on a legally binding arms control agreement that would reduce their strategic forces considerably below planned levels (to approximately 1,000 nuclear warheads in each arsenal) and include detailed stipulations for compliance. Its members further called on both countries to adopt major limitations on the peacetime operations and deployments of their nuclear forces.⁴ In June 2006, the two governments established a formal mechanism for continuous high-level bilateral dialogue on terrorism, nonproliferation, arms control, and other essential security issues.⁵ Presidential aide Sergey Prikhodko later said that Putin had briefly discussed strategic arms control issues with Bush at the July G-8 summit in St. Petersburg.⁶ Although neither government offered new proposals at the meeting, their foreign and defense ministries agreed to begin formally studying possible future strategic arms control measures.⁷

Members of the Bush administration, however, have repeatedly indicated that they consider comprehensive strategic arms control treaties largely irrelevant

in today's world, where threats from transnational terrorists and states of proliferation concern have become far more important than fears of a Russian-American confrontation. U.S. officials argue that implementation of the May 2002 Russian-American Strategic Offensive Reductions Treaty (SORT) should suffice to place the bilateral strategic relationship on a stable basis since the treaty provides for major reductions in both sides' current nuclear arsenals—to between 1,700 and 2,200 “operationally deployed strategic warheads” by December 31, 2012. In 2004, then National Security Advisor Rice said, “We believe that [SORT] is a transitional measure to a day when arms control will play a very minor role in U.S.-Russian relations, if a role at all.”⁸ Similarly, the head of the U.S. National Nuclear Security Administration, Linton Brooks, said in January 2006, “very detailed technical arms control agreements are not the future of our relationship with the Russian Federation.”⁹

The administration also has rebuffed Russian efforts to extend operational arms control agreements and take other steps to restrict the deployment of nuclear forces. In his May 2006 speech to the Russian Federal Assembly, Putin observed:

The arms race has entered a new spiral today with the achievement of new levels of technology that raise the danger of the emergence of a whole arsenal of so-called destabilizing weapons. There are still no clear guarantees that weapons, including nuclear weapons, will not be deployed in outer space. There is the potential threat of the creation and proliferation of small capacity nuclear charges. Furthermore, the media and expert circles are already discussing plans to use intercontinental ballistic missiles to carry non-nuclear warheads. The launch of such a missile could provoke an inappropriate response from one of the nuclear powers, could provoke a full-scale counterattack using strategic nuclear forces.¹⁰

Despite Moscow's entreaties, Washington has refused to ratify the Comprehensive Test Ban Treaty (CTBT) and opposes efforts by Russia and others to broaden restrictions on military activities in space.¹¹ The administration also continues to examine options for developing very low-yield nuclear weapons ("mini-nukes") and long-range ballistic missiles armed with conventional warheads despite continuing Russian protests.¹² Proposals for more operational arms control—such as lowering the readiness of strategic forces, restricting ballistic-missile-launching submarines (SSBNs) on patrol, and separating nuclear warheads from their means of delivery—also have not gained much support within the administration.

A statement by an unnamed official in the Russian Ministry of Defense (MOD) in late August 2006, just one month after the St. Petersburg summit, suggests these differences continue to impede progress. The MOD representative said neither Russia nor the United States is genuinely interested in achieving a new agreement limiting their strategic offensive weapons: "I doubt that either the Americans or we are ready for this or need it," *RIA Novosti* quoted the official as saying.¹³

Bilateral arms control reduction agreements might reemerge as an issue after a new U.S. administration assumes office in 2009. Primarily for financial reasons, Russian officials want to reduce their offensive nuclear weapons below the level set by SORT.¹⁴ Nevertheless, they are unlikely to proceed unilaterally given the importance of Russia's nuclear arsenal in its foreign and defense policies. Although pledging to fulfill Russia's arms commitments, Defense Minister Sergey Ivanov cautioned Americans that, "Russia does not intend to give up its nuclear capability as it is still a key deter-

rent and crucial instrument in protecting our national interests and achieving certain political objectives.”¹⁵ When asked at his January 31, 2006, press conference why Russia deserved to be in the G-8, Putin told the assembled world media: “the G-8 is a club which addresses global problems and, first and foremost, security problems. Can someone in this hall imagine resolving, shall we say, problems concerning global nuclear security without the participation of the largest nuclear power in the world, the Russian Federation? Of course not.”¹⁶

Besides reasons of prestige, many Russians also argue that the unprecedented effectiveness of U.S. conventional precision-guided munitions in the former Yugoslavia, Afghanistan, and Iraq demonstrated that Russia needs a strong nuclear arsenal to balance its conventional weaknesses. Moreover, they point out that upgrading Russia’s conventional forces would entail substantially greater expenditures than maintaining adequate nuclear forces. In his May 2006 address to the Federal Assembly, Putin stressed that Russia could not afford to wage a comprehensive arms race with the United States, but instead had to rely on less costly asymmetric means—and then discussed Russia’s new strategic systems. Concerns about a potential long-term Chinese challenge to Russian interests have also reinforced the perceived need to retain a credible nuclear arsenal.¹⁷

The two most important Russian doctrinal statements, the January 2000 *National Security Concept* and the April 2000 *Military Doctrine*, explicitly accept the necessity of employing nuclear weapons under certain conditions.¹⁸ In October 2003, Ivanov published more specific requirements for the armed forces that emphasized the need to combine conventional forces with a

robust nuclear arsenal to achieve the country's military priorities.¹⁹ These declaratory statements still appear operationally relevant since Russia's armed forces continue to conduct large-scale exercises with scenarios involving possible nuclear use.²⁰

At a minimum, Russia's nuclear forces and strategy aim to prevent the United States or any other country from launching a large-scale direct attack against Russian territory. Russian strategists seem to fear most an American attempt to decapitate the Russian government. They worry that, by incapacitating Russia's leaders before they could organize a retaliatory strike, U.S. decisionmakers might anticipate substantially disrupting any Russian military response. The attack could employ submarine-launched ballistic missiles (SLBMs) launched with depressed trajectories from Trident submarines on patrol near Russia or stealthy conventional weapons that would exploit weaknesses in Russia's early warning systems. U.S. ballistic missile and air defense systems would then attempt to intercept any Russian nuclear delivery vehicles that had survived the American first strike and been launched in reprisal.²¹

Russian strategists have also long considered the option of launching a limited nuclear strike to alter the course of a conventional conflict that Russia risked losing. The January 2000 *National Security Concept*, for example, implied that Russia could use non-strategic nuclear forces (Tactical Nuclear Weapons [TNW] in American parlance) to resist a conventional attack without engendering a full-scale nuclear exchange. A related function of Russian nuclear forces would be to prevent other countries from escalating a conventional conflict to nuclear use. For instance, Russia could threaten to retaliate disproportionately should an ad-

versary initiate use of nuclear weapons in a battle. In a January 12, 2006 article, "Military Doctrine: Russia Must Be Strong," published in the Russian *Vedomosti* newspaper, Ivanov said Russia's first defense priority for the 2006-10 period is "to sustain and develop strategic deterrent forces at the minimum level needed to guarantee that present and future military threats are deterred."²² In an article entitled, "The General Staff and the Objectives of Military Development," which appeared in *Krasnaya Zvezda* on January 25, 2006, General Yuriy Baluyevskiy, Chief of the Russian General Staff and First Deputy Defense Minister, likewise wrote that "Russia's nuclear forces must retain sufficient potential to ensure strategic and regional deterrence."

Russia possesses substantial forces in all three categories of the traditional offensive nuclear triad. The country's arsenal includes almost 100 strategic bombers (capable of carrying nuclear-armed long-range cruise missiles, nuclear-armed short-range attack missiles, and nuclear gravity bombs), a dozen nuclear submarines equipped with multiple independent reentry vehicled (MIRV-ed) ballistic missiles, and hundreds of land-based intercontinental ballistic missiles (ICBMs), which remain the strongest leg.²³ Many of the latter still have multiple warheads because the Russian government declared itself no longer bound by the second Strategic Arms Reduction Treaty (START II), which prohibited MIRV-ed ICBMs, after the United States withdrew from the Anti-Ballistic Missile (ABM) Treaty in June 2002.²⁴ Russia's ability to retain its large MIRV-ed missiles in effect solved the problem of how to sustain an extensive nuclear force within fiscal limits. Had the START II prohibition come into force, Russia would have had to reconstruct its entire strategic arsenal.²⁵ In January 2005, Ivanov said that Russia would

only destroy the ballistic missiles it is required to decommission under the Russian-American Strategic Offensive Reductions Treaty (SORT), signed by both governments in Moscow in May 2002, if the United States did likewise.²⁶ Russian officials and analysts, including President Putin at his January 31, 2006, press conference, have repeatedly asserted that Russia has been developing advanced missiles and warheads that can circumvent any U.S. ballistic missile defenses.²⁷ In April 2006, one of Russia's chief missile designers insisted that Russia could retain approximately 2,000 strategic nuclear warheads through 2020.²⁸

The need to verify SORT will probably induce a modicum of near-term Russian-American cooperation in the area of strategic weapons. The treaty lacks its own verification provisions, and both governments have been relying on START I in their absence. This accord—with its extensive data exchange requirements, on-site inspection, and other compliance measures—expires in December 2009. Without a new agreement, both governments will have to rely primarily on less effective national means of verification after that date. This situation could prove problematic. Observers note that the lack of interim deadlines for reductions means that the SORT warhead limits will both take effect and expire on the same day. Questions also exist about the treaty's lack of detailed verification procedures, the absence of a timetable and rules for warhead reductions, its 90-day withdrawal clause, and other uncertainties associated with the three-page document.²⁹ The U.S. intelligence community has indicated that these uncertainties prevent its analysts from verifying Russia's treaty compliance with high confidence.³⁰ Although Russia and the United States are unlikely to agree to reduce their strategic force levels below those speci-

fied in SORT during the next 2-3 years, the two governments will probably initiate discussions on whether to augment the START I verification provisions or merely to extend the existing provisions beyond 2009.

Reducing Tactical Nuclear Weapons.

For years Western officials, legislators, and analysts have called for additional arms control measures for American and Russian TNW, also described as “theater” or, in some Russian texts, as “operational” nuclear weapons. Two recent examples include a November 2005 report by the NATO Parliamentary Assembly and a February 2006 report by a Council of Foreign Relations task force.³¹ In accordance with the reciprocal Presidential Nuclear Initiatives (PNI) of 1991-92, Russia and the United States have eliminated many TNW and removed other systems from operational deployment, transferring the warheads to separate secure storage.

Nevertheless, some analysts consider this informal regulatory regime insufficient, and call for formal agreements designed to promote greater transparency (including obligatory data exchange and verification procedures) regarding the number and location of both parties’ TNW. Like previous Soviet-American and Russian-American arms control agreements, the May 2002 Russian-American Strategic Offensive Reductions Treaty does not address the TNW issue. In subsequently explaining this exclusion before the Senate, then Secretary Rumsfeld explained that the parties decided it would prove too difficult to address many of these asymmetries:

We might have argued that Russia's proximity to rogue nations allows them to deter these regimes with tactical systems; because they are many thousands of miles away

from us, the United States distance from them requires more intercontinental systems possibly than theater systems. This could have resulted in a mind-numbing debate over how many non-strategic systems . . . should equal an intercontinental system, or open the door to a discussion of whether an agreement should include all nuclear warheads regardless of whether they're strategic or tactical.³²

Several observers have advocated eliminating all TNW on the grounds that their small size, scattered location, relative mobility, and weaker security and safety features make them more at risk for terrorist seizure than strategic warheads.³³ A RAND assessment concludes that many Russian operational commanders can launch ground-based TNW without further central government approval after the initial deployment decision.³⁴

Neither Russia nor the United States has allowed monitors from the other country to conduct technical inspections at its TNW storage sites. In early June 2005, Assistant Secretary of State for Arms Control Stephen Rademaker said Russian officials continued to evince “very little interest in talking to us” on this subject. A few days later, the DoS complained that Moscow had failed to provide adequate information regarding its PNI-related reductions.³⁵ Rademaker repeated this complaint during a Moscow press conference on April 12, 2006.³⁶ Russian officials will likely continue to resist extending threat reduction activities to their TNW because they believe this opacity could help deter a preemptive NATO attack.³⁷ Uncertainties regarding the number and location of Russia’s TNW mean potential adversaries cannot be assured of destroying them in a first strike. The Russian government is unlikely to eliminate its TNW as long as Russian conventional forces suffer from persistent weaknesses and NATO retains

comparable weapons. In addition, Russia's extensive TNW arsenal helps compensate for concerns about the viability of its strategic offensive nuclear systems. Although the precise number of Russian TNW remains in dispute, most assessments place the number in the thousands, meaning that TNW represents one of the few armaments categories where Russia enjoys military superiority over NATO.³⁸ These considerations weigh against proposals to consolidate Russia's TNW, even if dispersal makes them more vulnerable to terrorists.³⁹ The Russian media has reported that the military has developed a decade-long program to upgrade thousands of Russia's existing TNW with a smaller number of next-generation systems.⁴⁰

Securing Moscow's agreement to consolidate and better secure TNW would probably require concessions regarding U.S. TNW still based in Europe. Their presence visibly irritates Russian leaders, who point out that all their TNW now lie solely within Russian Federation territory. Although Russian concerns about a NATO military attack have declined, General Baluyevskiy observed in late 2003 that the hundreds of air-deliverable U.S. TNW deployed in Europe "are for Russia acquiring a strategic nature since theoretically they could be used on our command centers and strategic nuclear centers."⁴¹ In early June 2005, Ivanov said that Russia was "prepared to start talks about tactical nuclear weapons only when all countries possessing them keep these weapons on their own territory."⁴²

American officials counter that their own TNW play an essential role in sustaining NATO's nuclear deterrence. Even without a formal change in the alliance's nuclear doctrine, however, European governments may decide to stop purchasing warplanes or other technologies required to deliver U.S. B-61 nuclear bombs,

effectively undermining the viability of NATO's principle of nuclear sharing. Not only would such a move save funds, but opinion surveys currently indicate that most European publics do not support the continued deployment of U.S. TNW on their territories.⁴³ Yet, even an American offer to redeploy all U.S. TNW to North America might prove insufficient to convince Moscow to agree to bilateral TNW arms control. Russian officials note Washington could return U.S. TNW to Europe in a few hours unless NATO irreversibly destroyed its storage sites and related infrastructure.⁴⁴ In addition, it would prove difficult to verify any agreement since TNW delivery systems (i.e., attack aircraft) are typically dual-use systems that also can launch conventional strikes. At present, the issue appears in abeyance. In June 2006, *ITAR-TASS* quoted a senior MOD official as saying Russia would not negotiate with the United States or any other country regarding its TNW because no international treaties applied to them.⁴⁵

Ballistic Missile Defense Cooperation.

BMD represents a potential area of cooperation between both Russia and the United States, and Russia and NATO. Bilateral Russian-American BMD collaboration has mostly concerned national missile defense (NMD), primarily against long-range ballistic missiles. Russia's work with NATO involves theater-wide missile defense (TMD) systems designed to intercept short- and medium-range missiles. Russia currently deploys an operational (though perhaps not functional) NMD system around Moscow that uses highly destructive nuclear warheads, which partly compensates for its absence of U.S.-style "hit-to-kill" technology.⁴⁶ The Russian government continues to upgrade the system.⁴⁷ It

also has announced plans to stop relying on the early warning radars located in other former Soviet republics and instead construct new complexes that would “provide an earlier warning on launches of all missiles, including intercontinental ballistic missiles as well as tactical and cruise missiles.”⁴⁸ Of the eight Soviet early-warning radars, only three are located in Russia.⁴⁹

Since the early 1990s, Russian and American officials have discussed possible bilateral BMD cooperation. Russian aerospace, defense, and other firms have evinced a long-standing interest in such collaboration—and have persistently overestimated U.S. interest in their potential contributions.⁵⁰ Russian analysts likewise argue that Russia’s location and defense technologies should give it a central role in any global NMD framework. For example, a 2005 report observes that the “ground-based radars of the Russian strategic early warning system possess unique capabilities to survey and control the missile threat directions in the vast area from the Middle East to the Korean peninsula—the main source of the threat for mankind today.”⁵¹

Although generally unenthusiastic about American BMD programs, Russian officials have perennially hoped that NATO countries will purchase Russian TMD technologies and weapons systems. In 2003, Deputy Foreign Minister Sergey Kislyak said that Russians “have our own anti-missile systems that might be useful, and they are among the world’s best . . . we are very serious partners.”⁵² In 2005, Ivanov offered to contribute the S-300 and forthcoming S-400 air defense systems to a future European TMD system, including one directed against the growing threat of cruise missiles.⁵³ In late March 2006, Russian Air Force Commander Vladimir Mikhailov told a meeting of foreign

military attaches that the S-400 will enter combat duty sometime in 2006. Designated by NATO as the SA-20 *Triumph*, the S-400 is an advanced surface-to-air missile system designed to destroy aircraft, cruise missiles, and short- and medium-range ballistic missiles at ranges of up to 400 kilometers (250 miles).⁵⁴

Various impediments have derailed bilateral Russian-American collaboration on BMD issues. Much of the initial cooperation centered on plans for a joint technology demonstration program, the Russian-American Observation Satellite (RAMOS). Although both countries had developed the requisite technologies for this project, disputes over whether to amend the ABM Treaty and the increasing determination of the United States to deploy actual BMD systems impeded progress. In addition, both sides accused the other of showing insufficient interest in the project. Citing years of stalled progress amid bureaucratic disputes, DoD terminated the program in February 2004 by declining to request funding for the program in the FY2005 defense budget request.⁵⁵

The Russian and American governments still disagree regarding the nature of the ballistic missile threat. Most Russian defense analysts typically discount the threat from ballistic missiles relative to other security challenges such as defending against terrorists employing different means of attack. Russian officials accordingly have made clear that investing in enormously expensive NMD-related technologies is not a current defense priority. Russian analysts also fear U.S. BMD efforts could spur first China and then India, Japan, and other countries to acquire or increase their own nuclear arsenals in a chain reaction of proliferation along Russia's periphery.⁵⁶ Disagreements over taxes and legal liability continue to prevent the long-

planned establishment of a Joint Data Exchange Center in Moscow.⁵⁷ The complex would allow Russian and American military personnel to monitor global missile launches around the clock and notify each other about their own defense missile and space rocket launches. It also could encourage bilateral discussions on missile defense issues between the two countries with the most advanced BMD and missile launch detection systems.

In the area of TMD, Russia and NATO have developed air and missile defense systems that employ different technical standards, command-and-control procedures, and operational doctrines. They have only recently undertaken initiatives to overcome these interoperability problems. NATO governments had been cooperating for many years on BMD projects before they decided, primarily for policy reasons, to incorporate a Russian contribution. The long-standing ties between NATO defense firms have limited their interest in working with Russian companies. Restrictive technology transfer policies regularly impede cooperation between NATO countries; the barriers with Russia are even greater. Furthermore, Russia's growing military cooperation with China also could reinforce caution among NATO governments about sharing BMD technologies. Not only could China use any intelligence in this area to overcome U.S. and Japanese BMD, but Chinese experts might (like their Russian counterparts) share such insights with North Korea or Iran.

A more serious obstacle has been the inability of Americans and Europeans to persuade their Russian interlocutors that their BMD plans will not ultimately aim to intercept Russian missiles. Colonel-General Nikolai Solovtsov, the commander of Russia's Strategic Missile Forces (*Raketniye voiska strategicheskogo*

naznacheniya [RVSN]), has said: "The projected scale of the missile defense system being deployed by the United States is so substantial that concerns about its negative impact on Russia's nuclear deterrence potential are entirely well-founded: this could disrupt strategic stability."⁵⁸ In May 2006, General Baluyevskiy said that someone had to be ignorant of geography to not see that the only logical target of the American BMD systems proposed for deployment in Poland and its neighbors would be ICBMs from Russia rather than Iran.⁵⁹ Baluyevskiy and other Russians have claimed that the United States could covertly convert missile interceptor launchers based in Eastern Europe to launch offensive ballistic missiles against Russia without the approval of the host governments. Partly because of Russian complaints and threats, East European publics and their governments remain uncomfortable with the deployment, which might lead the United States to deploy most of its European BMD assets in the United Kingdom.⁶⁰

NATO's March 2005 decision to develop an Active Layered Theatre Ballistic Missile Defense (ALTBMD) system by the end of this decade appears to have prompted several Russian inquiries as to how Washington would react if Moscow withdrew from the 1987 Intermediate-Range Nuclear Forces (INF) Treaty. This pioneering accord banned all Soviet and U.S. ground-launched ballistic and cruise missiles with ranges of 500-5,500km. Ivanov raised the withdrawal issue with then U.S. Secretary of Defense Donald Rumsfeld when he visited Washington in January 2005.⁶¹ Although Ivanov said neither country planned to withdraw soon, he complained that the accord placed them in a uniquely unfortunate position of being the only countries in the world legally prohibited from possessing intermediate-

range missiles: "When we signed the treaty, nobody besides the US and USSR possessed these missiles. I don't think anyone even in their worst dreams could imagine missile technology could spread so quickly. . . . I think you may see all countries have them except Russia and the U.S."⁶² Subsequently, the Russian media covered an extensive debate among Russian strategists on the INF issue.⁶³

In March 2006, General Vladimir Vasilenko, the head of the Ministry of Defense Research Institute, said even more explicitly that Russia might need to withdraw from the treaty.⁶⁴ In August 2006, the unnamed MOD official cited above reiterated Ivanov's argument that the INF Treaty, by restraining only Russia and the United States, was a Cold War relic in a world where in a few decades almost any country could acquire short and intermediate range missiles. Citing the Bush administration's withdrawal from the ABM Treaty in June 2002, the MOD representative warned: "If there is a pressing need, Russia will pull out of the ISRM [INF] Treaty unilaterally." Although intermediate-range missiles would facilitate Russia's implementation of its new doctrine regarding preemptive strikes against foreign-based terrorists, they also could help overcome a NATO TMD system.

In recent months, Russian officials have expressed more interest in defeating BMD systems than in helping develop them. In particular, Putin and other Russian leaders have claimed repeatedly that the Russian military has developed revolutionary new strategic technologies. In his January 31, 2006, news conference, Putin boasted that Russia had developed a new strategic missile that could change course in flight and, thanks to its unpredictable trajectory, overcome existing BMD systems.⁶⁵ In May 2006, General Baluyevskiy

said that exercises conducted in February of that year had confirmed the effectiveness of Russia's new BMD penetration technologies.⁶⁶ Nevertheless, the capabilities and affordability of these systems remains uncertain.

In May 2006, the U.S. House of Representatives passed an amendment to the FY2007 National Defense Authorization Act endorsing greater Russian-American BMD cooperation. It specifically called for innovative forms of collaboration, including the possible use of Russian missiles as exercise targets for U.S. BMD systems and American use of launch data from Russia's early warning radars.⁶⁷ The lack of Russian interest in the proposal became evident in late July 2006, when General Baluyevskiy published under his own name a comprehensive critique of U.S. BMD plans in Russia's leading defense weekly, *Voenno-Promishlenniy Kur'er*. Among other points, Baluyevskiy accused American officials of seeking to negate the nuclear deterrents of both Russia and China in a quest for strategic superiority.⁶⁸

Despite Russian objections, the United States and other NATO members plan to continue their BMD programs. In May 2006, a 4-year "NATO Missile Defense Feasibility Study" concluded that the alliance could construct a BMD system capable of defending against the growing missile threat from Iran, Syria, and North Korea.⁶⁹ American officials also cite the need to help defend non-European allies such as Israel and Japan against regional missile threats. The diverging threat assessments between Russia and Western governments, together with their poor record of past BMD collaboration, underscores the need for modest expectations in this area. Rather than achieving extensive technological sharing or a common BMD ar-

chitecture, a more attainable goal would be enhanced systems interoperability and a better understanding of each party's BMD development plans and operational concepts. Joint tracking of space objects appears to be another area of mutual interest. During his April 2006 trip to Russia, General James Cartwright, the head of U.S. Strategic Command (STRATCOM), discussed possible collaborative space surveillance, as well the new danger presented by short- and medium-range missile proliferation.⁷⁰ Cooperative monitoring programs could help assuage Russian concerns about alleged American plans to militarize outer space.

AREAS OF POTENTIAL NEAR-TERM OPPORTUNITY

Bilateral Threat Reduction Programs.

The cooperative threat reduction (CTR) process between Russia and its former Cold War adversaries represents one of the most successful examples of peacetime security collaboration between major military powers. These projects have helped dismantle Russia's strategic weapons, enhance the security and safety of its weapons of mass destruction (WMD) and related material, disrupt the trafficking of nuclear-related items across Russia's borders, and redirect former Soviet nuclear enterprises and scientists into other employment. Frequent interaction in this area helps promote the bilateral dialogue on nonproliferation, elevates the attention paid to these issues in both countries, and appears to further mutual trust between Russian and American military personnel, government officials, scientists, and private contractors. Through these programs, the parties often obtain more informa-

tion about each other's WMD-related capabilities and policies than they acquire through formal arms control accords.⁷¹ In short, cooperative threat reduction has advanced both parties' interests and, more generally, made the world safer.

Although no public evidence exists that Russia has ever lost control over any of its nuclear, chemical, or biological weapons, concerns persist that terrorists, rogue states, or other malign actors could gain access to them. For example, the U.S. intelligence community, while acknowledging Russian improvements in "upgrading its physical, procedural, and technical measures to secure its nuclear weapons against both external and internal threats," nevertheless remains concerned about certain "risks" and "vulnerabilities," and concluded that "undetected smuggling" of weapons-usable nuclear material "has occurred."⁷² Since major funding increases for WMD-related threat reduction projects in Russia is unlikely, however, both sides should consider more creative solutions to several recurring problems that have impeded further progress.⁷³

In June 2006, Russian and American negotiators finally resolved their differences over liability that had prevented renewal of the CTR umbrella agreement. The new accord, which lasts until 2013, grants U.S. personnel working on threat reduction activities a comprehensive set of protections, exemptions, and rights—including freedom from taxes and customs, various privileges and immunities, and the right to verify that any assistance is used only for intended purposes. The June 2006 deal permits U.S. employees working on existing projects to continue to enjoy almost complete protection from liability for damages. For American workers engaged in projects that begin

after June 2006, however, the two parties agreed to negotiate more restrictive liability provisions.⁷⁴

Although this long-awaited extension is welcome, American access to Russian WMD sites still remains a key area of contention. The February 2005 summit between Bush and Putin at Bratislava resolved some problems. A subsequent analysis concluded that Russian-American teams installed more security and accounting upgrades at buildings containing nuclear material in FY2005 than in any previous fiscal year.⁷⁵ Nevertheless, Russians still complain that, in the process of helping to store, move, and dismantle their excessive WMD stockpiles, Americans gain unreciprocated insights into Russian military practices. Formal arms control agreements typically include verification measures that guarantee parties roughly equivalent access for inspection and monitoring. The current bilateral threat reduction framework does not give Russian personnel the same level of access to American weapons elimination programs and facilities because the Russian government does not pay for these U.S.-based activities.

These feared intelligence asymmetries have led Russian officials to impose substantial limitations on U.S. access to certain Russian WMD sites, including facilities suspected of continuing research and development of biological and chemical weapons (CW) in violation of international agreements.⁷⁶ For example, DoS representatives could not gain access to certain sensitive biological facilities when they tried to involve them in the projects of the International Science and Technology Center (ISTC).⁷⁷ These restrictions conflict with American laws that require on-site visits to verify the proper expenditure of U.S. funds. The access problems also may explain the surprisingly low percentage

of American and European threat reduction spending allocated to biological weapons projects in Russia. Russian officials also continue to deny access to certain nuclear warhead storage and remanufacturing facilities.⁷⁸

Possible solutions to these access disputes include granting Russian representatives more opportunities to see U.S. WMD-related sites, hiring Russian firms or personnel to help dismantle excessive WMD stocks in the United States, and supplying additional data concerning U.S.-funded threat reduction projects in Russia in return for more detailed information about Russia's WMD-related facilities and employees, especially those involved in Soviet-era biological and CW activities. Both sides also could relax their rules for granting visas to inspectors provided their legitimate security and immigration concerns were met. With time, continuing improvements in monitoring technology could reduce the need for American and other international inspectors.⁷⁹ The Russian government already has started permitting greater access to its CW storage sites in return for reductions in the number of foreign inspectors operating there.⁸⁰

Both Russian and American officials appreciate the need to enhance Russia's financial and other contributions to threat reduction activities. The Russian government accordingly recently changed its formula for funding CW elimination to compensate for lower than anticipated foreign financial contributions. It now increases its own expenditures when external support falls short of expectations. (Russia has agreed to eliminate its stockpile of CW by 2012 in accordance with the provisions of the 1997 Chemical Weapons Convention.) In 2005, the federal budget doubled allocations for CW destruction to almost \$400 million. Russia's spending on other threat reduction activities also has increased.⁸¹

The current government's improving fiscal situation would allow it to spend even more on these projects. As of April 2006, the government held approximately \$200 billion of gold and hard currency reserves.⁸² In March 2006, Deputy Prime Minister Alexander Zhukov said that Russia's Stabilization Fund, which sets aside earnings from the country's rising energy sales to meet future needs, would exceed \$71 billion in early 2007 and \$107 billion in early 2008.⁸³

Further increases in Russian support for threat reduction initiatives should have several beneficial effects. First, it would affirm Russian officials' commitment to nonproliferation in general. Second, it would elevate Russia's status to that of a genuine partner in a common endeavor. Third, program integration could improve if the Russians' role in designing and implementing projects increased due to this enhanced status. Finally, greater Russian government support is essential for sustaining threat reduction programs over the long term. Current U.S. legislation envisages that the Russian government will assume full responsibility for managing the core threat reduction programs in Russia as early as 2013.⁸⁴ In addition, the involvement of both Russian government officials and Russian NGOs is critical for securing essential public support in communities hosting CTR and other WMD-related sites.⁸⁵

Restructuring the Russian and American threat reduction bureaucracies also could strengthen program integration and implementation. In particular, both governments should designate a senior nonproliferation official to improve the development and application of the threat reduction program. This person should enjoy direct presidential access, influence funding decisions, and command sufficient authority to set priorities, eliminate gaps, and curb unnecessary redundancies. The individual also should be able to

determine the roles, methods of interaction, and procedures for resolving disputes and sharing information for the various agencies involved in threat reduction projects. Reviving an institution like the Gore-Chernomyrdin Commission also could enhance nonproliferation efforts. Finally, joint or parallel program oversight by both national legislatures could minimize divergent perceptions and misunderstandings.

At their February 2005 summit in Bratislava, Presidents Bush and Putin announced the establishment of a bilateral Senior Interagency Working Group for Cooperation on Nuclear Security, chaired by the U.S. Secretary of Energy and the Director of Russia's Federal Atomic Energy Agency (Rosatom), to oversee implementation of the summit initiatives on nuclear security cooperation. The group already has developed a Joint Action Plan for security upgrades at Rosatom and Russian MOD facilities and "prioritized timelines" for the repatriation of highly enriched uranium (HEU) fuel from foreign countries to Russia and the United States. It delivers reports on these issues to the Russian and American presidents every 6 months. The group also conducts tabletop exercises on managing the consequences of nuclear incidents and organizes bilateral workshops on sharing best practices and promoting a "security culture."⁸⁶ Although the group will help identify CTR-related problems, actually resolving disputes or exploiting opportunities will require continued presidential intervention and an institution with greater bureaucratic clout.

Curbing Third-Party WMD Proliferation.

Since the nearly catastrophic outcome of the Cuban Missile Crisis of 1962, Russia and the United States have cooperated regularly on nonproliferation issues

despite occasionally acute disagreements on specific cases.⁸⁷ The Joint Statement on Nuclear Security Cooperation issued at the Bratislava summit rightly affirmed that both governments “bear a special responsibility for the security of nuclear weapons and fissile material.” In May 2004, the Russian government reaffirmed its support for U.S.-led efforts to curb illicit trafficking in WMD, ballistic missiles, and related items by joining the Proliferation Security Initiative (PSI). Since then, Russian representatives have participated in several PSI exercises and workshops. They also have cooperated on WMD interdiction activities under the auspices of the NATO-Russia Council.⁸⁸ On the diplomatic and technical plane, Russia and the United States regularly work through the United Nations (UN), the International Atomic Energy Agency (IAEA), and other international institutions to counter the spread of WMD and their related technologies. One barrier to greater Russian-American collaboration against WMD proliferation has been the need to share intelligence data. It remains too early to determine if the February 2006 agreement between Russia and NATO, in which they pledged to exchange classified information in their joint naval patrols of the Mediterranean under the auspices of Operation ACTIVE ENDEAVOR, marks a breakthrough in this area.⁸⁹

Opportunities for Russian-American collaboration on joint or multilateral threat reduction projects outside the former Soviet Union increased substantially in June 2003, when the G-8 governments decided to expand the scope of their “Global Partnership Against the Spread of Weapons and Materials of Mass Destruction.” Launched at the June 2002 G-8 summit in Kananaskis, Canada, the Global Partnership provides for enhanced coordination of national programs relat-

ing to WMD nonproliferation, counterterrorism, and nuclear safety. The Bush administration has pledged \$10 billion to the initiative over a 10-year period, and the other G-8 members have promised a comparable amount ("10+10 over 10"). As part of its own Global Partnership contribution, the Russian government has pledged to spend \$2 billion on threat reduction activities during the 10-year period. Since 2002, Russia has increased its spending on chemical disarmament substantially, decommissioning nuclear-powered submarines, and increasing security at the country's nuclear facilities.⁹⁰

At first, Russian representatives expressed concerns that including additional countries would dilute the funds available for use within Russia. More recently, they have endorsed expanding threat reduction activities in other countries, provided that projects addressing primarily Russian concerns remained a priority.⁹¹ With Moscow's acquiescence, the G-8 governments in September 2004 decided to allocate funds to Ukraine, which is now negotiating legal frameworks and specific projects with potential donors.⁹² At their July 2005 summit in Gleneagles, the Global Partners made clear "the Partnership's openness in principle to further expansion in accordance with the Kananaskis documents, and in the context of the ongoing focus on projects in Russia."⁹³ The near-term priority for the Global Partnership, however, is to secure additional contributions to reach the \$20 billion floor and, most importantly, to turn more of these pledges into actual projects.

Another opportunity for Russian-American collaboration on threat reduction projects beyond Russia arose in May 2004, when U.S. Secretary of Energy Spencer Abraham announced a Global Threat Reduction Initiative (GTRI) to identify, secure, and dispose of stockpiles of vulnerable civilian nuclear and radiologi-

cal materials and related equipment throughout the world. The GTRI has four core elements. The first two elements consist of U.S. Department of Energy-funded efforts to repatriate Soviet/Russian- and U.S.-origin HEU from foreign countries. In accord with a Russian-American intergovernmental agreement signed in late May 2004, Russia has already retrieved over 100 kilograms of “fresh” (i.e., unused) HEU from 8 of the 17 countries (Bulgaria, the Czech Republic, Latvia, Libya, Romania, Serbia and Montenegro, and Uzbekistan) with Soviet-designed research reactors.⁹⁴

For several years, Russian legal requirements—especially their stipulation for a complex environmental impact assessment before each shipment, and the requirement that some proceeds from each repatriation effort go to rehabilitating Russian territory contaminated by past nuclear activities—impeded repatriation of spent nuclear fuel. At their February 2005 Bratislava summit, however, both governments agreed to accelerate their joint repatriation efforts and complete repatriation of all Soviet/Russian-origin HEU fresh and spent fuel from other countries by the end of 2006 and 2010, respectively.⁹⁵ In April 2006 Russia accepted, for the first time since its reemergence as an independent state, a shipment of spent HEU fuel from a research reactor in Uzbekistan.⁹⁶ In May 2006, however, a Russian nuclear industry official said Russia did not expect to remove all spent nuclear fuel from the 20 Soviet-provided research reactors in 17 foreign countries until 2012-13.⁹⁷ One way to accelerate repatriation projects would be for Russia to conduct a new environmental assessment for each country or reactor, rather than for each shipment.

The third GTRI element, the Reduced Enrichment for Research and Test Reactors (RERTR) program, funds efforts to convert the cores of targeted civilian

research reactors worldwide, many of which are Soviet-built, to use low-enriched uranium (LEU) rather than HEU fuel.⁹⁸ The fourth element, the International Radiological Threat Reduction program, involves identifying and securing nuclear materials and related equipment not addressed by pre-GTRI activities (referred to as “gap” material). According to the IAEA, millions of radioactive sources exist throughout the world, including thousands of potentially dangerous items in the former Soviet republics. IAEA records also indicate a sharp rise recently in reported incidents of smuggling of radiological materials.⁹⁹ The international community has made disposing of the approximately 1,000 radioisotope thermoelectric generators (RTGs) located in the former Soviet Union a priority. These remote power sources present both environmental and security hazards. Thieves and vandals often release radioactivity in the course of stripping precious metals from the sites, and terrorists could incorporate their radioactive materials into “dirty bombs.” In the past 3 years under GTRI, Russia and the United States have collaborated to secure enough radiological material from 23 different sites in the Russian Federation, including from the volatile Chechnya region, to manufacture over 200 radiological dispersion devices.¹⁰⁰

Thanks to the Global Partnership and the GTRI, Russian and American nonproliferation experts are in a better position to collaborate on threat reduction activities outside Russia. The GTRI has involved close cooperation between the United States, Russia, and the IAEA in the Russian Research Reactor Return Program, the RERTR Program, and the Tripartite Initiative to secure high-risk radioactive sources throughout the world. The February 2005 Bratislava declaration said that Russia and the United States “will jointly ini-

tiate security ‘best practices’ consultations with other countries that have advanced nuclear programs.” The two governments already have begun to share insights with other states and the IAEA itself.¹⁰¹

The Russian government recently has launched plans to restructure its civilian nuclear enterprises into a large state-owned vertically integrated holding company, variously referred to as “Rosatomprom” or merely “Atomprom.” The idea is to create something along the lines of France’s Areva, Germany’s Urenco, or, for natural gas, Russia’s Gazprom, except that the nuclear conglomerate would remain wholly state-owned given its crucial role in sustaining Russia’s strategic forces. Analysts expect that consolidating all uranium mining, reactor design and construction, and related civilian nuclear power assets—amounting to about 200 enterprises and over 300,000 people—into a single one-stop company will reduce costs, streamline administration, and strengthen Russia’s position in international markets.¹⁰² Russian firms already occupy leading positions in the sale of uranium fuel and the construction of nuclear power plants. To generate the additional revenue needed to fulfill the government’s ambitious plans to revitalize Russia’s nuclear industry, the country’s nuclear establishment plans to offer an even broader range of nuclear fuel services to foreign customers.¹⁰³ In his May 2006 speech to the Federal Assembly, Putin observed: “We need to consolidate Russia’s position on the world markets for nuclear energy sector technology and equipment and make full use here of our knowledge, experience, advanced technology, and of course, international cooperation. Restructuring in the nuclear energy industry itself also aims at enabling us to achieve these goals.”¹⁰⁴

For several years, Russian officials have sought to establish their country as a core participant in a new

global network of international centers providing sensitive nuclear fuel cycle services. In June 2001, the Duma amended Russia's environmental legislation to permit importation of spent nuclear fuel of foreign origin for "temporary" storage pending its reprocessing. The law, while still banning the import of foreign radioactive waste, allows any nuclear waste generated during the reprocessing phase to remain in Russia, a practice at odds with that found in the few other countries that permit the reprocessing of foreign spent fuel.¹⁰⁵ In January 2006, Putin formally proposed that Russia and certain other designated countries enrich uranium fuel domestically, provide it at a modest price to countries lacking their own enrichment facilities, and then store and reprocess the spent nuclear fuel at national spent fuel storage facilities under some kind of IAEA oversight.¹⁰⁶

Although Taiwan, South Korea, and other countries have expressed interest in storing their spent nuclear fuel in Russia, the provisions of their atomic energy agreements with the United States forbid them from transferring U.S.-origin nuclear material elsewhere without prior American consent. In fact, some 80 percent of the world's non-Russian nuclear fuel originated from the United States or has been irradiated in reactors of American origin.¹⁰⁷ Section 123 of the 1954 Atomic Energy Act requires Russia and the United States to negotiate a separate bilateral accord before Russia could import U.S.-controlled spent nuclear fuel or collaborate with the United States in many other areas concerning the peaceful use of atomic energy (e.g., developing advanced nuclear technologies).

Until recently, American concerns about Russian-Iranian nuclear cooperation and Russian plans to reprocess the spent fuel into plutonium have—along with vocal environmental opposition and the lim-

ited capacity of Russia's storage and reprocessing facilities—stalled plans to import and store third-party spent fuel. The need for enhanced multinational collaboration to counter nuclear proliferation, reduce greenhouse gas emissions, and provide additional energy sources have led the Bush administration to reassess its position. Despite initial concerns, administration representatives eventually endorsed Russian proposals to negotiate a compromise with Iran that, while allowing Russia to complete construction of the controversial Bushehr reactor, would satisfy international concerns about Tehran's nuclear ambitions. In a joint March 2006 news conference with Russian Foreign Minister Sergey Lavrov, Secretary Rice said, "We have been supportive of the Russian proposal, which would be a joint venture with enrichment and reprocessing on Russian soil, and . . . with fuel provision to Iran and then a fuel take-back provision." She added, "There needs to be a way to provide for civil nuclear power that does not have a proliferation risk. And we think that both in the way that Russia has structured the Bushehr reactor deal and in this new proposal that this could be achieved."¹⁰⁸ In his own news conference with Putin at the July 2006 G-8 summit, Bush termed the Russian proposal to Iran "very interesting" and "a very innovative approach to solving the problem." He said he "strongly supported the initiatives."¹⁰⁹ Without access to their own uranium enrichment and reprocessing technologies, Iranian authorities would find it much harder to use a civil nuclear power program to develop a nuclear weapons program.¹¹⁰

Without definitively rejecting the Russian proposal, Iranian officials refused to accept any arrangement that would have prevented them from conducting at least some uranium enrichment activities on their ter-

ritory. They made clear that they wanted to establish a complete indigenous nuclear fuel cycle, which also would provide the basis for manufacturing nuclear explosives. Nevertheless, the negotiations convinced members of the Bush administration to endorse Russia's offer to provide civil uranium enrichment and radioactive waste disposal services to countries besides Iran. At the July 2006 G-8 summit in St. Petersburg, Presidents Bush and Putin announced plans to deepen bilateral cooperation on nuclear energy and security. In particular, they launched a Global Initiative to Combat Nuclear Terrorism and opened formal negotiations on a bilateral civil nuclear energy cooperation agreement.¹¹¹ Experts anticipate that negotiations on the latter accord, a prerequisite on the American side for the sharing of civilian nuclear technology between the two countries, will take approximately 1 year to complete.¹¹²

Russia's nuclear industry has surplus capacity for enriching uranium.¹¹³ The Russian government has introduced legislation in the Duma to establish the first international uranium enrichment center at Angarsk in southeast Siberia. The law would allow the facility to produce and reprocess nuclear fuel under IAEA supervision.¹¹⁴ Before Russia could actually import foreign spent nuclear fuel on a large scale, Russian officials would have to address a range of technical, political, and other issues.¹¹⁵ Nevertheless, they continue to offer to host a joint Russian-Iranian venture for enriching uranium with safeguards to prevent Iranian access to proliferation-sensitive technologies.¹¹⁶

Requiring the return of spent nuclear fuel to its original suppliers would advance global nuclear non-proliferation goals by depriving recipient countries of opportunities to reprocess it and extract plutonium.

Guaranteeing developing states the right to purchase and store fuel internationally at modest cost would make it unnecessary for them to develop national uranium enrichment and reprocessing capabilities. Without such sensitive technologies, Iran and other countries would find it much harder to use a civilian nuclear power program to acquire nuclear weapons. Any government that persisted in developing a costly indigenous nuclear fuel cycle despite assured access to international nuclear fuel services would raise alarm that military rather than economic motives drove its program.

A fuel repatriation program also would remove fissile materials from places that probably would have worse safety and security procedures than Russia—which has been receiving years of substantial foreign assistance to improve its practices in these areas. According to the IAEA, developing countries account for 60 percent of the new nuclear reactors under construction.¹¹⁷ The Russian government could devote some of the estimated \$10-20 billion in revenue it expects to earn from such imports to nuclear environmental restoration and nonproliferation projects in Russia and other countries.

Another sign of increased American interest in collaborating with Russia in the nuclear energy area occurred when the administration designed its Global Nuclear Energy Partnership (GNEP). When U.S. officials launched the program in early 2006, they made clear they wanted to secure Russian participation in the endeavor. A core objective of the GNEP is to develop new recycling technologies in countries already possessing advanced civilian nuclear energy programs. The envisaged technologies would separate spent plutonium differently so that it could be reused in fast

neutron reactors. This process would help consume the extensive global stockpile of already separated plutonium, which would reduce the need for long-term spent fuel storage and minimize proliferation risks. More importantly, the envisaged UREX-Plus and Pyroprocessing technologies would make the recycling process more proliferation-resistant than existing procedures because they would not separate the plutonium from other long-lived radioactive elements.¹¹⁸

The GNEP hopes to discourage the spread of plutonium reprocessing technologies to additional countries through a fuel leasing arrangement. Under the scheme, which resembles the fuel arrangement Russia offered Iran, nuclear supplier nations would provide fresh fuel for civilian nuclear power plants located in user nations that agree to refrain from enrichment and reprocessing. The resulting spent fuel would be returned to the fuel supplier and recycled using a process that does not produce purely separated plutonium. GNEP members also would seek to develop a new type of nuclear reactor for countries with rudimentary nuclear power programs. The reactors would have improved safeguards to counter the theft of nuclear materials and technologies.

Washington and Moscow have established several interdepartmental groups to discuss Russia's possible involvement in the GNEP, and how best to reconcile the two governments' slightly different proposals for internationalizing the nuclear fuel cycle.¹¹⁹ Russian nuclear experts have more experience with reprocessing technologies than their American counterparts, who for decades have opposed reprocessing because of its costs and proliferation risks. Instead, since the Carter administration, the U.S. nuclear power program has stored spent nuclear fuel rather than attempting to re-

cycle it. Potential Russian contributions to the GNEP include sharing its existing technologies and facilities (including the fast breeder reactor under construction at Beloyarsk), collaborating on developing more advanced recycling techniques and thermonuclear energy, and sharing the costs of pursuing GNEP initiatives. Russia's participation also could help overcome differences over the implementation of the 2000 plutonium disposition agreement. Whereas the United States wants to convert the 34 metric tons of weapons-grade plutonium that each side pledged to eliminate into mixed-oxide fuel for use in commercial nuclear power reactors, Russian authorities have indicated their intention to burn the excess plutonium in their existing fast-neutron reactor. In July 2006, the United States also helped Russia enter into the Generation IV International Forum. Since 2001, this multinational initiative has involved Japan, European Union (EU) countries, and other states with advanced civilian nuclear power programs collaborating in research and development of fourth-generation nuclear reactors with superior safety and security safeguards.

One problem with GNEP concerns timing. The Bush administration does not anticipate the development of a global commercial reprocessing system with proven technologies before 2025. Other analysts expect this timeline to extend far longer, perhaps 50 years from today. Given the need to address pressing proliferation problems, the administration should consider implementing as soon as possible Russian proposals to establish a global network of uranium enrichment centers, and view internationalizing plutonium reprocessing as a long-term project. It would be unwise, however, to allow Russia to operate the only enrichment center since it could charge excessive

prices and derive significant political leverage from such monopoly status. Although some countries (e.g., Iran, North Korea) would cooperate more readily with Moscow in this area than with Western governments, other states would probably prove unwilling to rely solely on Russia for such an important energy source. These proliferation problems became evident when, following Russia's cut-off of Ukraine's natural gas supplies in early January 2006, Ukrainian President Victor Yushchenko announced that his government wanted to develop its own capacity to produce uranium fuel for its nuclear power plants rather than remaining dependent on Russian-supplied fuel.¹²⁰

Deepening Bilateral Military-to-Military Engagement.

Members of the U.S. defense community have shown an intense interest in cultivating military-to-military contacts with their Soviet/Russian counterparts for at least two decades.¹²¹ Despite expressing concerns about American "double standards" on security issues and the impulsive character of bilateral military engagement—with surges in activity whenever a new problem faces the United States, followed by declining collaboration as the issue becomes less urgent for the Americans—General Baluyevskiy said that the Russian military had become more satisfied with the contacts after the events of 9/11 resulted in more concrete cooperation and fewer seminar discussions.¹²²

Although Americans often find that the Russian military remains more impervious to outside contacts and influence than many other Russian institutions, this condition makes U.S. attempts to engage the Russian defense community all the more essen-

tial. The armed forces invariably will play a decisive role in shaping Russia's future domestic and foreign policies. Although the number of Russian military personnel has declined since 2000, defense spending has tripled during this period.¹²³ The Pentagon enjoys certain unique advantages in trying to affect its evolution. For historical and other reasons, Russian defense leaders seem most comfortable working with their U.S. counterparts rather than with the armed forces of non-superpowers. Russians appreciate how Americans' worldwide interests lead them to engage Moscow on global issues—as opposed to the regionally focused dialogue Russian leaders normally conduct with their European and Asian counterparts.¹²⁴

Expanding reciprocal contacts between the two defense communities would help overcome the lack of understanding regarding the U.S. military and its professional ethos that apparently still pervades the Russian armed forces. Russians need to appreciate the high value that NATO militaries place on upholding human rights, curbing abuses and unprofessional conduct, and treating civilian control (including effective parliamentary oversight) as more than just preventing coups. In recent public opinion polls, over half of all Russians surveyed characterized the United States as an unfriendly country and as a “threat to global security.”¹²⁵ Such negative views might be even more prevalent among military personnel. Curtailing bilateral military contacts to protest against Moscow's undemocratic practices or other policies will only delay the time when the Russian armed forces become a less hostile institution. Since Russia and the United States are neither allies nor adversaries, military-to-military contacts and other forms of bilateral security engagement are both necessary and possible.¹²⁶

Enhanced engagement could prove especially useful in the volatile Central Asian region, where the two militaries operate independently but in close proximity. In Kyrgyzstan, Russian and U.S. forces have little formal communication despite their occupying nearby military bases. In a revealing comment, Ivanov said in April 2005, "Russian and U.S. military bases in Kyrgyzstan are not bothering each other."¹²⁷

These contingents should consider institutionalizing regular consultations among base commanders, exchanging liaison officers to ensure the timely exchange of information and communications, and conducting joint exercises on force protection, humanitarian relief and counterterrorism to explore how they might interact in a crisis. The two parties should encourage the host country military and perhaps the armed forces of other states that could deploy on its territory (including those from China and the members of NATO and the Collective Security Treaty Organization) to participate in these confidence-building activities. These preparatory steps would facilitate joint or multilateral military operations in Central Asia should they become necessary. Perhaps more importantly, all these measures could help avoid friendly fire incidents and other disasters in a future emergency or colored revolution.

In addition, staff members from U.S. Central Command (CENTCOM), the Joint Staff and the Office of the Secretary of Defense could regularly brief their Russian counterparts on U.S. military activities in Central Asia. Although ideally the information exchanges would proceed on a reciprocal basis, U.S. European Command staff offer such consultations unilaterally regarding some U.S. defense initiatives in the Caucasus, given Russian sensitivities about American military activities in former Soviet territories.¹²⁸ A more

ambitious level of defense cooperation would involve establishing a permanent link (such as a coordination cell) between CENTCOM and the Russian General Staff, and between CENTCOM and the Collective Security Treaty Organization's Central Asian group of forces, to deepen mutual understanding and counter misperceptions about their military operations in Central Asia.¹²⁹

CONCLUDING OBSERVATIONS

President Vladimir Putin's authoritarian tendencies have made sustaining support for Russian-American security cooperation harder but not impossible. In particular, opportunities exist for near-term further bilateral collaboration in the areas of cooperative threat reduction, third-party proliferation, and bilateral military engagement. With new leaders due to assume power in both countries in 2008, we also could see renewed efforts to negotiate new strategic arms control agreements, including those limiting military operations and reducing the number of both countries' strategic nuclear weapons below SORT limits.

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